



2008

ANNUAL REPORT OF  
**ACCOMPLISHMENTS**

South Dakota Cooperative Extension Service



South Dakota State University  
*College of Agriculture and Biological Sciences*

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## 2008 Annual Report of Accomplishments

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# Agriculture and Natural Resources



# MANAGING CHANGE IN LIVESTOCK PRODUCTION

## USE OF SOYHULLS AND DISTILLERS CO-PRODUCTS REDUCES FEED COSTS

Alternative feeds, including various co-products from the ethanol industry, soy hulls, and other forages are providing lower cost options for beef, sheep, swine and dairy producers. For example, many sheep producers have used soyhulls to reduce feed waste and lower diet costs for ewes and lamb finishing diets. When distillers dried grains with solubles (DDGS) and pelleted soyhulls were substituted for all or a portion of the corn and commercial protein supplements in diets for finishing lambs, the diets had a cost advantage of \$35 to \$60 per ton. Lambs performed similarly to those on traditional diets, thus with the lower diet cost, the feed cost saving per lamb was approximately \$8.50 (425 lbs of feed to finish the lamb x \$0.02 per pound (\$40/T) savings).

## ISSUE

Livestock producers are faced more changes and challenges in 2008 than ever before, and more changes are on the horizon for 2009. Changes in economics and public policies will result in many decisions for producers to make in upcoming months and years. Just some of these changes are increasing costs for feed, rent, energy, labor and transportation, an evolving ethanol industry, increasing land values, steady to increasing consumer demand for red meats, increasing export potential, mandatory country of origin labeling (COOL), and national energy policies. Research has shown that the most profitable livestock producers have:

- Lower levels of investment, particularly in depreciable assets
- Average levels of production
- Excellent marketing, of all products including young and cull animals
- Controlled costs, achieved by knowing unit cost of production (breakevens)

South Dakota Cooperative Extension Service (SDCES) Educators and Specialists are committed to providing producers the information and tools they need understand the interactions of these key areas and to work through the decisions they must make in these changing times. Based on the research shown above, Extension efforts are focusing on five major areas:

- Production Efficiencies
- Grazing Management
- Unit Cost of Production
- Risk Management
- Making Sound Business Choices

## WHAT WAS DONE

South Dakota State University faculty and specialists and Extension educators were involved in numerous educational efforts, including:

- Workshops focused on feeding management reached over 1,000 producers. Specific topics covered included:
  - o Use of alternative feeds including distillers grains, syrups and other co-products, soy hulls and lesser-known types of forages in rations for beef cows, stocker calves, feedlots, ewes, feeder lambs, sows, feeder pigs, milking and dry dairy cows and dairy heifers.
  - o Developing least cost rations for various species and stages of production.
  - o Early weaning to reduce feed needs and allow for earlier marketing of cull cows.
  - o Effects of cow nutrition on calving, calf performance, and rebreeding.
  - o Using grazing in dairy production systems.
- One-on-one consultations with producers addressed similar topics as above. Estimates from educators and producers indicate the approximate number of producers reached and animals the producers were responsible for included:
  - o Over 400 cow-calf producers, with 75,000 cows
  - o 25 backgrounding operations and 7 large feedlots with varying capacities
  - o Over 450 sheep producers, 300+ with ewe flocks and 150 with lamb feedlots, who cumulatively have 40,000 ewes and 50,000 feeder lambs.
  - o At least 40 swine producers, with over 22,000 sows and 225,000 pigs.
- Extension publications and popular press articles based on Extension faculty's expertise have provided information to many producers across the state and throughout the north central region of the US. Examples of Extension Extras used and referenced and the regional and national publications in which they were used during 2008 include:
  - o Extension Extras:
    - ExEx 4035 – High Priced Corn & Dairy Rations
    - ExEx 2052 – Feeding Soy Hulls & Dried Distillers Grains with Solubles (DDGS) to Sheep
    - ExEx 2053 – Using DDGS in Mixed Lamb Diets
    - ExEx 2058 – Oilseed Crops in Beef Cattle Rations
    - ExEx 2036 – Feeding Corn Distillers Co-Products to Beef Cattle
  - o Regional and National publications:
    - Feedstuffs magazine
    - American Sheep Industry Association Sheep Industry News
    - Distillers Quarterly
    - BEEF magazine
  - o 20 different “bookmarks” (a quick, easy-to-read format) were distributed at DakotaFest and other forums to peak producers’ interests in strategies to deal with high input costs.

- Presentations developed by SDCES faculty at South Dakota State University have been featured regionally and nationally at meetings such as:
  - o Wisconsin Sheep and Wool Festival (Madison, WI)
  - o Wisconsin Dairy Producers Conference (Madison, WI)
  - o Bio-energy Workshop sponsored by USDA Office of the Chief Economist, Office of Energy Policy and New Use (Tuskegee University, Tuskegee, AL)
  - o Central Plains Dairy Expo (Sioux Falls)
  - o National Women in Agriculture Conference (Oklahoma City, OK)
  - o Ethanol Co-Products Storage Conference (Meade, NE)

## IMPACTS

Beef Industry:

- Many producers were in situations where the feedstuffs they had used traditionally had become quite expensive; but in many cases, so were the alternatives. These producers benefited from learning how to price feeds per unit of protein or energy. The producers are now armed with the tools they will need to make the determination on which feed is the best bargain now and in the future. At a minimum, the producers saved \$0.05 per head per day. For a herd of 200 cows, that translates to \$10 savings per day.
- “This is something I wish I would have thought of doing several years ago” were the words of one producer who implemented early weaning and earlier marketing of cull cows. The earlier marketing allowed him to capture the higher markets for cull cows typically seen in July through September, as compared to October and later. For a producer with 10 cull, the net increase in income resulting from the higher price received in September (as compared to December) and the feed savings for three months, would be over \$1700.

Sheep Industry:

- For the 1st two quarters of 2008 pelleted soyhulls were more than \$75/ton lower than corn and similar to forage costs. Many producers have used pelleted soyhulls to reduce feed waste, lower labor and diet costs for ewes and lamb growing/finishing diets. Recommendations with DDGS and pelleted soyhulls or corn in diet formulation had a cost advantage of \$35 to \$60 per ton compared to conventional corn plus commercial protein supplement into the 3rd quarter of 2008. Based on similar performance and lower cost, the feed cost saving per lambs would be 425 lbs of feed x \$0.02 per pound cost savings = \$8.50 per head.
- Several producer testimonials have been received on this:
  - o “I have followed your recommendations using DDGS and soyhulls with excellent results. Our early weaned lambs were marketed three weeks earlier than in the past at similar market weights having F:G (feed to gain ratio) at 6 to 1. Diet formulation costs were \$35 per ton less than conventional diets used in the past with corn and commercial pellet.” (Northwest IA Producer with 400hd flock)
  - o “Using soyhulls to as a sole source of forage ad libitum during gestation and lactation provided a tremendous labor saving, fewer starved out lambs (higher milk production) and lower cost due to less forage waste.” (Similar comments received from four producers in MN and SD. Cost savings were approximately 2 lb of feed per day during lactation or equivalent to \$0.10 per head per day.)

Swine Industry:

- Producers added or increased the amount of DDGS into diets used with sows and pigs With a 10% inclusion of DDGS, producers saved \$5/ton of feed. The producers that made these changes had 15,000 sows and 150,000 pigs, thus, the change translates to approximately \$325,000 in feed cost savings.
- Reducing average market weight of finished hogs by 20 pounds per pig was a change that 10 producers made. Given that the last weight put on is the most inefficient in terms of pounds of feed needed to add a pound of gain; this resulted in approximately \$75,000 in feed savings. In the broader scope of the swine market, reduced market weights mean fewer pounds of pork produced, which typically results in higher market prices over the long term.

Dairy Industry:

- Many dairy operations have adopted the use of distillers co-products, resulting in significant feed cost savings.
- Training on optimizing the use of feeds, has been presented to dairy employees in English and Spanish, reaching a group of employees that has often been overlooked.

## COLLABORATORS

Numerous private industry contacts, media and commodity organizations.

## CONTACTS

South Dakota Cooperative Extension Service Staff and South Dakota State University faculty and specialists contributing: Dr. Jeff Held(1), Dr. Alvaro Garcia(2), Dr. Bob Thaler(3), Dr. Cody Wright(4), Dr. Rosie Nold. Extension Educators contributing and others located throughout the state Adele Harty, Maurice Lemke, Jeff Lounsbury, Duaine Marxen, Heidi Doering-Resch, Kevin Vaith; Lanette Butler, Tyler Melroe, Ann Price, Rebecca Schafer, Jim Krantz, Tracey Renelt, Clint Clark, Ken Wonnenberg, John Keimig, Robin Salverson, Val Mitchell.

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## PREVENTING LIVESTOCK LOSSES AND IMPROVING PERFORMANCE THROUGH MINERAL NUTRITION

### PREVENTING MINERAL TOXICITIES REQUIRES CAREFUL ANALYSIS

South Dakota Cooperative Extension Service has helped producers analyze their beef cattle rations and water supplies to arrive at the least-cost rations which can safely be fed to cattle. The analysis saves producers money by reducing feed costs and reducing potential losses in production due to improperly balanced rations.

### ISSUE

Sulfate levels in water and some feedstuffs, particularly some alternative feedstuffs such as distillers grains, are high enough to become toxic to livestock, causing illness and sometimes death. Other mineral imbalances can also cause lowered production and increased mortality. Identifying the cause of these problems is extremely difficult without an understanding of mineral nutrition. With this understanding, South Dakota Cooperative Extension Service staff and practicing veterinarians can help livestock producers avoid and correct these problems.

### WHAT WAS DONE

- Mineral Nutrition for Beef Cattle Veterinarians shortcourse was presented to 21 veterinarians and Extension educators. Key minerals, requirements, assessment of mineral status (including training on liver biopsy procedure), mineral sources, and formulation of supplements were covered.
- Spreadsheets to evaluate mineral supplements and to evaluate risk from high-sulfate water and alternative feeds were developed.
- Numerous (over 150) one-on-one contacts with producers and practicing veterinarians by Extension specialist and/or Extension educators.
- Producer meetings at five locations across the state have reached additional producers.

### IMPACTS

- o As a result of the Mineral Nutrition for Beef Cattle Veterinarians, the veterinarians are more able to answer questions for their clients regarding mineral nutrition. Attendees rated the value of the information to their veterinary practice on a scale of 1 to 10 (with 1 = not valuable and 10 = extremely valuable) as follows:

o Mineral nutrition review:	8.6
o Liver biopsy procedure:	8.4
o Determining mineral status:	8.4
o Formulation of mineral supplements:	8.0
- o Attendees also indicated the course was beneficial, that they had acquired new knowledge, and that they would recommend the course to others (average ranking of 9 or above on a 10 point scale).
- Producers have realized improvements in animal health by adjusting their mineral supplementation program and cost savings by eliminating over-supplementation of minerals. Specific examples include:
  - o Over 70 producers in Ziebach and surrounding counties have tested their water to assess risk of sulfate-related health problems. These contacts have impacted over 30,000 head of cattle. Many of the producers have altered their mineral program to help cope with high-sulfate water.
  - o A producer in Haakon County that had history of stillborn calves now uses a different formulation for mineral supplement which was developed by the Extension educator. The problem of stillborn calves has been eliminated, and the new formulation is less expensive than his previous supplement.
  - o A feedlot in Beadle County which had a history of health problems in their feedlot worked with the Extension educator to analyze the diet and identify a copper deficiency. Health status of the calves has improved after the additional copper was included in the diet.
  - o Extension educators have worked with producers in Beadle, Marshall and surrounding counties on incorporating distillers grains into their cattle rations. By using the sulfate spreadsheet, they have determined the maximum amount of distillers grains that could be safely utilized by these producers given the sulfate content of their water. One producer elected not to use distillers grains because of the risk.

### COLLABORATORS

- Quali-Tech, Inc., veterinarians and allied industry

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Dr. Cody Wright(1). Extension Educators: Adele Harty, Maurice Lemke, Kevin Vaith, Tyler Melroe, Ann Price, Lanette Butler, Jim Krantz.

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## REPRODUCTIVE MANAGEMENT SKILLS HELP REDUCE CATTLE PRODUCERS' COSTS

### COST SAVINGS REALIZED FROM ARTIFICIAL INSEMINATION SKILLS

Over 40 producers now have the skills to do their own artificial insemination, saving them nearly \$1500 each in direct costs. Producers, students and industry reps rely on the South Dakota Cooperative Extension Service and South Dakota State University for expertise in this and other cattle reproductive management training opportunities.

### ISSUE

With an annual calf crop of approximately 1.7 million calves, beef cattle are a major contributor to South Dakota's economy. Age of calf at weaning is the single largest factor that affects weaning weight and weaning weight is a critical factor in determining the income of cow-calf producers. Research at the USDA Meat Animal Research Center indicated that for each day of age after the beginning of the breeding season that a calf is born nearly 2 ½ pounds of weaning weight is lost (R. Cushman). Therefore, to improve the efficiency of production, it is important to have as many cows and heifers as possible be bred at the beginning of the breeding season. Furthermore, the use of genetically superior sires through artificial insemination (AI) is the faster and most economical method to improve economically important traits in the beef industry.

### WHAT WAS DONE

- The 31st annual Ranchers forum in Faith, bull development clinics (2), prebreeding discussion workshops (2), and cattle AI schools (2) included presentations, informal discussions, and hands-on training and reached a community of interest of producers, future producers and private industry interested in improving beef cow reproductive management.
- 41 stakeholders learned hands-on skills and are now capable of artificially inseminating cattle.
  - o Canton AI school participants represented 2200 cows from herds of 10 to 300 head.
  - o Participants had wanted to learn how to A-I for an average of 5 years .
- Stakeholders (20) learned the importance of bull nutrition, selection and management on how it can impact the entire calf crop (Wessington Springs and Oacoma).
- More than 40 stakeholders (Howard and Watertown) had the opportunity to sit down and have open discussion on breeding protocols, reproductive management, and specifically what is occurring on their operation and how to improve reproduction on their operation.
- Estrous synchronization along with natural service to improve reproductive efficiency was a practical application that stakeholders (21) learned.

### IMPACTS

- Participants in one AI school increased their knowledge base of A-I, estrous synchronization, cattle management and nutrition by 35%.
  - o By being able to do their own A-I for their herds, and not hiring it done, participants will realize an average cost savings of \$14 per cow. With an average herd size of 104 cows this results in an average annual savings of \$1456 per producer.
- A producer/spouse testimonial from a bull selection clinic:
  - o "... has never been much for taking time out of farming to go and hear speakers...as most educational speakers we have access to are actually product sales people using the education to draw in perspective customers, he usually does most research on his own, reading, etc. and is very knowledgeable about his trade. He was VERY impressed... with the education session on bulls.... The Bull Session really made him realize how much he did NOT know about cows, especially nutrition, even though he has been around them all his life. Please pass this on to the people involved in the Bull Session, as this really speaks for the impact of these programs and the caliber of the people presenting."
- A 30% increase in conception rates (from 30% in 2007 to 60% in 2008) was realized by one herd, based on changes in synchronization protocol.
- Changes in heifer management for one herd resulted in saving a month's worth of feeding, while maintaining a 55% AI conception rate.
- A summer job for Genex™ (an AI company) resulted for one AI school participant.
- Producer feedback from prebreeding discussion workshops was excellent because of opportunities to have specific questions answered about their operations.

### COLLABORATORS

- American Breeders Service, Select Sires, Pfizer, Sioux Falls Regional Livestock Auction.

## CONTACTS

South Dakota Cooperative Extension Staff involved: Extension Educators Jeff Lounsbery(1), Jim Krantz, John Keimig, Clint Clark, Tracey Renelt, Kevin Vaith, Rebecca Schafer, Heidi Doering-Resch, Duaine Marxen, Maurice Lemke. South Dakota State University Extension Specialists: Dr. George Perry(2).

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## MILK QUALITY TRAINING SESSIONS FOR HISPANIC MILKERS

### IMPROVED PROFITABILITY AND FOOD SAFETY RESULT FROM MILKER TRAINING

Training provided to employees of dairy operations in eastern South Dakota has resulted in improved incomes and sustainability by reducing udder infections and increasing milk production. One dairy has seen premiums of over \$200 per day, or over \$76,000 per year added to their income based on changes which happened after the milker training.

### ISSUE

Overall bacteria and somatic cell counts have a large impact on the price that dairy farms receive for their milk. Bacteria and somatic cell counts can be controlled by using best management milking practices that reduce the incidence of udder infections. High employee turnover is a constant problem in US dairy farms. Conducting repeated milk quality training sessions aimed at the production of hygienic milk is critical to improving income and sustainability of dairy operations.

### WHAT WAS DONE

- Training sessions were conducted at local dairies that have Hispanic employees as their main source of labor. Best management practices and the rationale behind them were highlighted and followed by practical demonstration while employees performed their routine chores.
- Evaluation of training included comparison of baseline somatic cell counts of the dairies before training to somatic cell counts after the employees received training.
  - o Success was measured based on the actual decrease in somatic cell counts which reflects the decrease in intra-mammary infections.

### IMPACTS

- Employees (milkers) learned the “why’s” behind the “how’s”. This is critical for them to adopt specific practices and repeat them routinely thereafter. Adequate cow preparation and hygiene are critical to avoid dissemination of bacteria between individual teats in the udder and from the infected udder of one cow to that of another cow’s healthy udder.
  - o Milkers learned why pacing themselves and not rushing is so important to the cow. Learning the importance of the exact timing between different steps in the milking procedure is critical for adequate milk letdown and more rapid and safe milking.
  - o Use of gloves, use of the correct teat disinfectant before and after milking, use of individual towels, and the right procedure to dry the teats has helped reduce the transfer of infections and the transfer of debris to the milk.
- Bacteria such as Staphylococcus aureus are not only causes of very difficult to treat udder infections but also can be transferred to humans.
  - o Employees that learn the basics of microbiological hygiene are more likely to translate them into their everyday lives.
  - o A reduction in somatic cell counts results in increased profits for the dairy, which in turn results in premiums, raises, and overall employee satisfaction. Better returns increase the sustainability of the dairy farm.
- Quotes from dairy owners:
  - o “Thanks in great part to your services, we went from 600,000 scc and 25,000 strep ag level in our bulk tank to a consistent 150,000 scc average and a 0 strep ag level in 4 months.” (scc is somatic cell count and strep ag is a bacteria).
  - o “Your efforts have helped to keep employees motivated and have given them a great sense of pride because they understand that what they do has such a serious impact on cow health and milk quality. I believe that when we make the effort to provide education and training on the dairies and let our employees know that we care about them as individuals we create an atmosphere that is beneficial both to our employees and to the farms. Our turnover has been minimal in this first year, and our employees continue to strive for excellence.”
  - o “The milker training has improved the quality of milk produced at our dairy. Before the trainings the SCC count ran about 600,000. During the last few months we are averaging about 185,000. Tremendous improvement. . . . The milkers now understand our standard procedures as well as the importance of routine.”
  - o “Presently our dairy earns quality premiums for our SCC levels of about \$.09/cwt and low bacteria levels of \$.10/cwt. From a dairy that ships about 110,000 pounds a day, the quality premium payments are a significant part of our milk check.” (This translates to a \$209 premium per day or over \$76,000 in premiums in a year.)

### COLLABORATORS

- Private industry including Land O’Lakes, and Pfizer.
- Dairy operations in eastern South Dakota.

### CONTACTS

South Dakota Cooperative Extension Service Staff involved: Dr. Alvaro Garcia; Extension Dairy Specialist, Box 2104, SDM 113A, Brookings, SD 57007; (605) 688-5488; Alvaro.Garcia@sdstate.edu.

## REDUCING SWINE PRODUCTION COSTS

### PRODUCERS REDUCE FEED AND ENERGY COSTS

By using dried distillers grains to replace a portion of the corn, soybean meal and dicalcium phosphate in typical swine rations, six farms, averaging 1200 sows each, are projected to save over \$42,000 annually per farm, based on 2008 feed prices. Recommendations and ration balancing for adequate nutrition, were provided by South Dakota Cooperative Extension Service. Other producers have implemented building ventilation and other management changes to significantly reduce propane costs.

### ISSUE:

Sharply higher feed and energy inputs for swine producers in combination with lower market trends has made a majority of 2007 and 2008 very difficult economically. For most, if not all of this time period, being profitable has been impossible. In response to this gloomy economic downturn, Extension Livestock Educators and Extension Specialists have worked with swine producers to improve production efficiencies in order to assist them in becoming least cost producers.

### WHAT WAS DONE

- Two producer meetings (Sioux Falls and Freeman) were held in the winter/spring of 2008, with a total of 73 producers and farm employees in attendance.
- These meetings focused attention on:
  - o reducing feed costs
  - o unit energy use and ventilation
  - o emerging swine diseases
  - o out of feed events
- In addition, numerous contacts were made between Extension Specialists, Educators and swine producers. These contacts involved one on one consultations, farm visits, and informal group discussions in the areas of swine nutrition, building management and ventilation, herd health, swine diseases, alternative ration formulations, pork quality assurance, and reduction of production costs.

### IMPACTS

- Based on information attained at producer meetings 6 farms (averaging 1200 sows) implemented dried distillers grains (DDGS) in their rations and are projected to save a total of \$256,650 in feed savings annually. This is an average feed savings per farm of over \$42,000 per year.
- Colonies are responsible for over 60% of the pork production in the state of South Dakota. They are very interested in learning about new swine industry technology and management skills delivered through the Cooperative Extension Service. At the recent producers meetings in Sioux Falls and Freeman, individuals representing 10 colonies were in attendance.
- Through their attendance of Extension Ventilation Seminars offered in 2007, Heartland Pork near Alpena SD (a 2000 sow farrow to feeder pig and finishing unit) gained the added knowledge and management skills needed to aid them in saving \$57,000 in energy costs. Dave Uttecht, unit manager reported that from October 1, 2006 through March 2007 their propane bill was \$96,928. In contrast from October 1, 2007 to March 19, 2008 the unit spent only \$40,285 for propane. This savings of \$56,643 occurred during the winter of 2007-08, which was much colder and when propane was more expensive than in 06-07. Uttecht added, “This is a direct example of why a strong swine extension, teaching and research program is needed for swine producers in the state of South Dakota.”

### COLLABORATORS

- Mike Brumm Swine Consulting,
- South Dakota Pork Producers Council
- National Pork Producers Council

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Jeff Lounsbery(1), John Keimig. South Dakota State University Extension Specialists: Bob Thaler(2), Dr. Steve Pohl, Dr. Russ Daly.

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## IMPROVING THE SWINE MANAGEMENT SKILLS OF YOUTH THROUGH PORK QUALITY ASSURANCE

### TRANSFORMING SOUTH DAKOTA'S YOUTH SWINE PRODUCERS

Youth participating in the 4-H Swine project and attending the Pork Quality Assurance training hosted by the Cooperative Extension Service have the knowledge and skills to ensure the generation of a safe product for pork consumers.

### ISSUE

Most pork harvest facilities require Pork Quality Assurance (PQA) certification of producers from whom they receive hogs, including 4-H and FFA members. Growers and youth must use production practices outlined in this National Pork Board developed program to minimize physical, chemical and biological hazards while also maximizing swine production efficiencies and improving animal well being.

### WHAT WAS DONE

- Extension Livestock Educators were certified as trainers through the South Dakota State University Extension Veterinarian and the National Pork Board on the “Ten Good Production Practices”.
- Youth were PQA certified by Extension Educators through three methods:
  - o Participate in a training session.
  - o Test out through completion of an age-appropriate test.
  - o Complete home training CD.
- Educators verify completion of youth training online with the National Pork Board.

### IMPACTS

- 364 youth swine producers now have the tools to effectively implement the “Ten Good Production Practices” outlined by the National Pork Board.
- When surveyed at five training sessions:
  - o 29% of the youth could identify pigs through the use of ear notches.
  - o 21% indicated their intentions to maintain feed records that document medications given and the withdrawal time of the medications.
  - o 21% plan to incorporate approved handling practices that reduce bruising and stress to the animals.
- Producers, including youth producers, adopting Good Production Practices raise swine with lower incidence of injection site lesions.
- Youth adopting the “Ten Good Production Practices” and utilizing medications in label-directed methods have lower production costs, reduce antibiotic residue risk and become industry advocates.

### COLLABORATORS

- National Pork Board

### CONTACT

South Dakota Cooperative Extension Service Staff involved: South Dakota State University Extension Veterinarian Dr. Russ Daly(1), 4-H Livestock Coordinator Rod Geppert(2), Extension Educators: Tracey Renelt(3), Lanette Butler, Adele Harty, John Keimig, Jim Krantz, Maurice Lemke, Jeff Lounsbery, Duaine Marxen, Tyler Melroe, Ann Price, Rebecca Schafer, Kevin Vaith, Ken Wonnemberg, Roger Barrick, Leah Burnison, Don Guthmiller, Alice Nickelson, Nancy Pauly, Steve Sutera.

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# HELPING PRODUCERS COPE WITH VOLATILE ECONOMICS IN THE SHEEP INDUSTRY

## HELPING PRODUCERS COPE WITH VOLATILE ECONOMICS

Many sheep producers have implemented practices to manage their risk, control costs and maximize efficiency in their operations, based on knowledge gained through programming initiated by the South Dakota Cooperative Extension Service. South Dakota ranks 5th in the nation in total sheep and lamb numbers produced, according to USDA's SD Ag Statistic Service in 2007. Thus, producers' efficiency and profitability have a large impact on the state's economy.

## ISSUE

For several years, sheep producers have been rewarded with the most consistent cash prices of any of the three major livestock species. However, there are no guarantees that this scenario will remain unchanged, as global imports and production inputs remain volatile. Current knowledge of efficient production, controlling costs, and managing market risks will be critical for producers to remain competitive.

## WHAT WAS DONE

- The Fifth Annual Regional Sheep Forum was held on the South Dakota State University campus. Topics covered included:
  - o Livestock Risk Protection insurance recommendations for cost control measures,
  - o Pregnancy detection through the use of ultrasound,
  - o Marketing management decision alternatives, and
  - o Necropsy demonstrations that visually depicted conditions of diseased or unhealthy lambs.
- Producers received one-on-one help at various Extension Offices throughout South Dakota with various sheep management issues, including:
  - o Least-cost ration balancing for the sheep flock.
  - o Selection and utilization of alternative feed sources, which lowered ration costs.
  - o Basic sheep production knowledge given to new sheep producers.
  - o Best and most economical herd health management practices.

## IMPACTS

For the Regional Sheep Forum, 21 of 45 attendees responded to surveys, and of these:

- Over 75% were attending for the second time in 5 years, and 10% had attended all 5 forums.
  - o The attendees' flock numbers totaled 10-15,000 ewes.
- Over 30% of producers indicated they have applied information learned at the forum in their operations, including:
  - o Vibro vaccinations
  - o Feed cost control
  - o Ultra-sounding for pregnancy testing
  - o Blood testing for Scrapies carriers
  - o LRP (Livestock Risk Protection) insurance
- On a scale of one to five (1= poor, 5= excellent), producers ranked this program:

o Program met my expectations	4.00
o Overall quality of the program	4.19
o Information will be useful in decision making	4.19
o Information was educational	4.42
o Information is of economic value	4.42
o Visual demonstrations	4.47

One on One Consultation Helps Producers Improve Sustainability

- An individual producer noted a savings of \$8.00/head in feed cost savings. This resulted in a total of \$600 of reduced feed expense for the operation.
- A young 4-H member learned proper health and feeding strategies and went from lambs that were not gaining the previous year to lambs that won the rate-of-gain contest at the local 4-H Achievement Days.
- Three young producers secured funding for USDA loans, via help from the Extension Educators, to purchase sheep for start-up lamb operations. Educators also provided information on basic management practices, least-cost rations, and parasite control. All the new producers have been able to pay off the loans ahead of schedule.

## COLLABORATORS

- South Dakota Sheep Growers Association
- Veterinarian Craig Hanson of the South Dakota Animal Industry Board
- Patty DeZeeuw, D&D Crop Insurance, LRP Insurance Agent
- Robert Zelinsky, South Dakota State University Sheep Unit Manager

## CONTACTS

South Dakota Cooperative Extension Service staff involved: South Dakota State University Extension Sheep Specialist Jeff Held (1), Extension Educators Tracey Renelt (2), Jim Krantz, Steve Sutera, Terry Hall.

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## REDUCING LIVESTOCK LOSSES THROUGH VETERINARY EXTENSION EDUCATION

### CATTLE PRODUCERS CHANGE PRACTICES TO REDUCE HARDWARE DISEASE

Discontinuing the use of cattle feeders made from worn steel belted tires was a change many cattle producers made after learning about the link between the tires and hardware disease of cattle, through information provided by South Dakota Cooperative Extension Service. Such changes, along with other management changes affecting pork quality, calf health and bull management prevented animal suffering, illness, and production losses in livestock in South Dakota and across the country.

### ISSUE

Animal health is critical not only to the profitability and sustainability of South Dakota livestock producers, but it has far-reaching implications for animal well-being, food safety, and public health. It is the goal of Veterinary Extension at SDSU to communicate important information regarding animal health for all major livestock species to veterinarians and livestock producers.

### WHAT WAS DONE

- Communicated the threat of hardware disease in cattle originating from worn steel belts on tires used as feeders, based on findings from the South Dakota State University Veterinary Diagnostic Laboratory.
  - Press release and media interviews explaining the threat of these new sources of hardware reached state and national audiences.
- National audiences included American Veterinary Medical Association (AVMA) through Journal of the AVMA and AVMA News Bytes e-mail list, Drovers Journal, Agri-View, Kansas State University Extension, and Cattle Network.
- Local media outlets included KELO, KSFY, Farm Forum, Sioux City Journal.
  - Video story posted on SDSU Veterinary Extension and Today's Ag websites reached many producers across state.
- Messages about animal health and ways to keep animals healthy and productive reached many producers:
  - 71 swine producers were certified in PQA Plus, a program designed with the ultimate goal of safe pork for consumers.
  - Extension Extras ("Health of the Herd Bull" - ExEx 11024, and "PVPs and QSAs: Opportunities to Add Value to South Dakota Cattle" - ExEx 11023) dealing with health of herd bulls and adding value to South Dakota beef calves were distributed to many producers.
  - Veterinary and animal health considerations were part of numerous extension programming efforts including:
- High Input Costs for Livestock Producers, Raising Cattle "Naturally," and Drylot Production of Beef Cattle. 28 different animal health talks to producers, veterinarians, physicians, students, and consumers; and 13 print and broadcast interviews.

### IMPACTS

It is unknown exactly how many producers were exposed to the message about the link between tire feeders and hardware disease, but it can be assumed that many producers critically evaluated the tires they were using and discontinued the use of any worn feeders. This action likely prevented the loss of unknown numbers of cows, and also spared many animals from the pain and suffering of hardware disease. Some examples which emerged:

- Marion, SD producer had lost 4 cows over the past two years due to hardware disease. Previous investigations had not identified a source. After hearing the news reports, the producer checked his tires and found many of them to be in a state of disrepair. The tires were removed, and no hardware cases have been observed since.
- Iowa producer described vague symptoms resembling hardware disease in 6 of 75 cows during the winter of 2008. A visit with SDSU Veterinary Extension raised the possibility of tire feeders being a source. The producer later reported that several tire feeders were later found to be a source of the hardware. The tires were removed and no problems with hardware disease have occurred since.

### COLLABORATORS

- South Dakota Animal Disease Research and Diagnostic Laboratory
- SDSU Ag-Bio Communications
- Dr. Jennifer Poindexter-Runge, Ree Heights, SD
- South Dakota State University Department of Animal and Range Sciences

### CONTACTS

South Dakota Cooperative Extension Staff involved: Extension Veterinarian Dr. Russ Daly(1), Extension Livestock Educators: Jim Krantz, Tracey Renelt, Lanette Butler, Tyler Melroe, Kevin Vaith, John Keimig, Jeff Lounsbery, Duaine Marxen, Rebecca Schafer, Ann Price, and Ken Wonnemberg.

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## VETERINARY EXTENSION: ENHANCING THE SUCCESS OF SOUTH DAKOTA VETERINARIANS

### ENHANCING VETERINARY PRACTICES THROUGH IMPROVED MANAGEMENT

Changes in service fee structures, inventory procedures and services offered are just some of the changes that South Dakota veterinarians have made based on training provided by South Dakota Cooperative Extension Service. Measurable changes in economic success, along with the potential for greater long-term stability of practices, have been the result of these changes.

### ISSUE

Economic success and stability of South Dakota veterinary practices and ongoing professional development for veterinarians, especially for those in food- and mixed-animal practices, is critical in ensuring that livestock producers and animal caretakers have access to proper veterinary care for their animals. This in turn, helps ensure profitability and sustainability for livestock operations, and has important implications for animal welfare, food safety, and public health.

### WHAT WAS DONE

- South Dakota State University Extension Veterinarian hosted a full day session for 30 veterinarians and support staff on "Health of Your Veterinary Practice," featuring a practice management expert with advice for running a more successful business.
  - Evaluations were completed by all attendees at the meeting and by 20% of attendees via web surveys four months later.
- Coordination of other professional veterinary continuing education meetings included:
  - Mineral Shortcourse for over 20 veterinarians and extension educators.
  - South Dakota Veterinary Medical Association (SDVMA) Summer meeting:
- Fifty-one veterinarians and representatives from 8 different animal health companies gained cutting-edge knowledge regarding current animal health issues and products.
  - SDVMA Annual meeting:
- Sessions provided for over 160 veterinarians and an equal number of technicians and industry personnel.

### IMPACTS

- 100% of attendees of "Health of Your Veterinary Practice" rated usefulness of information as a 4 or 5 on a 5 point scale (87% chose #5).
- 4 months following "Health of Your Veterinary Practice", attendees reported implementing ideas of profit sharing and return on investment for owners; better inventory management; and more appropriate service prices.
- 100% reported practice income similar or somewhat higher than previous year despite most mixed- and food-animal practices depending on livestock clients that are facing extraordinarily high feed and other input costs.
  - 67% had made or plan to make positive changes in practice service fee structure.
  - 83% had made or plan to make positive changes in inventory procedures.
  - 83% had made or plan to make positive changes in services offered.
  - 33% had made or plan to make positive changes marketing and staff relations.
- Representative quotes from "Health of Your Veterinary Practice" participants:
  - "The most important point made...was that we need to be profitable in order to be able to pay associates adequately...Without this philosophy food animal medicine, food animal safety and everything else we do may become a lost art. With that philosophy we can survive and make our profession a feasible and even attractive choice for future veterinarians..."
  - "[Since the meeting] cash flow has improved, eliminating the need for operating loans, thus increasing profits."
  - "I hope to be [practicing on my own] here...soon and I will definitely be using all of the information presented."
  - "This [conference] was a good way to re-focus our management and give us confidence in our policies."
- Continuing Education for South Dakota Veterinarians:
  - At the SDVMA Annual Meeting 80% of attendees ranked usefulness of information for all sessions as 4 or 5 on 5-point scale (5 being "Extremely useful" for practice application.
  - Mineral shortcourse for Veterinarians included hands-on application of mineral formulations and liver biopsy procedures. This "train-the-trainer" approach resulted in application of this information to the herds across the state.

### COLLABORATORS

- South Dakota Veterinary Medical Association
- Numerous animal health companies and service providers
- South Dakota State University Department of Animal and Range Sciences

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Dr. Russ Daly, South Dakota State University Extension Veterinarian (russell.daly@sdstate.edu; 605-688-6589)

## TEACHING YOUTH AND ADULT LIVESTOCK PRODUCERS ABOUT CARCASS PROGRAMS

### HELPING YOUTH UNDERSTAND TERMS USED IN LIVESTOCK & CARCASS PRICING

Yield grade, quality grade, percent lean and rib eye area are just a few of the terms youth are learning by participating in 4-H carcass merit programs offered by the South Dakota Cooperative Extension Service. Understanding the pertinent terms and measurements helps youth and adults gain a better understanding of discounts and premiums involved in swine and beef grid pricing programs, and ultimately, to be able to market their livestock in the way that is most profitable for their operation.

### ISSUE

In livestock marketing there are many ways to sell livestock and many opportunities throughout the life of the animal to sell them. When a producer decides to retain ownership and control of their animal from birth to slaughter they have the following marketing options: Sell the animal in the live market, sell “in the meat” (group carcass priced), sell on a grid based on carcass characteristics, or sell individually to local customers. Higher prices are often realized when producers market their animals in the carcass based programs, as these allow premiums for animals that meet requirements for the types of carcasses that are in high demand, while discounting those that fall out of the packers’ preferred standards. Knowledge of the terms and carcass measurements used to determine premiums is necessary for producers, youth and adult, to take advantage of grid based marketing.

### WHAT WAS DONE

- Carcass data for beef and swine carcass contest entries is collected by Extension educators and volunteers. The carcass data, along with an explanation of the data, how the carcasses ranked, and why the carcasses received that rank or placing is then provided to the youth and their parents by Extension educators.
  - o Beef cattle carcass based contests are part of the 4-H program in Hutchinson, Brown and Bennett counties. Fat thickness, rib eye area, carcass weight, yield grade, marbling, and quality grade are among the data collected for beef.
  - o Swine carcass contests are offered as part of the 4-H program in Miner, Brookings and Turner Counties, as well as the South Dakota State Fair 4-H Swine Show. Fat thickness, loin muscle area and percent lean are the data collected for swine.
  - o Beef Carcass merit is calculated at the Western Jr. Livestock Show and the South Dakota State Fair 4-H Market Beef show.
- Ultrasound is used to determine carcass measurements for some events. Explanation and observation of ultrasounding provides youth and adults a first-hand look at this method, which is also frequently used to measure carcass characteristics on herd sire candidates at breeding animal sales and which is used to provide much of the information found in sire summaries.

### IMPACTS

- Youth and adults have learned:
  - o What swine percent lean is and how it is determined.
  - o How the measurements of fat thickness, loin muscle area and carcass weight for swine are taken both on a live and carcass basis and using the best practices for ensuring accuracy.
  - o How beef yield and quality grades affect the overall carcass price received from grid based marketing programs.
  - o How the measurements of fat thickness, rib eye area, percent kidney-pelvic-heart fat, carcass weight, yield grade, marbling and quality grade are taken.
- The quality and carcass merit of animals has increased, based on entries from youth who have spent multiple years in the program.
- During 2008, a time period where production costs increased dramatically, some participants actually decreased the cost of gain for their market beef animals (as compared to 2007), because they changed their feeding program based on information learned from the carcass contests.
- Youth and their parents are figuring the costs of retaining ownership of animals or marketing at different times of the animals’ life, depending on how their animals compare to the grid-based standards.

### COLLABORATORS

- Local volunteers and meat processing plants including Kaylor Locker (Kaylor SD) and Bluebird Locker (Delmont, SD)
- Western Junior Livestock Show
- Midwest Sonatech

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators John Keimig(1), Jim Krantz, Jon Kieckhefer. South Dakota State University Extension Specialists: Julie Walker, Cody Wright.

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## ADAPTING TO LIMITED PASTURE: DRYLOT OPPORTUNITIES

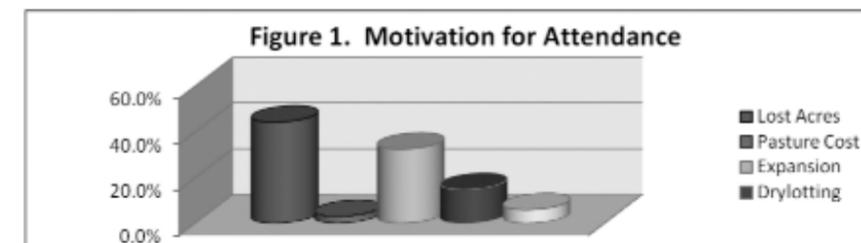
### IMPACTING SOUTH DAKOTA CATTLE PRODUCERS

This nationally recognized program provided 281 producers with the skills to utilize drylotting as a viable option to maintaining long-term cow herd sustainability. 41% of year one participants reported greater than a \$2500 increase in profitability, while 60% of year 2 producers reported greater than \$1000 increase, based on information obtained from the South Dakota Cooperative Extension Service.

### ISSUE

A growing community of interest was concerned with cost pressure on grazing cattle, and was interested in an alternative available management system.

- Cost pressure is the result of increased pasture rental rates, conversion of grazed lands to tillable, and a decreased carrying capacity due to drought.



- Drylotting is the feeding of cow/calf pairs in a feedlot environment during part or all of traditional grazing periods (summer).

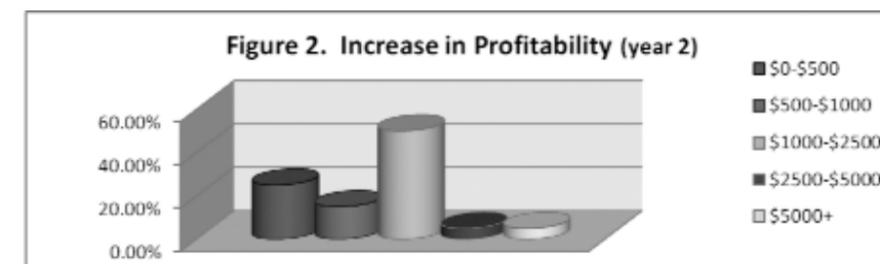
### WHAT WAS DONE

To meet the needs of this community of interest, educators and specialists teamed up to disseminate the information necessary for successfully drylotting beef cows.

- 13 meetings addressing 281 (Year 1, n=146; Year 2, n=135) producers from 5 states were held throughout eastern South Dakota targeted the following issues:
  - o Cost Analysis – nutrient cost, feeding costs, and pasture lease expenses
  - o Health Concerns and Disease Management in the Drylot
  - o Drylot Pen Requirements and Environmental Management
  - o Long-Term Effect of Drylotting
- Information requests were filled for producers from South Dakota, Iowa, Nebraska, Minnesota, North Dakota, and Ohio.
- Defining the audience:
  - o 79% and 73%, of year 1 and 2 producers respectively rented pasture.
  - o They paid an average lease rate of \$28.65/acre (±7.06) in year 1 and \$36.41/acre (±\$9.40) in year 2, indicating a sizeable increase in cost.

### IMPACTS

- Short term impact
  - o 281 beef cattle producers have decision making tools regarding drylotting.
- Medium term impacts
  - o 76.0% of year 1 responses indicate application of information.
  - o 85.1% of year 2 responses indicate application of information.
- Long term impact



- o 41% of year 1 participants reported greater than \$2500 increase in profit.
- o 60% of year 2 participants increased by greater than \$1000 (figure 2).

## COLLABORATORS

Dr. Vern Anderson, NDSU Carrington Research Extension Center; Carrington, ND

## CONTACTS

South Dakota Cooperative Extension Staff involved: Extension Educators: Lanette Butler(1), John Keimig(2), Jeff Lounsbery(3), Tyler Melroe, Kevin Vaith, Jim Krantz, Rod Geppert, Gary Erickson, David Vander Vliet, Chuck Langner, Mark Rosenberg, Rebecca Schafer, Ann Price, Duaine Marxen, and Ken Wonnenberg. South Dakota State University Extension Specialists: Dr. Russ Daly, Dr. Cody Wright.

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## SOILS AND FERTILITY MANAGEMENT FOR MAXIMUM PROFITABILITY

### FERTILIZER COST SAVINGS REALIZED BY PRODUCERS

Crop producers are realizing significant input cost savings by setting realistic yield goals, conducting soil tests, and following recommendations to fertilize to meet plant needs. South Dakota Cooperative Extension Service educators have helped producers determine how much they can reduce fertilizer applications without reducing yields, often resulting in saving of five to six dollars per acre.

### ISSUE

Soil and nutrient management has become one of the major factors affecting profitability in crop production. Fertilizer costs have nearly tripled over the past two years, causing producers to become more aware of nutrient management options including soil testing, residue management, crop yield goals, crop rotations, alternative fertility products, and fertilizer application timing.

### WHAT WAS DONE

South Dakota Extension Educators and South Dakota State University Specialists conducted a variety of educational programs to address soil and nutrient management issues, including:

- Local crop production meetings, clinics, and workshops reached over 1215 producers with information on managing high fertilizer costs, no-till crop production, crop and fertility management following Conservation Reserve Program (CRP), and carbon management.
- Extension Educators assisted over 1160 producers through individual consultations on fertilizer recommendations, soil and tissue sampling practices, nutrient deficiency issues, calculating proper nutrient application rates, setting yield goals, residue value, fertility management under adverse weather conditions, leaching issues, and crop rotations.
- Numerous crop producers and ranchers were reached through media contacts including 32 radio programs and 64 newspaper articles and newsletters.
- Three test plots addressing soil nutrient management issues and cover crops were conducted by Extension educators and specialists.

### IMPACTS

- Producers increased awareness of management options and strategies to deal with high fertilizer costs. Examples include:
  - o More producers set realistic yield goals, conducted soil tests to determine actual fertility needs, and followed fertilizer recommendations to meet plant needs. Micro-nutrient needs were being determined through soil tests and plant tissue tests.
  - o By resampling a field for a local corn producer and using SDSU Soils Lab recommendations, an Educator helped the producer increase his corn yield to a level which resulted in over \$60,000 profit increase.
  - o In many cases, educators helped producers realize a 10 pound reduction in application rate, which saved \$5-6 per acre and resulted in a total savings of over \$50,000 for many producers.
  - o More fall fertilizer applications were made to take advantage of lower fertilizer costs. Fall application and pre-payment for fertilizer also reduces the risk of high costs and limited fertilizer availability at planting time.
  - o Similarly, because of greater awareness of soil and nutrient interactions - when soil conditions are likely to lead to losses of nitrogen through volatilization, producers are applying their nitrogen in spring just ahead of or at planting time.
- Producers became aware of the way to determine the value of crop residues. With high prices of commercial fertilizers the true value of the crop residue in the fields became more evident. In the past producers sold residue with little emphasis on recovery of the value of nutrients in that residue. Now they are pricing residue more on the value of the nutrients that are being removed with the residue. Working with Extension Educators, numerous producers have used the “crop residue calculator” and cumulatively put a “fertility” value of over \$200,000 on their residue.
- More producers are utilizing manure as a source of nutrients. When producers know they have high levels of Phosphorus (P) and Potassium (K) on their own soils, they are looking at selling the manure and buying back Nitrogen (N).
- To avoid adverse crop and environmental effects, Educators assisted a local cheese plant with soil sampling to determine amount of whey that could be safely applied.

## COLLABORATORS

Crop Improvement Associations, Local Coops and Elevators, Natural Resources Conservation Service (NRCS), South Dakota No-Till Association, Resource Conservation and Development Council (RC&D), Mitchell Tec, Farmers Union, Farm Bureau, and Dakota Radio Group.

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Steve Sutera (1), Roger Barrick, Mike Huber, David Vander Vliet, Connie Strunk, Irene Graves, Bob Fanning, Justin Keyser, Craig Rosenberg, Ruth Beck, Chuck Langner, Gary Erickson, Terry Hall, and Theresa Fritz. South Dakota State University Specialists, staff and researchers involved: Ron Gelderman, Greg Carlson, Duane Beck, and Anthony Bly.

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## PRECISION AGRICULTURE – TRANSFORMING THE WAY WE FARM

### PRECISION AGRICULTURE – TRANSFORMING THE WAY WE FARM

Variable rate fertilizer applications, automatic row shutoff on planters, and mapping fields with global positioning system (GPS) technology are just a few of the changes crop producers have implemented after attending the Precision Ag Conference in Aberdeen, hosted by South Dakota Cooperative Extension Service in cooperation with various ag businesses. With nitrogen (N) costs at roughly \$0.82 per pound in 2008, the use of variable rate fertilizer applications alone could significantly reduce the amount of N applied. On a 160 acre field, it is reasonable to expect an average reduction of 20 pounds per acre, which would save a producer over \$2,600 in fertilizer costs.

### ISSUE

Total direct costs for corn crop production in 2009 are estimated to be 2.5 times what they were four years ago. The high costs associated with crop inputs and the relatively tight supplies of those inputs have demanded that producers farm more efficiently. Management emphasis on the direct costs of fertilizer, seed and machinery operating costs can have a large impact on profitability. “Precision agriculture” is a term that applies to many new technologies which allow tighter management of these costs, along with potential for increasing crop yields. Knowledge of the newest technologies and whether they are cost effective for producers to adopt is necessary for producers to remain profitable.

### WHAT WAS DONE

- For the past 10 years South Dakota Cooperative Extension Service has held a Precision Ag Conference in Aberdeen. The conference is a collaborative effort which brings together the latest research from South Dakota State University concerning precision farming, manufacturers of precision ag products, and grain producers with the goal of increasing efficiency and yield potential of area producers’ farms.
- Recent topics taught include:
  - o Nitrogen use efficiency
  - o Variable rate fertilizer application
  - o Variable rate seeding
  - o Auto steer
  - o Field mapping
  - o Greenseeker technology

### IMPACTS

- Surveys returned from producers indicate the following changes that repeat attendees have made, based on information learned at previous conferences.
  - o Approximately 20% of producers are now using “zone management”, which includes:
- Variable rate fertilizer application
- Automatic row shut off on planter
- Field mapping
  - o Approximately 80% are using yield monitors
  - o Other producers are using:
- Variable rate seeding
- Automatic boom shut off on sprayer
- Just one aspect of zone management, the variable rate fertilizer application, can save producers thousands of dollars. On a 160 acre field, it is reasonable to expect an average reduction of 20 pounds N per acre. With nitrogen (N) costs at roughly \$0.82 per pound in 2008, the result is over \$2,600 in fertilizer costs for that field. All the practices adopted will save seed, fertilizer and crop protection products (herbicides, fungicides and insecticides). This reduces operating costs, thereby increasing net profits per acre.
- Based on surveys from the 2008 Conference, practices that producers intended to adopt in 2008 included:
  - o Taking crop tissue samples for analysis
  - o Using automatic row shut off
  - o Begin field mapping
  - o Purchase auto steer
  - o Use Nitrogen Response Curves
  - o Use variable rate applications
  - o Apply zinc in relation to phosphorus

### COLLABORATORS

- Brent Wiesenburger - South Dakota Wheat Growers Cooperative; Jason Warrington – Private industry crop consultant; Katie Oliver – Private industry crop consultant.

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Gary Erickson (1), Mark Rosenberg (2) and Theresa Fritz. South Dakota State University faculty: Dr. Gregg Carlson (3).

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# REDUCING HUMAN HEALTH RISKS FROM PESTICIDES THROUGH PESTICIDE SAFETY EDUCATION

## OVER 75% OF PESTICIDE HANDLERS WEAR CHEMICAL-RESISTANT GLOVES

Over three-fourths of individuals applying pesticides, both as a commercial business and for use on their own ag land/crops, indicated they now wear chemical resistant gloves when handling pesticides. South Dakota Cooperative Extension Service teaches the Pesticide Safety Education Program to approximately 3,000 private applicators and 2,500 commercial applicators each year.

## ISSUE

Applying pesticides correctly allows enhanced agricultural production, while reducing human health risks and ensuring environmental safety. The SD Cooperative Extension Service provides the educational component of pesticide applicator certification that is administered by the SD Department of Agriculture. By law, training and certification must be completed before any commercial or private applicator in South Dakota can apply a pesticide. In addition to safety benefits, the economic impact of applicator certification is large. If we assume 1.5 applications are made on 11.5 million acres of major crops at a custom application rate of \$4.50 per acre, this translates to a value of over \$77 million in applicator costs, either as income to the commercial applicator or as dollars saved by the farmer or rancher who is able to apply the pesticide themselves. Education provided by SD Cooperative Extension Service on reading and understanding pesticide labels, identifying pests, determining economic thresholds of pests, and knowing the human and environmental risks of pesticide use is essential in maintaining the use of these important tools for producers.

## WHAT WAS DONE

- Meetings held in counties, Field Education Units, and at the District level, along with individual contacts in County Extension Offices, reached the following individuals last year:
  - o Private applicator training (PAT) 2135
  - o Private applicator testing \* 1075
  - o Commercial Applicator training(CAT) 2559
  - o Commercial applicator testing\* 742
- Topics covered included Review of pesticide laws and regulations, pesticide label comprehension, farm family exposure study, personal protective equipment, sprayer maintenance, calibration, drift management, ag security, prairie dog management, pest identification and control (weeds, diseases, insect), biological control methods, public health, and container recycling.

\* (Private applicators may take a take-home test or attend training to receive certification/recertification. Commercial applicators must initially test at Extension offices, but can renew certification through training. SDCES administers these tests.)

## IMPACTS

- Based on response from approximately 900 commercial ag-applicators and 140 private applicators:
  - o 81% of private and 77% of commercial applicators are wearing chemical resistant gloves when handling pesticide
  - o Although the percentage wearing gloves prior to training is unknown, this high percentage suggests applicators have learned the benefits of personal protective equipment (PPE) from CAT and PAT have adopted its use.
- Surveys of 300 individuals attending private applicator training reported:
  - o 99% plan to use information gained at the program when working with pesticides
  - o 99% would recommend the program to others
  - o 91% of a subset of this group indicated that they use more PPE than 5-10 years ago
  - o 67% reported that they planned to use additional PPE following the training
- Quotes from producers include:
  - o “This is the kind of information we need to hear”
  - o “Good Educational program. I am glad I came”
  - o “Not using proper personal protective equipment can increase health risks later”
  - o “Thanks for the training it was very good & practical. First time I felt like I learned something I can use”.

## COLLABORATORS

- SD Department of Agriculture, SD Department of Health, SD Game, Fish, and Parks, SD Aviation Association, and SD Agribusiness Association.

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators contributing to this report were Justin Keyser(2), Bob Fanning, TJ Swan, Ruth Beck, Irene Graves, Roger Barrick, Paul O. Johnson, Chuck Langner, Steve Sutera, Craig Rosenberg, Mark Rosenberg, Gary Erickson, Connie Strunk, Theresa Fritz, David VanderVliet, Maurice Lemke, John Keimig, Duane Marxen, Rebecca Shaffer, Lanette Butler, and Cindy Bergman. South Dakota State University Extension Specialists and staff involved: Dr. Jim Wilson(1), Dr. Mike Moechnig, Darrell Deneke, Dr. Mike Catangui, Dr. John Ball, Brad Ruden, Dr. Dennis Todey, Dr. Shane Anderson, and Mike Hildreth.

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## INTEGRATED PEST MANAGEMENT (IPM) PROVIDES OPTIONS TO LANDOWNERS

### BIOLOGICAL CONTROL OF LEAFY SPURGE OPTION PROVIDED THROUGH IPM

Over 350,000 acres are infested with leafy spurge in South Dakota. Many landowners experience difficulty controlling this invasive weed in pasture, range, and non-crop acres with the traditional herbicide treatments. Based on information provided by South Dakota Cooperative Extension Service, many landowners have implemented biological control as an economical and environmentally sound control option.

### ISSUE

Leafy spurge is a tough perennial weed of pasture, range, and non-crop areas of the state. Herbicide treatments are not always the answer, as the treatments must be timely to show results, several of the treatments that have the best results are very expensive and many raise environmental concerns. The introduction of leafy spurge flea beetles in the mid-1980s provided landowners with a viable, safe control option dealing with this invasive weed. South Dakota Cooperative Extension Service provides information to landowners about using an integrated approach to manage leafy spurge and Canada thistle, using herbicides with biocontrol, cultural, and mechanical options.

### WHAT WAS DONE

South Dakota Extension educators and South Dakota State University specialists conducted a variety of educational programming and publications in 2008, including:

- Three publications were developed and widely distributed by Extension and the Department of Agriculture personnel at state and county collections, Dakota Fest and State Fair.
  - o ExEx 8161, Managing Leafy Spurge Flea Beetle Releases in South Dakota
  - o ExEx 8162, Leafy Spurge Flea Beetle Collection Recommendations
  - o FS 525N, Noxious Weed Control
- A biological control module was presented at Private Applicator Trainings across the state.
- A cooperative pilot project in 15 northeastern counties provided landowners with sweep nets, management information, and publicity examples to encourage county collection and release efforts. Collaborators included county weed and pest boards, SD Department of Agriculture, South Dakota Game, Fish, and Parks, US Fish and Wildlife Service, and the Nature Conservancy.
- Local tours and field days reached at least 55 landowners in various parts of the state including Cottonwood, Fort Pierre, Onida and Woonsocket .
- Extension Educators responded to at least 180 requests for information and over 60 one-on-one visits with landowners who managed over 40,000 acres.
- Three statewide collection days resulted in over 30 new flea beetle release sites.
- Biocontrol options were the topic of at least 15 newspaper articles and 11 radio reports.
- Several 4-H clubs were active in the biocontrol collection and release programs.

### IMPACTS

- The number of acres invested with leafy spurge and Canada thistle has been reduced through use of biocontrols. Furthermore, biocontrol options have resulted in fewer acres which receive continual herbicide spraying, with the end result being a reduced amount of herbicide applied to the land. Evidence of this is provided from multi-year projects such as:
  - o Ten year project: An Edmunds County resident using leafy spurge beetles has had significant leafy spurge reduction in shelterbelt and quarter of land.
  - o Five year project: Sanborn County has released over 80 (70 in last 2 years) leafy spurge flea beetle colonies. One site is producing colonies for release.
  - o Three year project: In 2008, 9 counties in the Northeast South Dakota Joint Leafy Spurge Flea Beetle Project had their own collections and produced an average of 8 new release sites per county.
  - o Three year project: The Sully County Weed and Pest Board has been using stem gall fly for Canada thistle to successfully control on 1,000 acres at Cottonwood Lake.
- More landowners are looking for long-term management options that can be used in place of or in combination with chemicals, as evidenced by:
  - o An increase in people participating in the flea beetle collection days.
  - o An increase in people obtaining information on collecting flea beetles on their own.
  - o 248 attending private applicator trainings in central SD reported biocontrol options were an important portion of the program.

### COLLABORATORS

South Dakota Department of Agriculture, County Weed and Pest Boards, US Fish and Wildlife, South Dakota Department of Game, Fish, and Parks, The Nature Conservancy, and USDA APHIS.

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Irene Graves(1), Steve Sutera, Roger Barrick, Mike Huber, David VanderVliet, Connie Strunk, Bob Fanning, Justin Keyser, Craig Rosenberg, Ruth Beck, Chuck Langner, Gary Erickson, and Theresa Fritz. South Dakota State University staff: Darrell L. Deneke(2).

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## INCREASING PROFITABILITY OF SUNFLOWER PRODUCTION

### IMPROVING SUNFLOWER PRODUCTION THROUGH HYBRID SELECTION AND CROP MANAGEMENT

Improved varieties and production practices increase crop profitability. Observations indicate that most sunflower producers are using publications and information provided by South Dakota State University and the South Dakota Cooperative Extension Service. Sunflowers were planted on 415,000 acres in SD in 2007. At the marketing year average price of \$21.20/cwt, a 100 lbs/acre increase in yield due to selecting better hybrids or improved management practices would increase the value of SD sunflower production by \$8.8 million.

### ISSUE

The key to successful sunflower production is the selection of the best possible hybrids for a producer's region, combined with environmentally and economically sound production practices that maximize yields and/or reduce unnecessary inputs. The benefits include increased profitability for the producer and a greater supply of both oilseed and confectionary sunflower to better feed the US and the world.

### WHAT WAS DONE

- Over 100 producers, farming approximately 13,500 acres, attended meetings in which South Dakota Cooperative Extension Service educators and specialists provided information on hybrid selection and best management practices.
- 32 producers viewed differences in performance of various hybrids at the Walworth County Field Day
- Research trials were conducted to evaluate hybrid performance and planting dates. Implementing knowledge gained from the research trials has the potential to affect 400,000 acres that are typically planted to sunflowers in South Dakota.
  - o Six hybrid performance trials - five on oilseed hybrids and 1 on confectionary hybrids
  - o Five on-farm planting date trials
- Monitoring for sunflower moths was done by Extension educators at Onida, Brookings, Mound City, Ipswich, Bison, Burke, and Kennebec, SD.
- A yield and pest survey of 30 sunflower fields in 13 counties was conducted by extension educators and specialists.

### IMPACTS

- Hybrid performance trials provide unbiased performance information of sunflower hybrids from many different seed companies over a range of environments.
  - o A yield trial booklet was distributed to sunflower producers in all sunflower-producing counties in South Dakota, and is available at <http://agbiopubs.sdstate.edu/articles/EC909-07.pdf>. Oilseed and confection sunflower yields, along with maturity, height, stalk strength, and disease and insect resistance are found in the publication.
  - o Most sunflower producers consult this publication before making their hybrid selections (based on contacts with producers and observation).
- An on-farm research study is investigating the effects of planting later than the current final crop insurance planting dates of June 10 (northern and western SD) or June 15 (other areas of state).
  - o Outcomes of this study will allow sunflower producers to make informed decisions regarding how late they can safely plant their sunflower crop without sacrificing profit potential and regarding whether or not to replant sunflower following crop failure due to hail, freeze, insects, or poor stand establishment.
- A sunflower production meeting taught producers how to identify and control major sunflower pests, along with economic threshold levels (the infestation level below which the cost of treatment exceeds the losses caused by the pest) for some pests, including the pale striped flea beetle. All producers attending indicated they would be watching for this potentially damaging pest.
- The incidence and damage from red sunflower seed weevils have been increasing in South Dakota, based on recent sunflower yield and pest surveys. Extension educators have helped producers identify sunflower seed weevils and recommended proper treatment times. As a result of the information provided by one educator, three producers in his county treated 400 acres of sunflower with economic threshold levels of seed weevils.
- Improved varieties and production practices increase crop profitability. Sunflowers were planted on 415,000 acres in SD in 2007. At the marketing year average price of \$21.20/cwt, a 100 lbs/acre increase in yield due to selecting better hybrids or improved management practices would increase the value of SD sunflower production by \$8.8 million.

### COLLABORATORS

- National Sunflower Association
- South Dakota Oilseeds Council
- North Dakota State University
- USDA-ARS Sunflower Research Unit

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Terry Hall(1), Mark Rosenberg, Ruth Beck, David VanderVliet, Robert Fanning, Theresa Fritz, Roger Barrick, Justin Keyser, Robert Drown, Sandy Huber. South Dakota State University Specialist involved: Dr. Kathleen Grady(2).

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# HELPING CROP PRODUCERS COPE WITH DAMAGING WEATHER AND ENVIRONMENTAL ISSUES

## RESPONSES TO DAMAGING WEATHER AFFECT PROFITABILITY

After hail and wind destroyed crops across much of the state this summer, producers followed recommended late planting dates, planted different types of earlier maturing crops and used cover crops after receiving recommendations from South Dakota Cooperative Extension Service educators and specialists. In doing so, producers were able to reduce operating costs, produce forages for feed and improve expected returns.

## ISSUE

Annually, crop producers in South Dakota usually experience some kind of environmental or weather related issues during the cropping season. The 2008 season was no exception, with spring issues of delayed planting due to cold, wet weather and replanting because of poor crop emergence. In the early summer, decisions on whether to replant or leave the crop as is, following frost, hail, or wind damage were common. In the fall an early season frost prevents the crop from maturing and raises additional questions. In many of these issues, the grower must decide if it is more profitable to replant following some kind of damage or if it is profitable to harvest the crop for grain or for forage if the crop doesn't reach maturity. When a careful analysis of the situation is not done, growers often replant, when the best, or most economical, option is to leave the crop alone. South Dakota Cooperative Extension Service Educators provide the analysis needed and are key sources of information in making these management decisions.

## WHAT WAS DONE

Because of the nature of these concerns, Extension provides information in two primary ways. One way is to reach a broad audience with common concerns and general recommendations, while the second way is to provide individual consultations and recommendations to producers. Examples of how this was achieved include:

- One-on-one visits with over 240 producers who farmed approximately 60,000 acres on topics such as:
  - o Late planting options to fit insured and non-insured crops
  - o Planting options after hail and flooding
  - o Planting options to provide grazing or hay
  - o Winter kill on winter wheat
  - o Herbicide rotation restrictions
- Numerous news columns/news releases and radio programs focusing on winter kill assessment, chopping early stage hail damaged corn and awareness of hay moisture

## IMPACTS

After consulting with Extension educators, examples of how producers altered their planting and/or replanting intentions included:

- o Planted earlier maturing crops
- Sunflowers, hay millets, forage sorghums, cover crops were planted
- Some stayed with early maturing corn, while some chose soybeans
  - o Planted annual forages for grazing or hay
- Replanted to millets for grazing and hay to make up for the loss of corn silage, alfalfa and pasture due to large hail storms
- Yield estimates for some of these producers are an average of 2 tons of forage/acre, which they will use for feed
  - o Left crop as was (when intentions had been to replant), because of the lateness of time or herbicide carryover restrictions

Examples of what producers have indicated they learned or will do differently:

- o Became more aware of herbicide restrictions, and that different herbicides reduce their options after a disaster
- In one county, eight producers planned to plant millet on the corn ground that was destroyed by hail, but after consultation with an educator, they realized that because of pre-emergence corn herbicide put on, it would have killed the millet, so the seeding expense was saved.
  - o More aware of recommended late planting dates, the different types of earlier maturing crops and varieties and using cover crops instead of letting the land remain idle
  - o To not be too quick to dig up winter wheat (due to winter kill) as it can compensate and it sometimes looks worse than what the yield will be
- Three producers had some winter kill in winter wheat and wanted to tear it up, but after recommendations by Extension Educators, decided to leave it. Producers had yields of 43, 73, and 67 bushels per acre.

## COLLABORATORS

- Insurance agencies, Farm Service Agency, local coops and consultants.

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Chuck Langner(1), Steve Sutera, Dave Vander Vliet, Kim McGraw, Roger Barrick, Terry Hall, Maurice Lemke, Ruth Beck, Craig Rosenberg. South Dakota State University Extension Specialists: Dr. Bob Hall(2), Dr. Mike Moechnig.

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## WEED MANAGEMENT IS BENEFICIAL TO FARMS, RANCHES AND THE ENVIRONMENT

### WEED MANAGEMENT IMPROVES PRODUCTIVITY

South Dakota's economy is dependent on agriculture and revenue from outdoor recreation. Weed problems can affect South Dakota's economy by reducing farm productivity and replacing wildlife habitat. A recent example of where landowners have used recommendations from South Dakota Cooperative Extension Service is on land converted from the Conservation Reserve Program (CRP) to crop production, where there was potential for severe weed problems.

### ISSUE

Weeds compete with crops for water, light and nutrients. Weed problems in various crops can change rapidly from year to year and from field to field. Herbicides choices and costs can also change rapidly. These rapidly changing conditions can make decisions about weed management complex for producers. Through education, research and demonstrations the South Dakota Cooperative Extension Service and South Dakota State University can help farm producers and landowners make good, environmentally sound and economically beneficial weed management decisions. Better weed management can increase farm profits and benefit South Dakota's economy and environment.

### WHAT WAS DONE

A variety of educational programming was done by South Dakota Cooperative Extension Service Extension Educators and South Dakota State University Specialists and faculty to address weed management issues, including:

- Eight-hundred and ninety (890) producers attended 34 meetings across the state. Cumulatively these producers manage nearly 825,000 acres.
- Nearly 350 producers, who farm/ranch over 200,000 acres, were individually assisted by Extension educators through office and farm visits.
- Crop tours and field days reached 65 producers, with an average farm size of 1075 acres.
- Numerous crop producers and ranchers read or heard 40 different news releases and radio reports.
- Seven different test plots addressing weed control and management were conducted by extension educators and specialists in various parts of the state.
- Annually, SDSU faculty in the extension weeds "group" write and distribute seven publications on weed control in crops, pasture, lawns and other situations. These are widely distributed across the state and provide accurate information to a large percentage of producers and landowners about current pesticide registrations and herbicide effectiveness for common and noxious weed problems.
- An interactive web site which allows producers to access the results of research performed in the state in recent years has been developed. Producers use this site to access specific weed problems in specific crops. This website also has a photograph library of common South Dakota noxious and lawn weeds, and their growth habit and best control options.

### IMPACTS

- Producers learned to identify new noxious weeds (yellow toadflax and Salt Cedar) and about best management techniques, including new herbicides. 54% of private pesticide applicators attending training stated that learning to identify noxious weeds and how to manage them was the most useful part of training.
- Producers became aware of biocontrol of leafy spurge. One educator reported 7 producers implemented bio-control by placing leafy spurge flea beetles on approximately 2000 acres of pasture. Biocontrol is an economical and environmentally friendly method of weed control.
- Production and acreage expansion of "special or alternative crops" would be impossible without the research and education of the SDSU Cooperative Extension personnel to solve the weed issues that accompany "new" crops.
- Producers realized that they needed to use pesticides that had different chemistries or modes of action to avoid development of specific pesticide resistant weeds. Producers are trying to use other herbicides besides glyphosate (active ingredient in Roundup) in order to avoid increasing the number of weeds that are "glyphosate resistant".
- On land converted from CRP to crop production, numerous producers implemented weed control options recommended by Extension educators and specialists.
- Comments are numerous and always favorable in reference to the SDSU weeds extension group, including a SD Department of Ag program administrator who commented "the SDSU weed specialist and the SDSU IPM specialist go above and beyond in their efforts to provide accurate up-to date education on weed management to the residents of South Dakota".

### COLLABORATORS

Local South Dakota weed and pest boards, SD Department of Agriculture, SD Department of Game, Fish and Parks, Private Industry including BASF, North Central Farmers Elevators, ND-SD Ducks Unlimited, Pulse USA, Dakota Mill and Grain, Midwest Coops

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators: Ruth Beck(1), Terry Hall, Steve Sutura, Theresa Fritz, Roger Barrick, Craig Rosenberg, Dave VanderVleit, Ann Price, Ken Wonnensburg, Connie Strunk, Mike Huber, Bob Fanning, and T.J. Swan. South Dakota State University Extension Specialists and staff involved: Dr. Mike Moechnig(2), Darrell Deneke, Dr. Roger Gates, Dr. Jim Wilson.

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## SOUTH DAKOTA YOUTH LEARN PLANT SCIENCE

### EDUCATING YOUTH ON THE IMPORTANCE OF AGRICULTURE

Where food comes from and how agriculture is all around them are two of the key messages that youth across the state have learned, in part due to the efforts of South Dakota Cooperative Extension Service Extension educators. Combine this with activities to learn what crops are grown in South Dakota, what plants can be used for food for humans and livestock, and plant identification, and many youth now have a better understanding of the importance of agriculture, crop production and range and pasture management to their own lives and to South Dakota's economy.

### ISSUE

93% of South Dakota's youth grow up in urban centers and non-working farms or ranches. Agricultural producers are a primary source of revenue for South Dakota. It is important, therefore, to educate youth about the value of agriculture; where their food comes from and the interconnectedness of agriculture, South Dakota and their lives. Through educational outreach, the South Dakota Cooperative Extension Service strives to provide hands-on opportunities for rural and urban children across South Dakota to learn about agriculture and its value to them individually, and to the state.

### WHAT WAS DONE

During 2007-2008, nearly 2,500 youth learned about agriculture in their lives and the agricultural industry in South Dakota through Extension sponsored activities such as:

- SD Rangeland Days.
- Kids on the Prairie
- Youth Ag Days
- Range plant and seed identification workshops
- National Ag Day celebrations
- Classroom visits
- Organized preschool and elementary programs

### IMPACTS

- Areas in which youth ages 8 to 18 increased their knowledge include:
  - o Crops grown in South Dakota
  - o Parts of the plants
  - o What plants can be used for food for humans and what portions are eaten
  - o What plants can be used for livestock feed and why there are differences between what people can eat and what livestock can eat
  - o How to grow plants from seeds and how plants grow and develop
  - o Plant identification, including range and pasture plants
  - o How agriculture is all around them
  - o Where their food comes from
  - o How to collect, mount and display plants for 4-H projects and other activities
- High School youth increased their awareness of Agricultural Pesticides Safety and became certified to apply them safely on their own farming operations.
- In addition to learning these things, youth have:
  - o Exhibited range plant collections at local 4-H Achievement Days and State Fair
- In four counties there were 29 range plant collection exhibits in 2008 as compared to 0 of these types of exhibits in the counties in 2007.
  - o Utilized the seed samples in take home packets (240 youth)
  - o Already started planning 2009 4-H projects because of participating in the "Kids on the Prairie" workshop
  - o Shared knowledge learned with other family members
- A parent reported his 8-year-old daughter correctly identified to other family members the "obnoxious" plants by the family's home.
- Comments from youth and parents at the events:
  - o "I had the best time and learned a lot about Ag."
  - o "I learned a lot about farming even though we didn't go to one."
  - o "I didn't realize there are so many different kinds of plants until I started trying to collect and ID them."
  - o "I feel like a scientist."
  - o "As parents, it is important that we attend events like this so our city-raised kids have an understanding about where their food comes from."

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Roger Barrick, Steve Sutura, Irene Graves, Helen Geppert, Alice Nickelson, Julie McCord, Chuck Langner, Lanette Butler, Craig Rosenberg, Steve Munk, David Vander Vliet, Ruth Beck, Terry Hall, Ann Price, Michelle Brandenburg, Chris Zdorovtsov. South Dakota State University Extension Specialist: Roger Gates.

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## UTILIZING CROP ROTATIONS, COVER CROPS & DOUBLE CROPPING AS MANAGEMENT TOOLS

### USE OF COVER CROPS INCREASING AS PRODUCERS UNDERSTAND BENEFITS

The utilization of environmentally and economically sound methods to manage cropping systems is important to the future of sustainable agriculture. Crop rotations, cover crops and double cropping are all tools producers are using more and more often, based on recommendations and research from the South Dakota Cooperative Extension Service. Use of these tools can help producers manage crop pests, develop better soil structure and prepare fields for spring seeding.

### ISSUE

High input costs are forcing producers to look at other options to manage diseases, weeds, insects and other crop pests. Crop rotations have long been an important tool for managing these issues. Cover crops and double cropping are two more tools producers now have available to work into their cropping rotations. The benefits that cover crops bring in regard to preparing a better seedbed, feeding soil microbes, developing better soil structure, controlling weeds, cycling soil nutrients, etc.; are still being studied and new information is available for producers every day. Producers are seeking more information on the use of cover crops and double cropping as part of their crop rotation.

### WHAT WAS DONE

Throughout the year, South Dakota Cooperative Extension Service educators and South Dakota State University faculty were involved in many education and research activities, including:

- 12 Crops Clinics/Workshops, which were attended by approximately 760 producers who manage over 418,000 acres.
- Over 100 producers were assisted through office or farm visits, specific to cover crops.
- 267 Producers who manage over 165,000 acres took part in five tours/field days held at Dakota Lakes Research Center, Pierre; the No-Till Rotation Study, Wall and on-farm research trials conducted by Extension Educators and Cooperators in Central District.
- Several research trials were conducted, including double cropping trials near Trail City & Tripp, a cover crop weed control trial at Highmore Research Station, the Danny Forgey Sustainable Agriculture Research and Extension (SARE) Cover Crop Grant near Onida, and ongoing research at Dakota Lakes Research Center, Pierre, and the No-Till Crop Rotation Study near Wall.

Topics covered at clinics, workshops, tours and field days included:

- Cover crop selection, seeding recommendations, and use in no-till systems.
- Use of crop rotations to improve soil fertility, disease and insect management.
- Use of cover crops to aid in using excess spring moisture, breaking up hard pans, improving soil tilth, making better use of soil nutrients, and controlling weeds.
- Benefits of cover crops for livestock producers.
- Annual forage alternatives and utilizing annual forages in crop rotations.

### IMPACTS

Producers are more aware of the benefits of cover crops, for both crop production and livestock feed use, and are starting to plant more of these crops. Changes producers are making include:

- Planting cover crops into wheat stubble to use excess moisture and to improve planting conditions for spring planting.
- Producers are moving away from wheat-on-wheat and corn-on-corn rotations to utilizing more broadleaf crops in their rotations.
- Producer quote: “I planted turnips in my wheat stubble that helped me provide late season grazing for my cows and assisted with water issues (too much) at spring planting. This year my best corn is on the fields that were planted to winter wheat and then double cropped with turnips last fall.”
- Winter wheat acres are increasing in southeast South Dakota as producers look at it along with millet, oats, and spring wheat as alternatives to traditional corn, soybean and alfalfa.
- Producers have realized that it does not take a lot of moisture to grow a cover crop and the benefits outweigh the risks.
- As prices for crop protection products continue to rise, more producers are looking to crop rotations as a management option for insect, weed and disease control.
- Producers better understand how forage crops can work in rotation with cash crops.
- Specific examples in which Extension educators were involved include:
  - o 11 producers in north central SD tried cover crops for the first time this year.
  - o 930 acres of cover crops were planted in Sully, Potter and surrounding counties.
  - o 14 producers planted cover crops after wheat harvest on 2,000 acres.
  - o 8 producers are planning to graze cover crops this fall.

### COLLABORATORS

- South Dakota No-Till Association & South Dakota Pulse Growers, Inc.
- Producer Cooperators (Danny Forgey, Rick & Ben Bieber & Glenn DeWald)
- NRCS (Conservation Districts, Jim Millar & Jason Miller)
- Local Crop Improvement Associations

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Mike Huber(1), Steve Sutera, Roger Barrick, Connie Strunk, Terry Hall, Ruth Beck, Justin Keyser, David Vander Vliet, Irene Graves, Craig Rosenberg, Bob Fanning, Ken Wonnemberg & Clint Clark. South Dakota State University Specialists & Researchers involved: Vance Owens, Chris Lee, Thandi Nleya(2), John Rickertsen(2), Dwayne Beck, Dakota Lakes Research Center, and Mike Moechnig.

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## USING CROP VARIETY AND HYBRID SELECTION TO IMPROVE YIELDS

### SELECTION OF RECOMMENDED VARIETIES IMPROVES CROP YIELD AND RETURNS

Between 2005 and 2008, South Dakota producers increased their use of recommended varieties of spring wheat by over 35% (2008 South Dakota Wheat Varieties, National Agricultural Statistics Service). By using a recommended variety, producers realize an average increase of 5.8 bushel per acre (SDSU EC 774 “2008 Variety Recommendations Small Grains and Field Peas”). Using a price of \$7.25 per bushel for spring wheat, South Dakota producers gained approximately \$42 per acre by using a recommended variety instead of another variety.

### ISSUE

Annually, crop producers select crop varieties or hybrids for their farm. Unless they are purchasing unique seed, variety or hybrid selection is a management input that generally does not cost producers additional money. It does, however, require time to evaluate crop performance trials in order to select superior varieties or hybrids. South Dakota Cooperative Extension Service educators serve a key role in helping growers interpret crop performance results from South Dakota State University trials, which are available in printed reports from local extension offices or on the internet.

### WHAT WAS DONE

To help producers become aware of proper variety and hybrid selection techniques, as well as providing information on the recommended varieties for the geographic area, local Extension Educators were involved with the following educational programming:

- 26 group meetings which reached approximately 700 producers, where they learned about variety characteristics, variety performance, and plot results from local plots.
- Numerous producers were reached through the media, including 29 newspaper articles and/or radio programs.
- 23 test and demo plots, comparing 10 different crops for yield and quality were conducted by Extension Educators in various locations across the state.

### IMPACTS

An example of how local producers use the information they receive is the changing of spring and winter wheat varieties to match recommendations.

- In 2005, producers planted 32.8% of their spring wheat acres with one of the current recommended varieties. In 2008, the current recommended varieties comprised 70.5% of the spring wheat acres in South Dakota, an increase of over 35% of acres planted to recommended varieties (2008 South Dakota Wheat Varieties, National Agricultural Statistics Service).
- For winter wheat the current recommended varieties comprised 58.7% of the acres in 2008 compared to 39% of the acres in 2005 (2008 South Dakota Wheat Varieties, National Agricultural Statistics Service).
- By choosing the recommended varieties South Dakota producers have seen a yield advantage compared to other varieties.
  - o The difference in the 3 year average for spring wheat is 5.8 bushel per acre increase when using a recommended variety compared to another variety (SDSU EC 774 “2008 Variety Recommendations Small Grains and Field Peas”).
  - o The difference in the 3 year average for winter wheat is 3.5 bushels per acre increase when using a recommended variety compared to another variety (SDSU EC 774 “2008 Variety Recommendations Small Grains and Field Peas”).
  - o Using a price of \$7.25 per bushel for spring wheat and \$6.75 for winter wheat, South Dakota producers gained \$75.3 million by using a recommended variety instead of another variety.

### COLLABORATORS

Local Crop Improvement Associations, Local Producer Cooperators, North Dakota State University, North Central Farmers Elevator, BASF, Ducks Unlimited, Pulse USA, Lake Area Technical Institute

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators David VanderVliet(1), Mike Huber, Gary Erickson, Theresa Fritz, Terry Hall, Ken Wonnemberg, Clint Clark, Maurice Lemke, Karen Slunicka, Ruth Beck, Steve Sutura, Roger Barrick, Chuck Langner, and Kim McGraw. South Dakota State University Extension Specialists and Researchers Dr. Bob Hall(2), John Rickertsen, Dr. Thandiwe Nleya, Brad Ruden, and Dr. Larry Osborne.

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## INCREASING PRODUCTION AND PROFITABILITY THROUGH PLANT DISEASE MANAGEMENT

### LOW-COST INPUTS MAKE A BIG DIFFERENCE

With the dramatic increases in commodity prices and rising input costs in the past year, plant disease management has become a higher priority for many producers. South Dakota Cooperative Extension Service highlighted several no-cost or low-cost plant disease management decisions which can result in tremendous returns to the producer. Smart variety selection, certified seed, and fungicide seed treatments were presented as sound ways to prevent early-season diseases, raise yield potential, and increase crop response to in-season management (fertilizers, fungicides, etc.). In one case, 50% yield increase was observed in seed-treated wheat fields. Education efforts on fungicide efficacy and timing further impacted SD producers. Growers were able to adjust or eliminate unnecessary fungicide applications, saving at least one to two million dollars, or up to \$30 per acre.

### ISSUE

Economically sound plant disease management has become essential to maintain profit margins and optimize production systems in agriculture today. Retailers have reacted to the shift in priorities and have placed more emphasis on fungicide sales, even when chemical management is not the cost-effective course of action. There is an increasing need for education/outreach due to the pressure producers are facing to add inputs, such as fungicides, even in the absence of disease risk, simply in response to the high crop prices. Favorable cool, wet weather conditions did increase the risk for some diseases in 2008, and this increased the need for outreach efforts to optimize timing and product recommendations. A typical response to increased sales pressure and perceived disease risk is often to apply fungicides during the growing-season. However, much risk of plant disease can be avoided or reduced through pre-plant decision making. Producers were in need of educational opportunities to learn how best to mitigate or reduce disease risk and what treatments are recommended. For example, seed treatments are encouraged to help establish a strong root system, especially during cool, wet spring-time conditions such as in 2008. Producers also identified a need to properly identify major diseases.

### WHAT WAS DONE

From March to September, 2008, South Dakota Cooperative Extension Service educators and South Dakota State University faculty and Extension specialists were involved in the following:

- 10 Crops Clinics and/or crops tours with over 300 producers attending.
- 17 Plant Disease/Scouting Clinics with over 200 producers attending who cumulatively farmed at least 15,000 acres.
- Monitored 16 sentinel plots statewide for Asian soybean rust and soybean aphid.
- Participated in Sunflower Survey.
- Monitored spread of disease in an on-farm research project in soybeans.
- Participated in Farm & Home Show, DakotaFest, and SD State Fair.
- Provided information in news columns & radio spots
- Worked one-on-one with producers

### IMPACTS

The following are statements and observations gathered directly from stakeholder input:

- Growth stage information allowed for more accurate fungicide timing.
- Proper disease identification aided in management decisions on wheat and soybeans, pre-empting unnecessary input in many cases.
- Small grain fungicide options and timing were optimized to match risks.
- Improved variety choices, especially in winter wheat, will lead to reduced input costs for fungicides and increased yields and production levels.
- Seed treatments will be utilized to help crops establish strong roots systems.
- 50% yield increase was observed in seed treated wheat fields.
- 1,500 acres were not sprayed with a fungicide for scab control due to information provided by the SDSU Scab Risk Advisory, resulting in a \$30,000 savings.
- One educator estimated 70% of winter wheat acres in the county were treated once with fungicide, 20% were treated a second time for scab.

### COLLABORATORS

Campbell, Charles Mix, Day, & Walworth Crop Improvement Associations, Mark Foland, Ed Heeb, John Horter, Lake Area Technical Institute no-till demonstration farm, North & South Dakota Ducks Unlimited, and Roger Rix, Doug Ablen, SD Crop Improvement Association.

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Connie Strunk(1), Dr. Larry Osborne(2), Extension Educators Roger Barrick, Ruth Beck, Gary Erickson, Bob Fanning, Theresa Fritz, Terry Hall, Adele Harty, Mike Huber, Justin Keyser, Chuck Langner, Craig Rosenberg, Mark Rosenberg, Connie Strunk, Steve Sutura, and David VanderVliet. South Dakota State University faculty, Extension Specialists and staff: Darrell Deneke, Dr. Bob Hall, Dr. Mike Moechnig, Dr. Larry Osborne, John Rickertsen, Brad Ruden, and Karl Glover.

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## INSECT PEST MANAGEMENT FOR OPTIMUM PRODUCTIVITY

### FIELD SCOUTING IS A VALUABLE INSECT MANAGEMENT TOOL

Identification of insect pests, economic thresholds, treatment costs, and timing of treatments are just some of the topics for which unbiased, research-based information has been provided to producers by South Dakota Cooperative Extension Service personnel. Many producers have saved significant money by scouting their fields and opting not to spray because pest numbers were not at economic threshold levels.

### ISSUE

Insect pests rob plants of vital nutrients, decrease production and pose a major economic challenge for crop producers as they face increasing input costs and threats to their business. Insect pests need to be identified and monitored for economic thresholds and managed responsibly to maximize profitability in crop production. Education, research and demonstrations conducted by South Dakota Cooperative Extension Service and South Dakota State University can help producers make economically and environmentally sound decisions, which in turn can increase farm profits and benefit South Dakota's economy.

### WHAT WAS DONE

A variety of educational programming on insect management topics was done by Extension Educators and SDSU faculty and specialists, including:

- At least 30 group meetings, including scouting workshops, crops clinics, and private (pesticide) applicator training sessions, were attended by 1260 producers, who collectively farmed over 425,000 acres.
- Educators had one on one visits with over 250 producers or crop consultants, with recommendations given for approximately 178,000 acres of crop ground.
- Crop tours/field days reached 175 producers.
- Producers, Extension educators and SDSU Research collaborated on several research trials:
  - o Soybean aphid sentinel plots
  - o Sunflower moth monitoring network (7 sites in SD)
  - o Field pea aphid sentinel plots
  - o Transgenic corn pest research work
- Based on media coverage, approximately 8,400 clientele read or heard information on pest management in 19 different newspaper columns and 5 radio programs.

### IMPACTS

- Producers and crop consultants learned how to identify various insect pests, their life cycles, how to scout for them, economic thresholds and how to use them in various crops, and proper timing of insecticide treatments.
- Significant savings have been realized by producers who are scouting their fields and looking for the economic threshold numbers before opting to spray.
  - o One Educator reported that 15 producers scouted for alfalfa weevils and did not spray due to low numbers. About 3000 acres were involved, saving approximately \$3000.
  - o In another area, 5,140 acres of soybeans were not sprayed for aphids, saving \$102,800. Based on Extension educator recommendations, 1,800 acres were treated, resulting in an expected 6 bushels/acre yield increase. Estimating 10/bushel for beans, this translates to \$108,000 in additional gross income, or a \$72,000 net return when \$20,000 in costs is subtracted.
  - o One producer that was going to spray approx. 450 acres at \$17.00/acre, but after scouting his fields, found that he didn't have to spray, even though his neighbors all were (spraying).
- Producers are also less reliant on private agronomists to scout for them, resulting in cost savings.
- In addition to cost savings, less spraying also means chemical entering the environment.

### COLLABORATORS

- Crop consultants and professional agronomists were both clientele and collaborators

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Bob Fanning(1), Terry Hall, David VanderVleit, Ruth Beck, Steve Sutura, Connie Strunk, Jon Kieckhefer, Kim McGraw, Mark Rosenberg, Craig Rosenberg, Irene Graves, Theresa Fritz, Chuck Langner, Gary Erickson, Mike Huber, T.J. Swan, Justin Keyser, Roger Barrick, Bob Drown, Paul Johnson, Larry Wagner, John Cairns. South Dakota State University Specialists, staff and researchers involved: Dr. Mike Catanguai(2), Dr. Kelley Tilmon(3). (1) Extension Educator/Agronomy, Lyman County Extension Office, 300 S Main, PO Box 68, Kennebec, SD 57544. Ph: 605-869-2226. E-mail: robert.fanning@sdstate.edu.

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## EVALUATING CROP RESIDUE PRICING AND VALUE

### VALUE OF CROP RESIDUES RECOGNIZED BY CROP & LIVESTOCK PRODUCERS

Sale prices of wheat straw were 30 to 50 percent higher for many producers in 2008 because of their recognition of the true value of the straw, which was determined by using the Crop Residue Calculator, developed by South Dakota Cooperative Extension Service personnel and South Dakota State University faculty. The Crop Residue Calculator saved the producers over \$450,000 in lost fertilizer value.

### ISSUE

Dramatically increased fertilizer and input prices have led to crop producers' concerns that they were underestimating the value of crop residues, both for sale of the residues to livestock producers, as well as not understanding the true value of these residues as fertilizer.

### WHAT WAS DONE

- A method of determining crop residue value, based on fertilizer values of the nutrients removed with the residue, was developed and the information used in spreadsheet that would help producers compute the nutrient value of their straw based on fertilizer values.
- Over 120 producers throughout the state attended Extension Educators' programs which discussed fertilizer values in crop residues. In addition, Educators answer day to day questions about the value of crop residues.
- Thirty dairy producers discovered how expensive crop residues were when based on fertilizer values.
- The Crop Residue Calculator was used by Extension Livestock Educators to help livestock producers determine if wheat straw and other residues were viable alternatives in least cost rations. They also used the crop residue calculator to help producers determine reasonable purchase prices for residues to be used for feeding livestock.

### IMPACTS

- Several hundred one-one contacts between Extension Educators and producers across the state resulted in producers stating that they would have charged significantly less for their crop residues, than what the true value of the residues was based on the fertilizer value.
- An international equipment manufacturer used the crop residue calculator, posted at <http://econ.sdstate.edu/Extension/otherlinks.htm> to determine the value of wheat straw, needed for their baler research.
- One producer would have undercharged for bales by \$24 per acre on 120 acres; a total of \$2,880.
- Three producers increased their price per bale by \$10 on 80 acres of wheat straw, and income increase of \$800.
- One dairy producer reported that they paid a lower purchase price for wheat straw bales by providing the crop producer manure to return to the crop ground. The manure returned some of the crop producer's fertilizer value that was removed when the wheat straw was removed and sold.
- A crop producer sold 15,000 straw bales to a livestock producer, priced on the basis of the fertilizer value of the nutrients removed with the straw.

Quotes from producers about the Crop Residue Calculator:

- "Using the crop residue calculator has allowed me to make the decision on pricing my wheat straw to the local dairy producer."
- "This residue calculator is something that we needed this year with the high fertilizer costs."
- "Knowing crop residue values gave me the opportunity as a livestock producer to return manure to the field to keep that price per bale down that I had to pay."

### COLLABORATORS

- Dr. Ron Gelderman and South Dakota State University Soils Testing Laboratory.

### CONTACTS

South Dakota Cooperative Extension Service Staff involved: Extension Educators Don Guthmiller (1), Heather Gessner(2)-, Steve Sutura, Paul O. Johnson, and Charles Langer, and numerous other Agronomy and Livestock Extension Educators and Specialists.

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## OPPORTUNITIES IN ALTERNATIVE MARKETING AND MANAGEMENT NATURAL CATTLE PRODUCTION

### IMPACTING SOUTH DAKOTA CATTLE PRODUCERS

A growing local, regional, and national community of interest obtained and applied firsthand accounts of the risks and requirements necessary to secure profitability in the production of "natural" feeder cattle and beef.

### ISSUE

"Natural" beef, produced without the use of growth promotants or antibiotics, is the fastest growing sector of the beef industry. The potential for growth in this region is high due to two primary factors:

- Northern Beef Packers in Aberdeen, SD has announced its intentions to harvest "natural" cattle.
- Dakota Farms Natural Beef harvesting "natural" cattle in New Rockford, ND.  
This meeting was developed to answer the questions that producers who are considering producing "natural" cattle may have regarding rules, regulations, production, management and associated costs.

### WHAT WAS DONE

Fifty producers and industry leaders from five states attended this educational seminar in Aberdeen, SD – a central location relative to indicated demand of "natural" beef cattle in the future. This multi-disciplined program was directed at cow-calf producers interested in "natural" beef production and addressed the following topics:

- Allowable and disqualified products
- Valuing "natural" feeder cattle
- Costs of gain in alternative production systems
- Natural market access
- Qualification for foreign markets
- Process Verified Programs and Quality Systems Assessment

### IMPACTS

- Short term impacts
  - o Producers are 53% more knowledgeable on costs of gain in "natural" production systems (43% overall participant change).
  - o Knowledge about accessing natural and foreign markets changed 42% and 41%, respectively, overall.
  - o Producers are 50% more knowledgeable concerning antibiotic use.
- Long Term Impact - Producer testimonial from Bernard Donahue, Howard, SD – Cow/Calf Producer and Cattle Feeder
  - o Developed relationships with two packers and other cow-calf producers of similar interest.
  - o Economic impact:
- Marketed 629 head through Non-Hormone Treated Cattle (NHTC) program
- \$106.13/head profit (\$66,755.77 total)
- 803 additional cattle being fed on NHTC program to be marketed in next 30 days
- Fall cattle contracted for February delivery at \$10/cwt live basis premium

### COLLABORATORS

- SD Cooperative Extension Service
- USDA
- Ivy Natural Solutions
- Aberdeen Livestock, Hub City Livestock, Northern Beef Packers, and SD Certified Beef

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Tyler Melroe(1), Jim Krantz(2), Lanette Butler. South Dakota State University faculty: Dr. Russ Daly(3), Joan Hegerfeld, Suzanne Stluka.

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# EMPOWERING WOMEN THROUGH FARM & RANCH MANAGEMENT EDUCATION

## RURAL WOMEN'S LIVES CHANGED

Over 90% of women who participated in “Annie’s Project” have improved their financial skills and are contributing more to farm and ranch management decisions. “Annie’s Project” and other programming conducted by South Dakota Cooperative Extension Service educators has provided women with tools for family communication, farm and ranch management, and personal networking that are transforming the women’s lives.

## ISSUE

Women throughout rural South Dakota are pulled in many directions. The stress of family demands, financial concerns and work is a common issue for all ages of rural women. Women are searching for resources to provide them the tools to face the variety of risks that can occur.

## WHAT WAS DONE

- “Annie’s Projects” were established in eight locations throughout the state to provide resources on family communication, farm/ranch management, and personal networking.
- Annie’ Project was developed by Ruth Hamilton and daughter that saw first-hand the challenges her son experienced on the farm.
- The 5th annual Rural Women’s Conference was held and focused on a variety of issues to help women to hone business skills and build on family relationship tools.
- Both programs were funded by grants received by South Dakota Cooperative Extension Service Educators and donations provided by businesses in the state.
- Evaluations were conducted immediately following the conferences and 6 months later to assess effectiveness of the programs and measure the changes women have done since being a part of the programs.
- A \$25,000 grant has been received to continue to build the Annie’s project during 2009.

## IMPACTS

Six month after the sessions concluded 130 women had made changes to their personal lives and businesses due to the information they gained from the programs.

- 73% have better communications with family members which included family business meetings, organizing farm transition communication or being a part of business discussions.
  - o “Things have changed. My husband and brother-in-law have rented all the farm ground. They set up a S-corp for crops. The class taught me that this was better for us than a partnership.”
- 93% are doing a better job of tracking income and expenses.
  - o “I had always used Quicken, but only to keep the register part. Now I am using some of the other parts of the program and it takes me less time to get the information my husband and account need.”
- 80% have started or completed business transition plans.
  - o “We sat down and talked to the kids about what we put in our will, which we made in January (2007). I learned our daughter doesn’t really seem interested in the farm operation.”
- Three new Annie’s projects will be starting for 2008-2009, based on requests from women across the state.
- A \$25,000 grant has been received to expand the Annie’s project. The second phase, called SASSY, will empower the groups to expand the program to fit the needs of their businesses and communities.

## COLLABORATORS

- North Central Risk Management Education Center
- North Dakota State University

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Robin Salverson(1), Stacy Hadrick(2), Heather Gessner, Lanette Butler, Cynthia Bergman, Helen Geppert, Adele Hart, and Mike Huber.

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# ESTATE PLANNING AND FARM TRANSITIONS - 2008

## ESTATE PLANNING SAVES FARM OPERATION MILLIONS

Five South Dakota family farm operations will save an average of \$10 million in estate taxes based on the changes they made to their estate plan following their participation in estate planning workshops coordinated by South Dakota Cooperative Extension Service.

## ISSUE

As the average age of South Dakota’s producers climb, so do their land values and potential tax consequences. Family operations need to begin making decisions about asset distribution and transfers in order to accomplish the goals of the operation. Along with knowing and understanding the financial side of their operations, family relationships and dynamics are a large factor to consider during this often difficult time of transition.

## WHAT WAS DONE

- A series of workshops on estate planning were held in Brookings, Elk Point, Mitchell and Aberdeen. 101 individuals (58 families) attended these workshops.
- Follow-up communication via 13 bi-weekly mailings was also provided.

## IMPACTS

Following the four session series, attendees were asked what information they were going to use with their families:

- 98% indicated that the communication material was useful and something they would use at home.
- 53% said take-home topics they would use included goals, strategic planning and family business meetings.
- 80% indicated having a much better understanding about the estate planning process following the sessions. 6– Month follow-up evaluation results (41% or 24 of 58 families responded):
- Average tax savings for 5 clients working with an Estate Planner was \$1.8-2 million per operation. (Information based on comments from Estate Planning professionals working with the participants following the meetings.)
- 17, or over 70%, are more than one-fourth completed with their Business Estate Plan. (Two consider their plan 100% completed).
- 67% are more than one-fourth completed with their Personal Transfer Plan. (Four consider their plan 100% completed.)
- 88% have done something with their Business or Personal Estate Plan:
  - \* Talking with family/Family meetings
  - \* Reviewed/Updated Wills
  - \* Reviewed/Changed/Created Trust
  - \* Met with Lawyer/Estate Planner
  - \* Changed beneficiaries
  - \* Reviewed/Updated Titles
  - \* Researched/Updated long term care/life insurance policies
- 50% indicated that family communication has gotten “better” and they have made changes in how they communicate
  - \* “more communication happening and more issues being recognized”
  - \* “I’m very glad that I got motivated by the seminar to talk to the children in that manner. We seem to have a more open conversation now.”
  - \* “Yes. Have included children in more conversations about future plans. Yes, the sessions made us think about this more.”
  - \* Participants indicated and average value of the sessions to be- \$167-\$300. (Responses not included in this average were \$2 million, \$1000, and “How can you put a value on that?”)

## COLLABORATORS

- South Dakota Soybean Research and Promotion Council
- Private Industry

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Heather Gessner (1), Don Guthmiller (2), Leah Burnison (3), Stacy Hadrick, Marjorie Zastrow, Julie McCord, Donna Bittiker, Tyler Melroe, Jerry Mills. South Dakota State University Extension Specialists and staff: Jack Davis and Burton Pflueger.

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## CHILDREN’S GARDENING WORKSHOPS PROMOTE HEALTHY CHOICES

### INCREASED PHYSICAL ACTIVITY RESULTS FROM CHILDREN GARDENING

Children across the state have increased their physical activity, tasted vegetables they never tried before and are making healthier choices as a result of Children’s Gardening Workshops, hosted by South Dakota Cooperative Extension Service.

### ISSUE

National statistics indicate that childhood obesity and early onset of type 2 diabetes have risen at an alarming rate over the past two decades. Researchers suggest several reasons for this trend, including children’s inactivity, especially screen time (computer, TV, and gaming) and poor nutritional choices, especially foods that are high in fats and sugar. Involving children in gardening projects offers opportunities to increase their physical activity levels and to influence their food choices.

### WHAT WAS DONE

- In 2008, South Dakota Cooperative Extension Service coordinated the third annual Children’s Gardening workshop, which was attended by teachers, afterschool providers, Master Gardeners and volunteers. Cumulative participation during the three years is now over 75 individuals, including 27 teachers.
- Participants take this information to all parts of the state. Children’s gardening programs are conducted in many different settings, i.e., classrooms, afterschool, community gardens, Boys & Girls Clubs, and more. Programs vary in length from a few sessions to every week throughout the summer.
- Information about grants, curriculum, resources, and best practices is shared within the group through regular email communication.
- Participants have become knowledgeable in plant science, nutrition, food safety, soil types and preparation, insects, recycling, composting, plant nutrients, and positive youth development. Participants have been introduced to several research-based and age-appropriate curricula and resources for gardening with children.
- Through a generous contribution from the SD Community and Family Extension Leaders Association, several participants have received small grants to purchase equipment, seeds or fertilizers.

### IMPACTS

Reports from workshop participants indicate over 400 children, ages 5 to 16, were involved in Children’s Gardening programs. Children were actively involved in gardening activities, increasing their physical activity levels and amount of time spent outdoors. Specific examples include:

- Garden produce was incorporated into hands-on food preparation and nutrition lessons about fresh fruits and vegetables, especially snack foods.
- Children from limited resource families received seeds and containers for planting at home.
- Children identified insects, helpers and pests. Some planted butterfly gardens.
- Children in three projects identified and implemented beautification projects by planting flowers around schools, elder care homes, and public buildings.
- Children researched and experimented with different types of soils, fertilizers and pest controllers to determine the best practices.
- Pre-teens and teens, many of whom are malnourished, learned about the importance of fresh vegetables and tasted vegetables that were unfamiliar to them.

Potential long-term impacts from children’s gardening projects:

- Children maintain increased physical activity and decrease health risks associated with inactivity.
- Children develop life-long habits of eating more vegetables. Research has shown children involved in growing their own vegetables, are more likely to eat the vegetables.

### COLLABORATORS

- South Dakota Master Gardeners
- Children’s afterschool and community programs, including: Dell Rapid Community Haven, Pumpkin Patch Kid (Estelline), M & M Day Care Preschool (Huron), Onida Garden Bugs (Marla Huse), Jefferson Elementary Afterschool Program (Huron), Tiger Post Out-of-School Time program ( Ipswich), Brookings Boys & Girls Club, Children’s Care Hospital & School ( Sioux Falls), Great Afterschool Place (Brookings),New Beginning Center (Aberdeen), OST Afterschool Kids ( Milbank), Pumpkin Patch Kids (Brookings), and Multicultural Center (Sioux Falls)
- SD Community and Family Extension Leaders
- Iowa State University Extension
- Minnesota Landscape Arboretum

### CONTACTS

South Dakota Cooperative Extension Service staff involved: South Dakota State University Extension Specialist Marilyn Rasmussen(1). Extension Educators Cynthia Bergman, Chris Zdorovtsov, Jerry Mills , William Keck.

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## INCREASING YOUTHS’ KNOWLEDGE OF THE “GREEN” (HORTICULTURE) INDUSTRY

### YOUTHS’ INTEREST IN HORTICULTURAL CAREERS INCREASES

Over 50% of youth participating in the State 4-H Horticulture Judging Contest say their interest in a horticultural career has increased because of what they have learned through 4-H horticulture judging activities. These results reflect the work of South Dakota Cooperative Extension Service educators and specialists who have revamped the event in recent years to reflect the broad scope of horticulture and the “green industry.

### ISSUE

For many years the 4-H Horticulture Judging Contest had functioned at a very basic level of ranking plates of vegetables based on their appearance. The outcome was that 4-H youth learned how to select the best offering of beans, onions, or other vegetables, but had little awareness of the communities of interest that revolve around the growing and evolving “green industry” in South Dakota. Realizing this, and that the study of the art and science horticulture for youth could be broader and more exciting, prompted a “growth” of the project in new directions.

### WHAT WAS DONE

- South Dakota State University Horticulture and 4-H/Youth Development specialists and Extension educators explored ways to transform the horticulture project to a more sophisticated and appealing level. At the heart of this transformation was the recognition that the basic knowledge and skills of plant science can be applied not only to gardening, but also to landscaping, large and small scale food production, environmental reclamation and other areas.
- To challenge youth to increase their understanding of horticulture and to develop knowledge and skills that would prepare them to be anything from hobbyists to scientists, the following changes have been implemented to date:
  - o Plant parts identification and fruit judging was added for “Beginner” youth (ages 8-10).
  - o Plant nutrition, plant nomenclature (scientific classification and naming), environment and horticultural plants, flower or indoor plant judging, along with plant parts identification and fruit judging, were added as aspects for “Junior” youth (ages 11-13).
  - o “Senior” youth (ages 14-19) cover all the topics in the junior division, along with garden flowers, and fruit and nut production.
  - o All age divisions retained vegetable judging and answering questions on classes as a portion of the event.
- 183 junior and senior division youth completed an exit survey following the 2008 state 4-H horticulture judging contest.

### IMPACTS

- Results of the survey indicated:
  - o 84% learned “some”, “quite a bit”, or “a lot” about plant parts identification and function.
  - o 46% learned something new about plant nomenclature.
  - o 78% learned something new about plant nutrition.
  - o 83% learned “some” to “a lot” about environment and horticulture plants.
  - o 54% had an increased interested in pursuing a horticultural career, based on what they had learned through the new 4-H horticulture judging contest.
- The changes implemented thus far reflect only a portion of the anticipated changes to this project area. Continued transformation of the project area has the potential for significant impacts in the future.

### COLLABORATORS

- Several South Dakota nurseries and greenhouses.

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators: Jerry Mills (1), William Keck, Chris Zdorovtsov, Cynthia Bergman, Steven Munk. South Dakota State University Extension Specialists and staff: Dr. Marilyn Rasmussen(2) and Rhoda Burrows.

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## CREATING AND STRENGTHENING LOCAL FOOD MARKETS

### PRODUCERS HAVE NEW LOCAL MARKETS

New Farmers' Markets have opened in at least four South Dakota communities due in part to the efforts of South Dakota Cooperative Extension Service. Extension Educators have provided workshops, advised vendors, and helped promote the concept of local markets and are assisting with the implementation of the South Dakota Buy Fresh Buy Local Campaign.

### ISSUE

The movement toward locally grown and produce food has been expanding across the nation since the early 1970's. Local food systems offer many advantages to both producers and consumers. However, as local food systems develop in South Dakota, availability, sourcing, and marketing continue to be problematic for producers and consumers.

### WHAT WAS DONE

Buy Fresh Buy Local Campaign:

- Ninety-seven producers, consumers and educators attended meetings on establishing a regional "Buy Fresh Buy Local Campaign". Meetings held May-August in Aberdeen, Brookings, Huron, Sioux Falls and Vermillion discussed partnerships, strategies, participation, promotion and other needs.

Farmers' Market Development:

- Statewide participants in the Farmer's Market Conference, held in Brookings in February 2008, were educated on selling their garden produce via speakers who have been very successful in this area.
- Securing market locations, identifying potential funding for advertising, educating vendors and consumer on food safety and preservation, and hosting planning and development meetings are critical steps in the development of new farmers' markets in which Extension educators from Clark and Hand counties had lead roles.
- Advising farmers' market boards, helping with committee decisions on use of grant funding, and assisting with promotion through radio and newspapers are examples of how Extension educators work with existing farmers' markets, such as those in Beadle, Brookings and Codington counties.

### IMPACTS

- Implementation of a South Dakota chapter of the Buy Fresh Buy Local Campaign is scheduled for December 2008.
- New Farmer's Markets in Estelline, De Smet, Willow Lake and Miller opened this year.
  - Customers quoted: "Great idea", "Best thing that's happened... in years", "Thanks for organizing this – great", "I love the fresh produce", "Produce is so much better and healthier."
- The Huron 12-vendor farmers' market expanded its operation to twice a week due to increased customer demand. Local producer stated "The Garden Grocer" newsletter produced by Extension is helpful towards viewing the market as a business operation.
- Watertown farmer's market has experienced continued growth and reached its 10-year anniversary.

### COLLABORATORS

- South Dakota Specialty Producers
- Pat Garrity, South Dakota Buy Fresh, Buy Local Campaign coordinator
- Food Routes Network, Buy Fresh Buy Local Campaign Developer
- Clark Chamber of Commerce and Clark County Community Aging Grant Participants

### CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Chris Zdorovtsov(1), Linda Berg, Cynthia Bergman, Bobbi Larsen, Denise Lingscheit, Jerry Mills, Kimberly McGraw, Chuck Langner, Anthony Shaheen, and Laurie Tangen.

(1) Minnehaha County, Horticulture Extension Educator, 220 W. 6th St. Sioux Falls, SD 57104.

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## MASTER GARDENERS VOLUNTEER TIME AND EXPERTISE

### TIME VOLUNTEERED BY MASTER GARDENERS EXCEEDS 5,000 HOURS ANNUALLY

Nearly 5,500 volunteer hours were reported by South Dakota Master Gardeners in 2007, the equivalent of two and one-half full time people. South Dakota Cooperative Extension Service oversees the training of the Master Gardeners. Upon graduating from the course, volunteers are able to provide answers to questions on yard and garden issues, to work with youth on gardening projects, to host community service events such as plant tours, and provide other services to communities.

### ISSUE

Thousands of South Dakotans turn to Extension offices across the state for answer to their yard, garden, and other horticultural questions. Due to limited resources, South Dakota Cooperative Extension Service has only a few educators specifically trained in horticulture. To meet clientele's needs, a "train the trainer" approach has been taken through the Master Gardener Program. Volunteers receive education and training necessary to be able assist county Extension offices in serving the public.

### WHAT WAS DONE

- Each volunteer received 60 hours of training in botany, lawn care, fruit production, woody plant care, vegetable production, plant diagnosis, and insect, disease and weed management. Training was provided by the South Dakota State University Extension Horticulture Specialists and area Horticulture Extension educators. Trainings were held in Rapid City, Aberdeen, Huron and Sioux Falls.
  - In exchange for the training, each participant is required to volunteer a minimum of 50 hours over the next two years in their respective community.
- Over 1,000 volunteer master gardeners have been trained in 21 communities over the past 17 years. Larger communities like Sioux Falls, Aberdeen and Rapid City have training every other year. There were 100 incoming volunteers in 2008.

### IMPACTS

- 5,476 volunteer hours reported in 2007. That is equivalent to approximately 2.6 full time employees, or over \$80,000 in services provided to communities and the state.
  - The average hours reported over the last seven years is 5,643 per year.
- Master Gardeners volunteer their time in many ways, including:
  - Answered horticulture calls
  - Wrote weekly news columns and recorded radio public service announcements
  - Taught horticulture classes
  - Served as judges for horticulture projects at county 4-H Achievement Days
  - Taught youth the benefits of raising their own vegetables
  - Provided educational information at Home and Garden Shows
  - Conducted plant clinics, plant swaps and plants sales
  - Hosted community garden walks
  - Constructed and maintained demonstration gardens in their community
  - Developed and maintained community gardens
  - Worked with youth and others on community service and beautification projects
- Estimates are that over 26,000 adults and 7,000 youth are reached annually by Master Gardeners through workshops and one-on-one contact. If homeowners saved an average of \$25 based on the advice provided, these efforts resulted in a \$650,000 savings.
- SD Master Gardeners have contributed over \$15,000 to an endowment fund to provide grant money for educational purposes.
- SD Master Gardeners Association and the SD Community and Family Extension Leaders have awarded 18 mini-grants totaling \$2,200 in the last three years for youth education programs and community beautification projects.

### COLLABORATORS

- Prairie Partners Master Gardeners – Aberdeen area
- Pennington County Master Gardeners – Rapid City area
- Fall River/Custer Master Gardeners – Hot Springs area
- South Central Master Gardeners – Murdo area
- Prairie Potters Master Gardeners – Pierre area
- Huron Area Master Gardeners – Huron area
- Minnehaha Master Gardeners – Sioux Falls area
- Mitchell Area Master Gardeners – Mitchell area
- Buffalo Area Master Gardeners – Buffalo/Bison area
- Dakota Prairie Master Gardeners – Miller/Wessington area
- SD Master Gardeners Association – South Dakota
- Master Gardeners throughout the state of South Dakota

## CONTACTS

South Dakota Cooperative Extension Service staff involved: Extension Educators Bill Keck(1), Jerry Mills, Chris Zdorovtsov, Cindy Bergman. South Dakota State University Extension Specialists and staff: Rhoda Burrows(2), Dr. John Ball, Dr. David Graper, Dr. Jim Wilson, Dr. Mike Catangui, Dr. Mike Moechnig, Dr. Marilyn Rasmussen.

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# Family and Consumer Sciences



## BUILDING STRONG HEALTHY FAMILIES FOR SOUTH DAKOTA’S FUTURE

### TRANSFORMING PARENTING AND COMMUNICATION SKILLS OF SD FAMILIES

Parents and families participating in the “Building Strong Families” and “Bright Start Programs” hosted by the South Dakota Cooperative Extension Service have increased their parenting, family communication, money and time management skills to combat the negative effects a lack of these can have on our families and children.

### ISSUE

Studies show that proper family communication and parenting skills help prevent teen substance abuse, pregnancy, delinquency, and crimes. Studies also show that when families are lacking affordable housing, facing chronic debt and family breakdown, serious effects can be observed on youth and their families.

### WHAT WAS DONE

- Building Strong Families Series was presented monthly to the Rosebud Sioux Tribe Habitat for Humanity families in Mission SD.
  - Topics covered were: Positive Guidance and Discipline, Feeding Your Family without Starving Your Wallet, Serving Food Safely, Strengthening Family Communication, Child Safety, Financial Wellness for Families, and Balancing Work and Family were provided.
- SDSU Extension Educators partnered with the Bright Start Program
  - Helped author and edit the Bright Start Newsletter. Topics covered were health, safety, growth and development, literacy, and current issues.
  - Bright Start Responsive Parenting Classes covered hands on approach to age appropriate parenting over a six week period. Topics include- the parent child dance, the unique child, responding to your child’s needs, how and what your child learns, parenting is stressful and growing up is stressful, and encouraging your child.

### IMPACT

- 60 individuals and 30 children were reached through the Building Strong Families Series in Mission, SD
  - 85% of participants stated that they learned new ways to save money when shopping for food,
  - 100% stated that the program increased their commitment to handing food safely,
  - 80% stated that they developed a clearer understanding of discipline and appropriate limits, and,
  - 80% of participants learned ways to increase their time management skills.
- 5000 Bright Start Newsletters were delivered to parents of young children bi-monthly.
- 3 Bright Start Responsive Parenting Programs were held. Two in Brookings and one in Elk Point.
  - 25 parents and caregivers were reached through these programs.
  - Verbal comments such as the following have let SDSU Extension Educators know that the concepts are being heard.
- “There is vital information and learning needed to be done for infant to three that will impact their adulthood.”
- “I learned to use positives for children –never negatives!”
- “By having a persistent connection with your child through emotion and physical play can help your child grow up to be a good individual.”

### COLLABORATORS

- Rosebud Sioux Tribe Habitat For Humanity- Sandy Tucker Director
- SDSU Cooperative Extension Service
- Office of Child Care Services
- Governor’s Office
- Brookings County Resource Center
- Family Resource Network
- Stanford Child Services

### CONTACTS

- Ann Schwader- Family and Consumer Science (FCS) Extension Educator Gregory County, PO Box 437, Burk SD 57523.
- Bright Start Editorial Committee- FCS SDSU Extension Educators and Specialist:
  - Deb Sundem-Codington County, PO Box 996, Watertown, SD 57201
  - Nancy Pauly-Bennett County, Amanda Diede, Bon Homme County, Linda Burg, Beadle County, Dr. Ann Michelle Daniels, SDSU Extension Family Life, Parenting and Child Care Specialist.
- Article Contributors: Tracey Lehrke- Roberts County; Bobbi Larsen- Clark County; Julie McCord, Brule County; Ann Schwader, Gregory County; Sandra Namken, Hamlin County; Donna Bittiker, Moody County; Sally Park Hageman, Fall River County; Laurie Tangen, Brookings County; Leah Burnison, Union County; Deb Rombough, Lawrence County; Becky Leonard, Spink County; and Jessica Mueller, SDSU Graduate Assistant.

## IMPROVING CHILD CARE RESOURCES FOR YOUTH AND ADULTS

### ISSUE

South Dakota has the highest percent of working mothers in the nation. According to the 2003 South Dakota KIDS COUNT Factbook, 77.5% of mothers with children ages birth to 6 years are in the workforce. In South Dakota, 47% of all children under age 6 are in paid child care. This is nearly twice the national average and more per capita than any other state in the nation. With the large number of mothers in the workforce comes the need for quality child care to insure the healthy growth and development of children. Quality care can set children on a positive path for life. Children in quality care are more likely to graduate from high school, will have heighten social skills, fewer tendencies for alcohol and drug abuse, and are less likely to be incarcerated. Child care training offers the opportunity for providers to enhance their abilities in providing quality child care.

### WHAT WAS DONE

- 4 Child Care Providers Conferences were held reaching over 315 participants in Mitchell, Yankton and Watertown (2). Licensed providers attending fulfilled in-service licensing requirements. Topics taught were: children’s health issues, SD Early Learning Guidelines, teamwork, guidance & discipline, emergent vs. theme based curriculum, activities for out-of-school time programs and snack ideas, documenting child abuse and neglect, conflict resolution for school age children, lesson planning for toddlers, professionalism for early care and education, emotional, cognitive, physical, language, musical and social development, physical activity, parent partnerships, children with disabilities, provider self-care, food safety and peacemaking – more than hammers and nails (conflict resolution).
- A Footsteps and Parent Time newsletter for child care providers was distributed monthly in the following counties Clark, Codington, Deuel, Grant, Hamlin and Roberts and also available for use throughout the state. Topics included children and fears, prioritizing, bullying, promoting physical activity, professionalism, transition times, communicating with children, food safety, and exploration with nature. Parent Time targets parents.
- 9 individuals in the Conde, SD area completed five hours of training. Topics included youth development, parents as partners, bullying issues and civic engagement.
- 78 Area Child Care Providers, Teachers and Foster care parents in the Burke, SD area completed 14 hours of training. Topics included healthy sexuality, First Aid/CPR, Character Counts for afterschool kids, conflict management, positive discipline and kids and self-esteem.
- The 2008 Annual Tri-State (Iowa, Nebraska and South Dakota) Child Care Providers Conference is being planned for October and FCS Educators planning the conference are anticipating 300 participants.

### IMPACT

- Over 410 Child Care Providers in South Dakota received in-serving training hours to fulfill licensing requirements from the Department of Social Services.
- As a result of child care providers attending child care conferences and afterschool training programs, post-surveys and formal evaluations showed the following information about the participants:
  - 75% provide more program choices and options for children
  - 88% listen and observe children’s needs more readily
  - 54% noted more involvement of parents in their child care programs
  - 75% incorporated more hands-on/engaging activities in their out of school time program
  - 71% improved parent communication by using notes, certificates and pictures
  - 75% incorporated more healthy snacks into their program
  - 86% acknowledged they know what IDEA (Individuals with Disabilities Education Act) stands for
  - 100% can use the components of active listening
  - 97.5% indicated they could adopt the components of conflict management
  - 97% of participants understood the principles of early development of children
  - 96% can adapt the wellness information to help lower the stress level in their daycare.

### COLLABORATORS

SDSU Cooperative Extension Service, Watertown Community Foundation; First PREMIER Bank/PREMIER Bankcard; Gera Jacobs, University of South Dakota; SD Department of Child Protection Services; SDSU College of Family and Consumer Sciences – Human Development Department; Dr. Craig Crimson, Carol Hettinger-CC Counts, Brown Clinic, Watertown; Barbara Dowling, Early Childhood Educator, Conde Horizons Program, SD Teacher of the Year 2006; Whitney Renville, Research Site Manager for UNM FASER Program; TS Wellness-Sioux Falls, Del Hubers-Kindermusik, Department of Social Services; Child Services-Pierre; Joan Hegerfeld-Baker, SDSU Food Safety Specialist; Dr. Ann Michelle Daniels, SDSU Extension Family Life; Parenting and Child Care Specialist; Karla Trautman, SDSU Extension Leadership Development Specialist and Sara Jensen, Infant Toddler Training Specialist, Aberdeen.

### CONTACTS

Family & Consumer Science Extension Educators: Tracey Lehrke, Roberts County; Deb Sundem, Codington County; Bobbi Larsen, Clark County; Amanda Diede, Bon Homme County; Becky Leonard, Spink County; Ann Schwader, Gregory County; Ellyn Eddy, Davison County; Julie McCord, Brule County; Sandra Aamlid, Minnehaha County; Lavonne Meyer, Turner County; and Sharon Guthmiller, Yankton County. 4-H/Youth Development Extension Educators: Marta Lemke, Lake County; Alice Nickelson, Hanson County; and Tina Dangel, Charles Mix County.

## LAUNCHING “RU GREEN – REUSE, REDUCE, RECYCLE”

In 2008, local retail stores, including grocery, drug, hardware and others, initiated sales of reusable shopping bags. Monetary incentives were offered by some to encourage use of these bags and decrease the need for plastic bags. Focus on recycling was renewed.

### ISSUE

Americans throw away approximately 3 ½ pounds of garbage per person per day, with most of it going to landfills. Landfills are closing because they are full and space for new sites is limited. Garbage varies in length of time it stays in a landfill ranging from a few weeks for an apple core to 10-20 years for plastic bags to indefinite for styrofoam. Plastic bags have additional negative environmental impacts as marine animals die from eating discarded plastic bags mistaken for food. (Rutgers Cooperative Extension Service)

### WHAT WAS DONE

- Patterns to make a reusable cloth shopping bag, plastic bag caddy and raggedy potholders were developed, reviewed and edited by Extension Educators in Turner, Minnehaha, Moody and Brookings counties.
- 4-H sewing workshops were held in Parker, Sioux Falls, Flandreau, Brookings, Howard and De Smet. 4-H members, 4-H leaders, parents and grandparents participated.
- 4-H leaders in Minnehaha County created a “trash line-up” as they participated in the “How Long Will It Last” activity from Rutgers Cooperative Extension.
- “Trash Time Line” matching activity (item and time to decay) was developed in Turner County. Variations were used at all sewing sites.
- Nearly 300 4-H youth attending 4-H Camp participated in a “Don’t Trash the Planet” activity led by Extension Educators in Corson and Walworth counties.
- SDSU Extension Assistant- Food Safety incorporated the Shopping Bag pattern/directions into the organic foods curriculum.
- A “Train the Trainer” version of RU Green was taught at the South Dakota State Fair to encourage 4-H leaders, teachers and others to use project materials.
- Project patterns and directions are available on the Extension South 1 FEU web site.

### IMPACT

- Participants at six 4-H sewing workshops, with participants from nine counties made 54 shopping bags, 54 plastic bag caddies, and 44 hot pads to help them recycle.
- 54 youth from 9 counties developed or polished sewing skills.
- 54 youth now have a lined shopping bag that is stronger than the recycled bags available at grocery, hardware and drug stores and less expensive than cloth bags in the retail market (up to \$40).
- 82 exhibits were entered at 4-H Achievement Days bringing visibility of the RU Green project to the public.
- 11 people recycled a denim garment by donating jeans to the sewing projects.
- A Minnehaha County 4-H club reported 21 members participating in a “How Long Will It Last” trash line-up activity after leaders participated in it at the leaders meeting.
- South Dakota Cooperative Extension published “RU Green-Shopping Bag,” funded through USDA CREES National Integrated Food Safety Initiative 2003-51110-01714.
- Ripple affect includes:
  - o FCS Extension Educator in Turner County was personally contacted by two FCS teachers who would like to use the project in their classrooms. One teacher has a classroom of diverse students, most of whom can not speak English, and she wants to teach them about recycling.
  - o Three adults have requested patterns/directions to make Christmas gifts. (With the changing economy they may be looking for cheaper alternatives for gifts.)
  - o Requests received from Community and Family Extension Leaders (CFEL) groups in Charles Mix County for program materials and from Minnehaha County for a sewing workshop.
  - o Minnesota 4-Her sewed a shopping bag, plastic bag caddy and raggedy potholders. Her “Reuse, Reduce, Recycle” consumer entry earned a championship ribbon at her local Achievement Days and is eligible for entry at the Minnesota State Fair.
  - o Minnesota 4-H club project leader requested materials for use at a sewing workshop.
  - o Two adults attending State Fair session indicated future use as “in FCS class room” and for “Community Education class”.

### COLLABORATORS

- Parents, grandparents, summer interns
- Individuals donating denim jeans

### CONTACTS

- Lavonne Meyer, SDSU Turner County Extension Educator- FCS, PO Box 490, Parker, SD 57053. Phone 605-297-3112.
- Sandra Aamlid, SDSU Minnehaha County Extension Educator-FCS, 220 West 6th Street, Sioux Falls, SD 57104. Phone 605-367-7877.
- Donna Bittiker, SDSU Moody County Extension Educator-FCS
- Laurie Tangen, SDSU Brookings County Extension Educator-FCS
- Ruth Schmeichel, SDSU Corson County Extension Educator-FCS
- Cheryl Jacobs, SDSU Walworth County Extension Educator-CIL

## SD Emergency Preparedness

### working with families Preparing for Emergencies

#### ISSUE

South Dakota is not immune from natural disasters fires, floods, tornados and other. It is important for families to be prepared in the event of such disasters or family emergencies. One aspect of being prepared includes the organization of personal important papers. These papers are needed to determine ownership, file insurance claims and in addressing issues as they occur. Families who take time to prepare for the unknown are better able to recover when disaster strikes.

#### WHAT WAS DONE

- 12 ‘Organizing Important Papers’ programs were presented during the winter of 2007 and the spring of 2008. 4 of these were part of a Basic Estate Planning workshops held in Elk Point, Mitchell, Brookings, and Aberdeen. 5 were held in Minnehaha County and involved 4 church groups and a retired teacher group. Programs were also held in Davison and Jerauld Counties. In Codington County, a follow-up survey was conducted 7 to 10 months following the presentation to identify the progress participants had made in organizing their important papers.
- Emergency Preparedness for Families was taught in Sioux Falls to Volunteers of America as part of their Strategic Planning Workshop.
- State wide news columns and resource information addressing flooding and moisture issues were distributed to educators and disseminated across the state.
- Emergency Preparedness news columns were written and used across the state.
- Grab ‘n Go kits and family emergency plans were encouraged and featured in educational displays to educate the public.
- Fire Recovery group programs and events to support those who lost homes or had damage due to fire were offered.
- Flood victims were given school backpacks, cleaning supplies, and personal mosquito repellents in Western South Dakota.

#### IMPACT

- Survey results on the ‘Organizing Important Papers’ workshops showed:
  - o 77% participants had worked on organizing their family papers after the program
  - o 31% participants had completed the organization of their papers. The papers included financial records, insurance policies, farm records, passport, taxes, banking, copies of birth certificates, copies of credit cards, durable power of attorney, investments, copy of marriage license, wills, deeds, social security cards, photos, family history, vehicle titles and registrations.
  - o 59% participants are working on organizing their important papers
  - o 15% participants had replaced important papers using the handout “Replacing Important Papers in South Dakota”
  - o 8% participants sent their important papers to a family member or friend living outside of the immediate vicinity so there is a copy if an emergency happens.
- There are ongoing requests for programs on how to ‘Organize Your Important Papers’.
- 2 Parish Nurses requested resources to share with fellow Parish Nurses and to distribute to all church members in the Sioux Falls area.
- Comments shared by participants:
  - o “I am so much more aware of the importance of having these documents gathered together and having them at another safe location.”
  - o “This was a great guideline to follow. Everyone should do this. It is well worth it. You made the class very interesting, yet pointed out the importance of being prepared the best we can.”
- Flood victims were provided cleaning kits, water well test kits, and one-on-one assistance with mold issues and concerns. About 75% of families affected have returned home, others relocated and recovery is still in progress along with future flood prevention.
- 90 % of the 33 families who lost homes to fire have accessed the fire recovery educational support programs. They also received a donated quilt and a meal.

#### COLLABORATORS

- North Dakota State University
- Medicare Assistance Program – Personal Record Portfolios
- Hot Springs Chamber of Commerce, Alabaugh Fire Fund, Hot Springs Ministerial Association, US Forest Service, SD Dept of Ag Wild Fire Suppression, SD Dept of Ag Forestry, Fall River County Sheriff and Fall River Master Gardeners

#### CONTACTS

- FCS Extension Educators: Becky Leonard, Spink County; Deb Sundem, Codington County; Ellyn Eddy, Davison County; Julie McCord, Brule County; Karen Slunecka, Faulk County; Leah Burnison, Union County; Marjorie Zastrow, Brown County; Sally Park-Hageman, Fall River County; Ingrid Lindberg, Pennington County; Nancy Pauly, Bennett County; and Sandra Aamlid, Minnehaha County
- YD/4H Extension Educators: LaDonna McKnight, Custer County
- Horticulture Extension Educator: Bill Keck, Pennington County
- Steve Pohl, SDSU Extension Structures & Environment Specialist

## FAMILY & CONSUMER SCIENCES HEALTH & WELLNESS

### FAMILIES EATING SMART AND MOVING MORE AT WORK AND HOME

Families need simple solutions to help them eat smart and move more. Poor diet and lack of exercise are far more likely to threaten the health of families than any biological threat or disease. Worksite wellness programs have the potential to be effective in improving employees’ health status and substantially save health care costs.

#### ISSUE

Obesity and related health risks continue to be a major societal concern for all. Families are extremely busy, often eating out and struggling to find time to eat healthy and being physically active. South Dakota ranks high in the number of women who work outside of the home, so worksites must actively support healthy lifestyles for all employees. With the high cost of health insurance, employers are looking for ways to slow down the rapid increase in health care costs.

#### WHAT WAS DONE

- Workshops/Programs covering the following topics: value of family meals, spotting fad diets, healthy recipe alterations, white whole wheat for nutrition, healthy grilling and building blocks for successful aging.
- Meetings (Worksites, Community Partnerships, Schools)
- Evaluation
- Health Fairs
- News Articles
- Farmer’s Market
- Food Demonstrations
- Healthy Challenges/Competitions

#### IMPACT

- Extension Educators helped organize community partnerships to bring together health & wellness opportunities for citizens of South Dakota communities. These partnerships created the development of community walking tracks, group exercise programs, Farmer’s Markets, worksite wellness coalitions, and outreach to local events such as health fairs.
- Over 1000 individuals have attended Health fair presentations and over 500 of those individuals have participated in the skin cancer awareness screenings.
- Evaluations from programs show that a majority of participants plan on helping their families make better choices when eating out and when preparing meals at home. These families are also reporting an increase in their consumption of fruits and vegetables and implementing basic strategies to prepare meals at home.
- As a result of Extension programming, families and collaborators are able to receive research-based information regarding nutrition education. This information enables families, communities, and worksites to broaden their knowledge and provide appropriate information and resources to family members, schools, and employees.

#### COLLABORATORS

- Aberdeen Area Chamber of Commerce
- Activate Aberdeen
- Ag in Classroom
- Behavior Health Management Systems, Rapid City
- Britton Area Chamber of Commerce
- Dakotah Bank, Clark
- First Bank & Trust, Brookings
- Head Start
- Madison Community Center
- On-Hand Economic Development, Vendors & Producers
- Pioneer Memorial Hospital, Viborg
- Red Cross
- School Districts
- South Dakota Beef Council
- South Dakota Public Broadcasting
- South Dakota State Library
- South Dakota Wheat Commission
- Spearfish Regional Hospital, Spearfish
- YMCA

## CONTACTS

- Family & Consumer Sciences Extension Educators: Sandra Aamlid, Leah Burnison, Becky Jensen, Bobbi Larsen, Ingrid Lindberg, Julie McCord, Lavonne Meyer, Sandra Namken, Sally Park-Hageman, Nancy Pauly, Deb Rombough, Marjorie Zastrow
- Youth Development/4-H Extension Educators: Denise Lingscheit, Audrey Rider
- Primary Contacts:
  - o Sandra Namken, Hamlin County Extension Educator/FCS, PO Box 268, Hayti, SD 57241 (605)783-3656 , Sandra.Namken@sdstate.edu
  - o Suzanne Stluka, Nutrition Education Coordinator, SNF 435, Box 2275A, Brookings, SD 57007, (605) 688-4038, Suzanne.Stluka@sdstate.edu

## EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM (EFNEP)

### IMPROVING THE HEALTH OF LIMITED RESOURCE YOUTH AND FAMILIES SINCE 1969

EFNEP is a nutrition outreach program funded through USDA-CSREES Smith-Lever 3 (d).

EFNEP Educators, known as Nutrition Assistants, delivered research-based lessons to groups and individuals. Lessons actively engage participants in food preparation activities and physical activity.

EFNEP is located in these South Dakota counties: Dewey, Mellette, Minnehaha, Pennington, Todd, Tripp, and Ziebach.

### COST-BENEFIT

National studies show that for every \$1 spent to implement EFNEP, up to \$10.64 is saved in health care costs and \$2.48 in food expenditures.

### ADULT PARTICIPATION AND IMPACT

Participants complete 6-8 lessons that focus on simple solutions to improve their family's ability to eat more meals at home. They learn to:

- Plan nutritious meals
- Increase physical activity
- Stretch their food dollar
- Practice safe food handling

In federal fiscal year 2007, 279 adult participants were taught the EFNEP series of classes.

The ethnicity of the participants is as follows: American Indian 62%, White 33%, Hispanic 3%, and Black 2%.

Of the 279 adult participants; 19% were pregnant or nursing women and 6% were pregnant or nursing teenagers.

These families included 465 children, 92% of whom were 12 years of age or younger.

- 95.7% improved Diets
- 48% improved Resource Management behaviors
- 38% improved Food Selection & Food Preparation practices
- 51% improved Food Safety practices

### YOUTH PARTICIPATION AND IMPACT

Youth participants complete 4-6 age-appropriate lessons at various locations, such as schools, after school programs, day camps, preschools, etc. They learn to:

- Develop good nutrition habits
- Choose healthy snacks
- Increase physical activity
- Practice safe food handling

In federal fiscal year 2007, 2,221 youth participants were taught the EFNEP series of classes.

The ethnicity of the participants is as follows: White 55%, American Indian 32%, Black 8%, Hispanic 6%, and Asian 1%.

Of those youth, 2027 (92%) were between the ages of 5 and 12 years old and 7% were teenagers.

- 49% increased Variety in Diet
- 61% increased knowledge of Nutrition Essentials
- 52% increased ability to Select Low-Cost Nutrition Foods
- 54% improved Food Safety & Food Preparation practices

### WORKING TOGETHER

Cooperation and collaboration are key to EFNEP's success. The South Dakota Cooperative Extension Service works with state, tribal, community and private organizations to identify and teach EFNEP participants. Extension nutrition assistants work with and teach at schools, churches, food pantries, clinics, shelters, rehabilitation centers, community centers, multi-cultural centers and homes, in addition to their local county offices. The list goes on even further! In federal fiscal year 2007, program partners provided \$4,746 cash and in-kind support for local EFNEP classes. Community volunteers also provide tremendous support to EFNEP, with 23 Youth and 276 Adult volunteers. Does EFNEP make a Difference? Absolutely!

### CONTACTS

- EFNEP State Coordinator, Suzanne Stluka, SNF 435, Box 2275A, Brookings, SD 57007, #605-688-4038, Suzanne.Stluka@sdstate.edu

## KEEPING FOOD & FAMILY SAFE

### ISSUE

The health and well being of rural and urban South Dakota families can be related to the health/safety net of the family which includes: foods eaten, effectiveness of hand washing, safety education for children and others, and personal practices to keep bodies healthy.

### WHAT WAS DONE

- 340 youth participated in a session on “Staying Healthy around Animals” at the Save Our Farm Youth (SOFY) Camp held in Watertown and at 5 county fairs in North Central South Dakota.
- “Staying Healthy Around Animals” display was used at the Codington and Hamlin, 4-H Achievement Days. Display was located at the entrance/exit of the livestock area. Educational brochures and sanitizing wipes were distributed to the public.
- 95 youth participated in the Farm Safety Day Camp in Marshall County, Britton.
- Public Safety News Releases were written and used addressing consumer food safety issues and power outages due to the August Wind Storm in Brown, Marshall and Day Counties.
- 9 ServSafe® Food Certification Courses were taught across the state reaching 213 food service workers from health care facilities, senior nutrition programs, local businesses and high school students.
- 75 Food Service Managers from health care facilities, schools and senior nutrition sites participated and passed the “Serving Food Safely in SD Is Good Business Re-certification Course” to maintain their licensing requirements.
- An educational hands-on grilling program was presented for state park campers. The interactive program focused on food safety, healthy grilling choices(shish kabobs, grilling fruit and vegetables, walking apples and grilled bananas), Dutch oven cooking and pie iron cooking.
- Two “Food Safety Updates” reaching 26 individuals, were held in Gregory County. The programs were presented to the Rosebud Sioux Tribe Child Care staff and Rosebud Sioux Tribe Habitat for Humanity in Mission, SD. The programs dealt with safe food-handling techniques when cooking for families or large groups and issues associated with preparing food safely for children.
- “Food Safety for Temporary Food Stands” was presented to 9 adults and 80 youth prior to the Schmeckfest meal in Freeman SD where approximately 4000 people enjoy German foods in March.
- Pork Quality Assurance was team- taught by Lincoln Livestock Educator and Turner County Family & Consumer Sciences Educator to 35 4-H members in Turner and Minnehaha Counties.
- "Storing Food Safely" was taught at Glory House (group home) in Sioux Falls.
- 205 youth at farm safety camps in Gettysburg, Hoven, Ft Pierre and Highmore learned food safety principles of why hand washing is important, the basics of clean, separate, cook, and chill. The keep or toss game was played. The correct way to use food thermometers was demonstrated.
- 30 Senior Citizens received food safety information at the Burke Elderly Nutrition Site.
- Twelve Brule County 4-H club member and 3 Pork Benefit committee members learned food safety principles before working concessions at livestock Judging Schools.
- For the past 5 years, proper hand-washing and food safety about E-coli have been taught to approximately 800 3rd grade students in Hamlin, Codington, Clark, Grant, Deuel and Roberts Counties at Youth Ag Days in Watertown.
- 30 Charles Mix residents learned about "Food Safety & E. Coli in SD"

### IMPACT

The following are results of education program efforts for keeping food and family safe from November 1, 2007 to August 31, 2008:

- The follow-up evaluation of the Codington County “Staying Safe Around Animals” indicated:
  - o On a scale of 1 (low) to 5 (very high), the knowledge of the children prior to the camp on this topic was 3.18; after the camp, the knowledge was 4.18
  - o Comments from parents: “He talks about the animal safety, washing hands and general cleanliness with germs.” “My child has shared the information with family members.”
  - o 71% of the youth/families indicated they wash their hands after playing with animals as a result of attending the SOFY Camp
  - o Observations were made on the number of youth and adults who used a sanitizing wipe upon leaving the livestock area.
- Students at the Farm Safety Camp, Marshall County, Britton learned the importance of hand washing in the home and on the farm. They also identified various deficiencies in hand washing techniques.
- Individuals in Brown, Day & Marshall Counties were faced with power outages for several days with temperatures in the mid 80°F. Information was distributed via the radio as well as local news papers emphasizing safe food storage during a power outage. In one situation a lady called for further information concerning her freezer which was 1/3 full of meat. She was able to determine that she could safely use the items as they had not completely thawed.
- Two individuals completed the ServSafe Exam on-line proctored by the FCS Extension Educator. The individuals were able to open their respectively business in a timely manner, save on travel expenses as well as a full day’s time.
- Health inspections at the Schmeckfest have improved considerably since FCS Extension Educators have done training with the volunteer adults and youth at Freeman Academy. In 2008, no health inspectors visited the Schmeckfest. The committee was told that as long as they continued with Extension training, there was no need for the inspectors to visit.
- ServSafe® was taught to 213 employees of assisted living centers and school cafeteria workers in Marion, Hartford,

Armour, Mitchell, Chamberlain, Huron, Pine Ridge, McIntosh and Dell Rapids along with the Huron High School FACS Food Service Class and Mitchell High School ProStart Class. This also included 76 school cafeteria employees attending the South Dakota Child Nutrition Institute in Sioux Falls. A total of 148 participants received their certification which is required by the state of South Dakota. Participants gained knowledge in time/temperature abuse prevention and how to maintain a safe environment.

- “Serving Food Safely in SD is Good Business Re-Certification Course” was taught to 75 food service managers. Using pre/post test evaluations, 45% increase of those who felt confident calibrating and using meat thermometers and 35% would start to keep time/temp logs.
- Following the PQA training in Turner and Minnehaha County about meat thermometers and minimum cooking temperatures, 4-H members showed a 20% increase of knowledge about cooking pork to safe temperatures.
- 328 pre-school and kindergarten children learned proper hand-washing skills in Hurley, Parker, Tea, and Mitchell using the GloGerm kit, story and song.
- 37 staff members of the Glory House, Sioux Falls, and earned one hour of required in-service.
- According to the post survey results of 205 youth at farm safety camps in Gettysburg, Hoven, Ft Pierre and Highmore:
  - o 90% knew that hand washing was important but this reinforced why it was necessary
  - o 80% became aware of what cross-contamination is and that it can cause food-borne illness
  - o 72 % will use the proper way to use a food thermometer.
  - o 68% will transport food in a cooler to keep it cold
  - o 85% became aware of the two hour rule for leaving food out
- 300 hand sanitizer wipes and 100 brochures were distributed at Hamlin County 4-H Achievement Days. A lot of people, who didn’t worry about washing their hands before eating if water wasn’t readily accessible, used the hand sanitizer wipes. They commented that they didn’t used to worry so much about bacteria and food borne illnesses, but were now making a conscious effort to prevent it, since they were hearing so much about it.
- Last year 3rd grade students at the Youth Ag Days in Watertown were asked if they knew anyone who had e-coli. Three of the children knew of a friend or relatives that had been stricken with it. One of the students responded that they had e-coli themselves and were still having physical effects from it even though it had been over a year since they were first stricken with the illness. This made it very realistic for the students and they took the advice very seriously on proper hand washing and food safety.
- Hand washing posters were posted at fair grounds and city park concessions and facilities (kitchen & restrooms).
- Sun Safety (Dermascan) was taught at the Healthcare Center Fair, Winner, SD and Farm Safety Camp in Bennett County, Health Events in Corsica, Salem, and Howard. 105 High School track students who were sunburned and a mixed audience of 75 Senior Citizens, community members and healthcare staff were scanned and educated about sun protection with display of eyewear, hats, shirts and lotions for protection. This interactive display was request by popular demand. Several repeats from the previous year came back just for the Dermascan screening. One gentleman (pharmacist) had facial skin abrasion work done because of his past skin damage. Several people commented that they had indeed used more sun protection after seeing their sun damaged face/hands from the previous year under the Dermascan. Soy sun protection was distributed courtesy of the Soybean Research and Promotion Council.
- Campers at State Park actively participated in the grilling, sampled the foods, and took the food safety handouts and recipe booklet so they could safely grill their foods at their own camp site.
- The food safety participants learned safety measures with food temperature, time, types and how to maintain a safe environment.
- The 4-H clubs running concession stands are more willing to serve food using gloves and maintaining appropriate temperatures as no one wants to make another ill by their careless actions; they take food safety more seriously as a result of education.
- Food Service workers are washing their hands more frequently, wearing gloves, and making sure they don’t work when they don’t feel well.
- As a result of participating in the food safety presentations in Winner and Burke, 90 percent of participants indicated an increased awareness of various food safety issues and 95 percent of participants stated that they would make improvements in one or more food-safety practices including thawing foods properly, using correct hand-washing techniques, and not leaving food on a counter for longer than 2 hours.
- Approximately 400 3rd – 5th grade students and teacher/parent volunteers from the Rapid City area participated in a mini Safety Camp held at the Black Hills Stock Show. The kids leaned the "High 5" of hand washing and were able to share back the "High 5" of how to wash their hands
- Seven 4-H members ages 12-16 from the Hot Springs area prepared and planned a program and meal for 37 individuals who lost homes in 07 fires. Hand washing, safe food temperatures, and proper preparation methods stressed on each stage of food preparation, service and clean up.
- Questions were answered relating to canned foods that have been in basements that flooded in Pennington County this spring.
- Food Preservation Displays highlighted safe home canning practices at Achievement Days with 300 Food preservation handouts distributed.
- 45 pressure canner gauges were tested for accuracy and 18 gauges needed to be replaced.
- 47 questions on food preservation were answered.
- 157 food safety questions were addressed.
- 68 food safety news columns were written and appeared throughout newspapers in the state.
- 424 families received information on West Nile Virus through newsletters.
- Steps to lower the risk of foodborne illness in child care facilities were received by 84 child care provider attending the Child Care Conference in Mitchell.

## COLLABORATORS

Midwest Dairy Council; Britton School District, SDSU, Avera St. Luke’s Hospital; South Dakota Department of Health, Freeman Academy School, Public Health Department, Glory House; Nancy Heylens, Game Fish and Parks; SDSU Cooperative Extension Service; RST Daycare, and Burke Elderly Nutrition Site; RST Habitat for Humanities; Fall River County 4-H Member’s Assembly, Hot Springs Ministerial Association, Local Newspapers; Ag in the Classroom; Huron High School; Mitchell High School; Mitchell Headstart; First United Methodist Church Parish Nurse, South Dakota Soybean Research & Promotion Council, Avera Queen of Peace Hospital and outreach clinics.

## CONTACTS

FAMILY & CONSUMER SCIENCE EXTENSION EDUCATORS:

Sandra Aamlid, Minnehaha County; Linda Burg, Beadle County; Ellyn Eddy, Davison County; Sally Park-Hageman, Fall River County; Bobbi Larsen, Clark County; Becky Leonard, Spink County; Julie McCord, Brule County; Lavonne Meyer, Turner County; Sandra Namken, Hamlin County; Nancy Pauly, Bennett County; Ruth Schmeichel, Corson County; Ann Schwader, Tripp County; Karen Slunicka, Faulk County; Deb Sundem, Codington County; Laurie Tangen, Brookings County; Marjorie Zastrow, Brown County and Joan Hegerfeld-Baker, SDSU Food Safety Specialist

## KIDS ON THE PRAIRIE...DO YOU KNOW WHAT’S GROWING IN YOUR BACK YARD?

South Dakota youth play and enjoy the outdoors but, until a program like this comes along they aren’t as aware of their environment and the impact it has on their life. The native plants, grasses and soil types determine what agriculture is native to an area. The beauty of plants can be transferred to dyes for clothing or in artistic displays.

## ISSUE

Today’s youth need opportunities to learn about the importance, diversity, and impact of the native plants in our local communities. Provided with the opportunity youth will develop an appreciation and understanding about agriculture and the environment they live in. The “Kids on the Prairie” programs targeted all youth age 8 and older interested in plants and nature.

## WHAT WAS DONE

- Extension Educators in Aurora, Brule, Hanson, Jerauld, and Sanborn counties worked together with other partners to plan and organize “Kids on the Prairie” three 3-hour sessions at locations in Chamberlain, Plankinton, and Forestburg.
  - o Session One – Explored plants, flowers and native grasses. Youth learned about soil types and the plants that like each type as well as digging, identifying, and collecting plants to clean and dry in presses for range and pasture collections/exhibits.
  - o Session Two – Used plants for natural dyes on clothing, geocaching treasure hunt using the GPS receiver and continued learning with plant press process.
  - o Session Three – Mounted and identified plants to exhibit. Used fresh cut leaves of trees and plants to apply art principles in creative artistic displays using paints.
- Follow-up sessions were held to answer questions and continue with projects for exhibit.

## IMPACT

- 61 youth in the 3 communities participated in “Kids on the Prairie” and 50% of the youth were current 4-H members and others were interested in joining after the experience.
- Fifteen range and plant collections were exhibited at the county level. Four collections went on to the SD State Fair and also received purple ribbons.
- One 4-H member used his experience to do a demonstration on the plant press process and told how to start a collection based on this experience receiving a purple ribbon on it at the SD State Fair.
- Several artistic creations were exhibited as visual arts entries at the county and state level.
- Parents and other family members became involved helping the youth with their plant collections.
- Parents reported an increased awareness of plants from their children.
- Comments shared by participants:
  - o “I went into the pasture and watched our cattle to see what they were eating and chose those to add to my collection and learned a lot about them.”
  - o A parent reported, “I never saw my son get excited about anything until he went to this program, now he digs up everything and can’t wait to look them up! It is great finding out what interests he has!”
  - o “Wow! I can’t believe red cabbage turns purple and then the shirts dye blue.”
  - o “I watch my Dad use the GPS in his tractor, I didn’t know they made them small enough to walk around with – this is neat!”

## COLLABORATORS

- Monsanto
- Sonya Kroupa, The Quilt Shop, Chamberlain
- Chamberlain Elementary School PAWS staff

## CONTACTS

- Helen Geppert, SDSU Aurora County – YD 4-H Educator
- Julie McCord, SDSU Brule County – FCS Educator
- Irene Graves, SDSU Sanborn County – Agronomy Educator
- Alice Nickelson, SDSU Hanson County – YD 4-H Educator
- Heidi Doering-Resch, SDSU Jerauld County – Livestock Educator
- Mark Rowan, SDSU Lincoln County – Agronomy Educator
- Brule County Master Gardeners – Joann Giedd, Gladys Wells, and Carrol Graff
- LJ Osborne, Youth Development 4-H State Specialist
- Kathy Reeves, Youth Development 4-H State Specialist

# YOUTH WELLNESS

## ISSUE

The prevalence of overweight youth ages 6-11 has more than doubled in the past 20 years and for adolescents ages 12-19, overweight prevalence has more than tripled. Children who are overweight are at risk of other serious health conditions, psychological problems and teasing from other children, and are at increased risk of being overweight or obese as an adult.

## WHAT WAS DONE

Family and Consumer Sciences (FCS) and Youth Development/4-H (YD/4-H) Extension Educators have been responsive in addressing the youth obesity epidemic by forming partnerships with schools and other organizations to provide a variety of research based educational programs to youth in South Dakota.

Community Outreach Programming

- Health Fairs: 700 3rd grade students in the Rapid City area were presented with information on sun safety at the Rapid City Agriculture and Natural Resource Day event. Hand washing was the topic of demonstration for approximately 400 students in the 3-5th grade at the Black Hills Stock Show.
- Feeling Good Walking Program: During the school year, approximately 193 youth in grades K -6 from the Miller school participate in an Extension coordinated walking program where youth walk each morning before classes in the school gym. Volunteers record the number of laps and the youth can receive motivational toe tokens as incentives. The walking program is extended during the school year with participants being provided with a booklet to record miles walked in addition to other health tips. Approximately 35 youth stayed active during the summer months by participating in this program. Youth who walked the number of miles from Miller to Huron were awarded t-shirts.
- Spending Your Calorie Salary: 44 girl scouts from the Pierre area, 5 Head Start parents from Potter and Faulk counties and 4 daycare providers from Hughes and Faulk participated in the Spending Your Calorie Salary program. The program focused on portion control, reading food labels, increasing physical activity, and tips on making healthier food choices. School Based Programming
- Diabetes Prevention: 53 elementary students in and near the Rosebud Reservation participated in a cumulative 6 hours of obesity and diabetes awareness education and prevention.
- Osteoporosis Prevention & Healthy Choices: The “Vary Your Dairy” program enabled youth to make healthier food choices, including dairy foods while fostering creativity in the process. 90 youth ages 9-12 from the Belle Fourche and Spearfish afterschool programs participated in the program.
- KidQuest: 371 youth in grades 5th and 6th learned life skills through 6-8 interactive nutrition education and physical activity lessons along with take home Quest challenges and rewards during the 2007-2008 school year. Schools participating were: Brookings, Madison, Arlington, De Smet, Howard, Florence, Waverly, Belle Fourche, Ipswich, Holy Cross, Miller, Faulkton and Highmore. Extension Educators are the primary instructors of the program. However, in 3 school sites (Howard, De Smet, Belle Fourche) funding from a SD Department of Health grant allowed for the training and implementation of teens as teachers KidQuest program.

## IMPACT

Community Outreach Programming

- Feeling Good Walking Program
  - o ”Excellent program – kids come into the classroom ready to learn.” --Teacher comment
  - o ”Program was fun – it got the whole family moving!” “We began walking every night with the kids.”—Parent comments
- Spending Your Calorie Salary
  - o 3 month post survey results showed youth: •21% have decreased the amount of pop/sweetened drinks consumed •15% have started to read labels •10% increased physical activity •12% have decreased junk food
- 5% increased fruit intake •28% have gone to the healthysd.gov website for information

School Based Programming

- Diabetes Prevention
  - o Students reported an increase in asking for healthy snacks such as fruit, vegetables, and dairy products at home.
  - o 90% of the students discovered that they like broccoli and cauliflower.
- Osteoporosis Prevention & Healthy Choices
  - o Materials purchased through grant funding will help participating afterschool programs sustain wellness education programs.
  - o Newsletter provided families with the chance to discuss healthy food options and dairy choices.
- KidQuest

Pre and Post youth surveys were completed by 326 KidQuest participants. Survey results revealed:

- o 13% increase in consuming dairy 3 times per day or greater as recommended.
- o 14% increase in consuming fruits and vegetables 3 or more times per day.
- o 9% decrease in consuming sweets greater than 1 time per day.
- o Youth who consumed breakfast every day per week as recommended increased by 10%.
- o Using the food label sometimes or often to make food choices increased by 12% with food label knowledge questions increasing in correct responses by 15%.

- o 10% decrease in watching TV/playing computer games for more than the recommended 2 hours or less per day.
- o 60 minutes or more of daily physical activity is recommended for youth. Survey results revealed a 10% increase in the youth physical activity of 1 hour or more per day.
- o Parent survey comments: “We try not to eat as large of portions now”, “This program helped my child to become more aware of choosing healthier foods”,
- o Teacher comment: “They have discussed healthy snacks they have been eating at home. They have been making sure to eat the fruits and veggies in their school lunch!”

## COLLABORATORS

Carr Chiropractic, Community Volunteers, Hand County Avera Hospital, SD Ag in the Classroom, Afterschool Programs in Todd, Mellette and Jones Counties and the following school districts: Brookings, Madison, Arlington, De Smet, Howard, Florence, Waverly, Belle Fourche, Ipswich, Holy Cross, Miller, Faulkton, Highmore and Spearfish

## CONTACTS

Family & Consumer Science Extension Educators:

Becky Jensen, Lake County; Karen Slunecka, Faulk County; Deb Sundem, Codington County; Marjorie Zastrow, Brown County; Deb Rombough, Lawrence County; Linda Burg, Beadle County, Becky Leonard, Spink County; Sally Park-Hageman, Fall River County

4-H Youth Development Extension Educators:

Karen Beranek, McCook County; Denise Lingscheit, Hand County; Andrea Klein, Hyde County; Jodi Loehrer, Codington County; Heather Fairbanks, Mellette County;

# HELPING BUILD LIFE SKILLS WITH TODAY’S YOUTH

## ISSUE

Youth need encouragement to try new activities, learn new skills and explore career opportunities. At a time when schools are filled to capacity with curriculum and families are busily working outside the home, youth are losing opportunities to learn basic life skills. Family & Consumer Science Extension Educators have the knowledge base and the ability to help youth attain the basic life skills needed now and in years to come. These new skills improve self-esteem and believing in one’s capabilities, the ability to learn on one’s own, and to have confidence and desire to be a life-long learner.

## WHAT WAS DONE

- Foods and Nutrition
  - o 66 students from the Aurora Plains Academy (a youth facility) in Plankinton, SD participated in the Fantastic Foods series (6 lessons).
  - o Over 130 8th grade girls participated in a youth learning day at Southeast Technical Institute in Sioux Falls. Participants used MyPyramid, food labels and ingredient lists to make informed decisions about energy drinks.
  - o 12 Clark County youth, ages 8-10, participated in a Kids Cooking Camp (3 sessions).
  - o Students learned the sugar content of various beverages at the Brandon Health Fair.
  - o 7 Fall River 4-H members ages 12-16 organized a meal for 37 fire victims who lost their homes in the 2007 forest fire. The youth learned meal planning, food preparation and food safety skills.
  - o 16 4-H members participated in jam/jelly workshops
  - o 71 4-H members participated in Special Foods Workshops
- Career Exploration and Job Skill Training
  - o Parker High School students participated in a Teamwork workshop at the school’s Career Fair.
  - o Over 220 Bennett County junior and senior high students participated in a Career & Life Skills Awareness Day full of hands-on activities and opportunities to learn life skills.
  - o Bennett County 4-H Leaders incorporated career information into their 4-H Fun Day.
  - o Over 100 youth and chaperones participated in three separate day camps in the Badlands National Park highlighting resource management and outdoor career opportunities.
- Clothing Selection and Sewing
  - o Sewing & Accessorizing workshops
- Interior Design
  - o 11 youth took part in an educational tour of the local furniture store and created design boards for a bedroom.
  - o 9 youth experienced 5 different faux painting finishes in a 4-H Workshop.

## IMPACT

- Foods and Nutrition
  - o 66 students learned how to be healthy using MyPyramid, food preparation skills, food career opportunities and how to communicate effectively at the Aurora Plains Academy.
  - o Students are more aware of how much sugar they are consuming in energy drinks and how to tell by reading the nutrition facts label and the ingredients list.
  - o Kids Cooking Camp
- All participants reported an increased willingness to try new foods and choose healthier food alternatives.
- Many reported spending more time helping in the kitchen at home.
- “I learned that things I didn’t like can be made differently so I like them.”
- “Healthy foods don’t have to be gross.”
- “My son is helping more in the kitchen since camp and now I feel like I can actually trust him to do more things.”
  - o “I didn’t realize what it took to feed a large group safely.” - 4-H member after fire victims meal.
  - o Jelly Workshops
- Youth reported learning how to measure ingredients correctly, watching items on the stove carefully and how to properly remove the foam.
- “I plan to make some more at home.”
- “How do I make other kinds of jelly?”
  - o 63 of 71 who attended Special Foods workshops participated in a Special Foods contest
  - o Youth learned how to use MyPyramid.gov to determine the number of servings needed for their age and activity level.
  - o Youth could list and discuss the functions of the six major nutrients present in the food groups and to those found in the food prepared and the menu.
  - o Youth could recognize and categorize food in their recipe into the food groups.
  - o Youth could discuss key nutrients and the body’s need for these nutrients.
  - o Youth demonstrated the ability to plan menus and coordinate an aesthetically pleasing table setting.

- Career Exploration and Job Skill Training
  - o Youth learned that the ability to do something is not always as important as the ability to get along with others in Teamwork workshop.
  - o Career and Life Skills Awareness Day
- Teachers and youth showed an overwhelmingly positive response to the program and indicated they would like it repeated.
- “I thought this was a good day because it helps those who don’t know what they want to do in the future. It gives us more ideas to explore that we may not have heard of before.” - student
- “I am going to try harder and put more effort into my grades and stop slacking.”
- “Since I am not from this area originally, it helped me become more familiar with our community. I feel it was a very worthwhile day and should continue.” - teacher
- “Was great that so many graduated from Bennett County and could tell their story. All presentations stressed to take school seriously and stressed pursuing further education.” – teacher
  - o Badlands Adventure
- “My son learned more about the Badlands, then I have known” - parent
- “It was a great experience for kids to go to the Badlands National Park. Many had not ever been to the park, even though it is close by.” – After School director
- Clothing Selection and Sewing
  - o 51 youth used their decision making, problem solving, knowledge and creative skills to construct a wearable garment.
  - o Participants showed an increase in self-confidence when project was completed.
  - o Youth reported learning how to coordinate materials and accessories to go with the finished product.
  - o Youth reported learning new skills such as putting in an elastic waistband and ‘stitching in the ditch’.
  - o “I will not entering my pants at the State Fair, because I want to wear them.”
  - o “I plan to sew pants for my brother and sisters.”
- Interior Design
  - o Participants were introduced to the new lots in the 4-H Home Environment project area.
  - o 75% of the youth entered a retail furniture store for the first time by doing this project.
  - o Youth experimented with techniques used to give new life to a piece of older furniture or to change the finish on their walls.

## COLLABORATORS

Natural Resources Conservation Service; Codington County 4-H parents and leaders; Martin Chamber of Commerce; Fabric & Textile Ware House, Mitchell; Hot Springs Ministerial Association; Bennett and Jackson County After School programs; Karen Klinker, Avera Queen of Peace Dietary Department, Mitchell; Fall River County 4-H Leaders Association; National Park Service; City of Burke; Farm Service Agency; Fall River County 4-H Members Assembly; Gregory Schools; Mitchell Sewing Center; Karen Lambert, Montgomery Furniture, Mitchell; Bennett County School Administrators & Teachers; The Heartland Quilters Guild, Mitchell; Early Childhood Training Network, Pierre; The Pin Cushion, Mitchell; Bennett County Extension Board; Bonesteel and Burke Schools; Bennett County Volunteers; Gwen Effling, Sanborn County 4-H volunteer; and participating county Extension Offices

## CONTACTS

Extension Family & Consumer Science Educators:

Sandra Aamlid, Minnehaha County; Ellyn Eddy, Davison County; Bobbi Larsen, Clark County; Julie McCord, Brule County; Sandra Namken, Hamlin County; Sally Park-Hageman, Fall River County; Nancy Pauly, Bennett County; Ann M. Schwader, Gregory County and Deb Sundem, Codington County

Extension Educators – 4-H/ Youth Development, Livestock and Agronomy

Vera Boje, Jackson County; Shawn Burke, Shannon County - Pine Ridge Reservation; Heather Fairbanks, Mellette County; Adele Gelvin, Haakon County; Irene Graves, Sanborn County; Sandy Huber, Bennett County; LaDonna McKnight, Custer County; Alice Nickelson, Hanson County

# HEALTHY AGING IN SOUTH DAKOTA COMMUNITIES

## ISSUE

South Dakota is an aging state and currently has the 7th oldest population in the nation. 14.3% of our total population is 65 or over. South Dakota’s percentage of seniors will only increase as life expectancy is extended and the baby boom population settles into retirement age. With offices in each county giving access to the varied communities and rural populations often underserved by other efforts, County Extension Educators have opportunities to make an impact on healthy aging. By addressing issues such as access to services, nutritious meals, health and fitness, transportation, and social networking, Extension can help create aging-friendly communities.

## WHAT WAS DONE

Through funds from CSREES-USDA, the South Dakota Cooperative Extension Service received grant dollars focused on developing the use of coaching to improve rural seniors’ health. CES budgeted some of these grant dollars for projects in 10 rural South Dakota communities. The intent of this funding was to support rural communities wanting to minimize community barriers that discourage adults from making healthy choices and to implement changes in those communities. The “Collaborating for Change” grant project was carried out by Family and Consumer Science educators Bobbi Larsen, Sandra Namken, Nancy Pauly, Sally Park-Hageman, Linda Burg, Ellyn Eddy and community volunteers in these sites around South Dakota – Willow Lake, Hitchcock, Wolsey, Buffalo Gap, Oelrichs, Estelline, Lake Norden, Martin, Davison County and Sanborn County.

- 6 FCS Educators and 5 volunteers were trained by Linda Hedberg, Life Stories Coaching, in the use of Community Coaching techniques and subsequently used the skills to interact effectively with residents of rural communities.
- Community volunteers, core advisory groups, and part-time paid staff were recruited.
- Community forums were held to identify needs of aging population and aging communities. Many informal conversations took place at various events and local settings in communities to hear concerns, identify needs, and “coach” toward clarifying a vision for healthy aging.
- Responding to identified needs, each community planned projects and applied for up to \$3000 in grant funding each for wellness centers, walking paths, septic systems, hand railings, interactive games, and various educational programming efforts.
- Pre- surveys and post-surveys were conducted and other research components are ongoing with SDSU faculty Renee Oscarson, principal grant writer; Sally Gillman, research; and Suzanne Stluka, funding. Evaluators for the project interviewed educators, volunteers, participants, and others to gather relevant research data.

## IMPACT

Coaching facilitated meaningful relationships between educators, volunteers, and communities. Each community has implemented change resulting in greater health for seniors. Through the core action groups, communities have mobilized volunteers and agencies in the creation of aging-friendly communities.

- Willow Lake: \$3000 in grant funding has purchased a recumbent bike for community wellness center benefiting those with knee surgery rehabilitation and arthritic joints. Bingo is held twice monthly for social interaction with an average of 12 senior citizens attending regularly. The “60+ Dining Program” implemented when the local grocery store closed averages 10 participants daily and the newly started Farmer’s Market insures healthy aging by meeting fruit and vegetable needs.
- Hitchcock: \$3000 in Community Change grant funds helped purchase machines for a renovated wellness center benefiting 60 persons in a community of only 100 residents. Users report increased physical activity, more social interaction, and personal financial savings by using center equipment rather than individual purchases for home use. The local fire department teamed with Collaborating for Change volunteers to purchase smoke alarms or batteries and distribute to every home in the local fire district, maximizing the response efforts by fire fighters due to familiarity with each home visited during distribution.
- Wolsey: Grant funds of \$3000 helped establish a wellness center with machines for toning and exercise. Average daily use is 15 persons since opening in early summer. One woman reported time and money savings in using the machines for rehabilitation after hip surgery, eliminating her 30-mile daily trip to a larger hospital setting. Those using the center serve as positive aging-friendly role models for others in the community and partnerships are evolving with the local senior center and city council.
- Buffalo Gap: \$3000 grant has made possible the installation of a septic system for the City Auditorium—an important building to draw people together for wellness and social activity. Monthly core planning meetings, through the Community Change grant, look at healthy aging needs of the community. Partnerships have been formed with the city of Buffalo Gap, addressing future donations, grant applications, and calendaring for ongoing wellness and social events in the newly renovated city auditorium.

- Oelrichs: A walking track was completed in the community using \$3000 in Community Change grant funds and partnering with the local school and Fall River County commissioners for additional services. “Healthy U Club” met at the school for 15 weeks of walking with pedometers provided by the grant, fitness-related classes, check-ups, and nutrition information, all leading to healthy lifestyle changes by each participant. The club serves as a core planning group for future impact on the aging-friendly community.

- Estelline and Lake Norden: \$3000 in grant funds in each community purchased two specially designed exercise chairs to allow those with limited mobility and balance to strengthen their muscles and increase mobility through resistance exercise. Social interaction, exercise, and mental alertness for the aging population are sharpened through the purchase and use of a Wii – a technology based interactive computer game. Large print cards and card holders result in easier card playing for those with limited vision and arthritis.

- Davison and Sanborn County: 30 aging adults learned memory aerobic techniques to prevent loss of brain functions and preserve their memories. 53 adults are more aware of hearing loss and sensitive to the use of devises to regain hearing. 20 adults learned the importance of proper footwear and clothing selection while doing physical activity.

- Martin: The \$3000 grant funds are going towards a walking path, as there are no sidewalks in the community except for the 2-block main street. Eliminating that barrier to safe walking and increasing exercise leads to a healthier, aging - friendly place. A hand rail from the street up to the community drug store will increase access for the aging population.

## COLLABORATORS

College of Family and Consumer Sciences, SDSU, Volunteer coaches – Lucille Birkholtz, Deb Frahm, Darlys Kloss, Leona Klinkner, Cynthia Johnson; Extension Offices from participating counties, Hitchcock Community Planners, Willow Lake City Council, City of Buffalo Gap, City of Oelrichs, Hitchcock Fire Department, Fall River County Commissioners, Oelrichs School, Hitchcock Fire Department, local senior centers, and core planning group members from each community.

## CONTACTS

Linda Burg, Beadle County Extension  
Bobbi Larsen, Clark County Extension  
Sally Park-Hageman, Fall River County Extension

Ellyn Eddy, Davison County Extension  
Sandra Namken, Hamlin County Extension  
Nancy Pauly, Bennett County Extension

## HELPING PEOPLE MAKE THE MOST OF MEDICARE PART D

### ISSUE

Individuals continue to seek assistance regarding coverage and enrollment in Medicare Prescription Drug Plans (Part D). The vast majority of options offered by Medicare Part D have resulted in this need for assistance. Medicare Part D is complicated to the point of being a source of stress and confusion. The Medicare Part D-eligible individuals and their families have turned to SDSU Cooperative Extension Service for assistance in getting the full benefit of saving spendable income.

### WHAT WAS DONE

- One-on-One Education/Consultations
- Group Educational Programs
- Informational Booths at Public Events
- Training Sessions for other Professionals/Volunteers

### IMPACT

- Across South Dakota, Medicare beneficiaries saved \$11,225,211 in drug costs, including insurance premiums and co-pays, from November 2007 to September 2008 by comparing and switching drug plans with the aid of SDSU Cooperative Extension Service (SDSU CES) personnel.
- With the prompting of newspaper and radio releases 947 Medicare beneficiaries actively managed their prescription drug costs by seeking out education and assistance from SDSU CES.
- Family & Consumer Science educators continued to respond to the emerging needs associated with Medicare Part D, including answering questions, assisting beneficiaries required to change insurance providers because of their current providers withdrawal from the program, and championing the rights of seniors whose Med D plan was not functioning currently by providing troubleshooting assistance.
- In addition to working with beneficiaries directly, FCS Educators provided support and training to local Department of Social Services and Human Service Agencies who then assisted beneficiaries. Twenty-four individuals received training in this manner.
- Outreach continues to evolve, with Educators becoming more creative and pro-active in reaching those who may be in need of assistance. Examples include in-home visits to home bound beneficiaries for plan comparisons, distributing packets at Senior subsidized housing facilities, and Mother & Father’s Day brochures, setting up “outreach” offices in libraries and other remote locations, as well as having educational booths at Home Shows and community events.
- Development of Comparing Prescription Drug Plans: A Medicare Website How To Guide to navigate the Medicare website for beneficiaries and their families.
- Reduction of anxiety level for individuals and families impacted by Medicare Part D.
- Networking within communities. The SDSU CES is recognized as a leader and partner in assisting individuals with Medicare Part D enrollment and concerns. Referrals have been received from Social Security Administration and Department of Social Services.
- Beneficiaries continually express gratitude to have someone available to assist them. Responses include: “I was on the phone for over an hour trying to change plans – thank you for helping with this change,” “You have pointed out services and savings I would not have known about,” “I have been hearing good things about you helping with Medicare Part D – so I told my wife she better get in here,” as well as the simple heartfelt, “I am so glad you are here to help me.”

### COLLABORATORS

- Senior Health Information & Insurance Education Program (SHIINE)
- SD Senior Medicare Patrol Program (SMP)
- Centers for Medicare Medicaid Services (CMS)
- Department of Social Services-Adult Services & Aging
- Social Security Administration
- Local radio stations & news media
- Lake Area Technical Institute, Watertown
- Retired Senior Volunteer Programs
- Senior Citizen’s Centers
- County Libraries
- AARP
- Local Pharmacies

### CONTACTS

- South Dakota Cooperative Extension educators/specialist involved: Tracey Lehrke, Karen Slunicka, Deb Sundem, Marjorie Zastrow, Bobbi Larsen, Nancy Pauly, Sally Park-Hageman, Julie McCord, Sandra Namken, Ellyn Eddy, Becky Leonard, Linda Smith-Burg, Deb Rombough, Liz Gorham, Ruth Schmeichel, and Sandra Aamlid.

## CHANGING ECONOMY: TIPS & TOOLS FOR INDIVIDUALS & FAMILIES

### ISSUE

Individuals and families in South Dakota are currently enduring challenging economic conditions. Rising food and fuel costs are having a major financial impact in South Dakota and nationwide.

- The Consumer Price Index for food in the United States increased by 4 percent in 2007, the largest annual increase in retail food prices since 1990. The Department of Agriculture’s Economic Research Service projects retail food prices will increase by another 4 – 5 percent in 2008.
- Fuel costs for the average American family with children increased an estimated 131 percent from 2001 to 2008. Income is not keeping pace with the rising costs of food and fuel.
- The median household income in South Dakota was \$42,569 in 2005, a decrease from the 1999 median household income of \$43,910.
- In 2005, 14 percent of South Dakotans lived in poverty. South Dakotans are struggling to meet their financial obligations.
- South Dakota property foreclosures increased 18.18 percent from February 2007 to February 2008. While this is significant, it pales in comparison to the national increase of 59.8 percent in the same time frame.<sup>5</sup>
- There were 1,366 bankruptcy filings in South Dakota in 2007.

### WHAT WAS DONE

- Media including press releases, public service announcements and newsletters
- Workshops, classes and seminars
- Booths and displays at farm shows, community events, and county fairs
- 4-H Consumer Education Projects and Judging

### IMPACT

- As a result of educational programming at the Burke Elderly Nutrition Program
  - 85% of participants stated they had learned new ways to save money when shopping for food
  - 100% of participants responded that they set financial goals.
- 30 families and 20 children were impacted by the “Building Strong Families” programming for the Rosebud Sioux Tribe Habitat for Humanity families in Mission, SD. In addition, one-on-one financial counseling was provided to 7 Habitat for Humanity families. Topics covered included Feeding Your Family without Starving Your Wallet and Financial Wellness for Families.
- 12 individuals in Brookings participated in “Money Matters”, a four session series covering budgeting basics, credit basics, digging out of debt, and saving for the future.,
  - 3-month post surveys revealed that 50% of participants started tracking income and expenses more closely, 44% took steps to increase retirement contributions, and 67% took steps to reduce debt.
- Youth members of the Whitewood Babysitting Club were educated on the basics of money management and how to save money for future wants and needs.
- Statewide news columns were distributed promoting the Economic Stimulus Package. As a result, South Dakota citizens, and particularly senior citizens, were better able to understand the process to apply for the Economic Stimulus Package and had resources to help them apply.
- 46 participants in the “When Expenses Rise: Living on Your Income” program offered as part of an AARP Regional Financial Workshop in Rapid City reported significant increases in knowledge in their ability to develop a budget, write goals, decrease debt, track expenses, and save money in a variety of ways.
- Over 400 individuals were reached through food preservation workshops taught in Brookings, Clear Lake, Estelline, Hayti, Sioux Falls, Vermillion, Watertown and Huron (at the State Fair). Families are turning to preserving their own food as a way to stretch food dollars.
  - Pre and post test evaluations showed that participants at the Vermillion workshop demonstrated a 21% increase in knowledge of hot water bath canning, and a 23% increase in knowledge in pressure canning.
  - Participants in the Clear Lake, Estelline, Hayti, Watertown, and Huron workshops reported that 65% of the participants were using information they learned to safely preserve foods. Sandra Namken, Extension Educator reports, “Since the programs, the amount of canning and freezing questions received have doubled, and nearly half of the people in attendance at programs are first time canners.”
  - Hands-on demonstrations on freezing and canning foods were offered at area farmers markets.
  - Comment from pressure canning class in Sioux Falls, “I can over 1000 jars a year and I still learned new techniques from you.”
  - A hands-on workshop was presented to participants of the Family Self Sufficiency Program in Brookings. 7 people reported increased knowledge of shopping more wisely and preparing healthy foods on a budget.
  - A post survey of attendees of a presentation at the State Fair on Stretching Your Food Dollar demonstrated significant increases in knowledge on tracking income and expenses, developing and using a budget, and stretching the food budget.

## COLLABORATORS

Ace Hardware of Sioux Falls, Brookings Farmers Market, East Central Multi-District of Brookings, Family Self Sufficiency Program of the Brookings County Housing and Redevelopment Corporation, Rosebud Sioux Tribe Habitat for Humanity and the Rosebud Sioux Tribe Housing Authority, South Dakota State Fair

## Contacts

SDSU Extension Family & Consumer Science Educators:

Sandra Aamlid, Minnehaha County; Donna Bittiker, Moody County; Leah Burnison, Union County; Ellyn Eddy, Davison County; Sharon Guthmiller, Yankton County; Becky Jenson, Lake County; Bobbi Larsen, Clark County; Ingrid Lindberg, Pennington County; Julie McCord, Brule County; Lavonne Meyer, Turner County; Sandra Namken, Hamlin County; Sally Park-Hageman, Fall River County; Debra Rombough, Lawrence County; Ann Schwader, Gregory County; Karen Slunecka, Faulk County; Laurie Tangen, Brookings County and Marjorie Zastrow, Brown County.

SDSU Extension 4-H/Youth Development Educators:

Karen Beranek, McCook County; Marta Lemke, Lake County and Rose Marie Stee, Brookings County

SDSU Extension Specialists:

Liz Gorham – Family Resource Management

Joan Hegerfeld-Baker – Food Safety

# 4-H Youth Development



## YOUTH ENGINEERING PROJECTS MAKE MATH EXCITING

Hands on engineering projects help develop math skills and provide an opportunity for youth to experience how math can be used to create challenging projects they can share with friends.

### ISSUE

Math is frequently seen as a dull subject and not much fun. According to the National Assessment of Educational Progress, the percentage of SD 4th graders who performed at or above the proficient level in math (proficient level was 3 on a 1-4 scale) was 35% in 2005. 41% of SD 8th graders performed at or above the math proficient level in 2005. These statistics along with much local school focus on reading and math due to Dakota STEP test measures; lead to a need for quality, educational Science and Engineering and Technology opportunities for youth. Exposing youth to engineering projects utilizing and developing math skills can enhance the interest in and mastery of math skills.

### What Was Done

94 youth (3-8th grades) from 16 different countries and over 725 youth from across the state participated in hands on engineering activities. Changes in practices, attitudes, knowledge, and skills were present in activities. 100% of youth participated in activities that stimulated their creative abilities by having them complete projects that involved designing and building projects. Some of the projects included:

- Electronic device dismantling to design a car that completes a course.
- Exploration of engineering careers and toy designers.
- Basic building concepts, the relationship between speed, distance and mass.
- Designing and building simple and compound machines using K’NEX building pieces.
- Designing and engineering amusement park rides using K’NEX pieces.
- Exploring Bridge functions, bridge designs and building bridges.
- Super car- how to build a battery powered car complete with complete electric circuits.

### IMPACT

- The youth involved in the building projects increased their engineering and building skills through hands on activities. Many shared what they had learned with parents and others. Several of the students took basic principles and added features such as gears & motors to enhance designs.
- Youth considered at-risk personally and academically were able to shine, teaching other youth how to construct and alter their Ferris wheels and buggies to increase efficiency and accomplish new things.
- During Bridge building activities students drafted ideas to try different food items to build different types of bridges they had just learned about.
- The mentoring skills were exhibited with the older students after the second week of activities as the older youth assisted younger students and helped them build the bridges
- Youth became engaged and wanted to keep working on projects. The students also exhibited great inquiry into the themes that were presented and asked many questions which were investigated or researched. Youth were excited about the project and expressed interest in other areas. One 4-H’er modified his design and made a three engine plane with propellers and wheels without any design or plans.
- Youth were taught basic steps with simple and compound machines and proceeded to design their own simple and compound machines. Many shared what they had learned with parents and others. Teachers were appreciative of the programming and have lined up programming for the next school year.
- The school teachers appreciated the review of simple and compound machines as the youth prepared for the state standardized testing. One teacher used the K’NEX as a reward for her classroom for good behavior and attendance.
- Parents in an after school program inquired about purchasing K’NEX, stating they were having a hard time finding K’NEX sets for their children’s Christmas list.
- 2 children from Korea participated in a K’NEX program, and were fascinated by the way the K’NEX worked. They later recognized the creations in a later tour of Washington Pavilion. Collaborators
- Wessington Springs Community programs
- Sanborn Central, Kimball, Plankinton, Tripp, Todd, Gregory County, and White Lake Schools
- Grass Ranch and Upland Hutterite Colonies
- Numerous 4-H clubs throughout the state
- Yankton & Minnehaha SET Clubs
- Enemy Swim Day School, White Lake, Wessington Springs Afterschool Programming
- Sioux Falls Multi-Cultural Center
- Wesley United Methodist Church, Sioux Falls
- The South Central Cooperative Drug Prevention 8th grade Career Fair, Wagner
- 2008 Regional Career Fair, Freeman Academy
- Rosebud Sioux Tribe Drug & Alcohol Center
- Watertown, Wessington Springs and Winner Farm & Home Shows

### CONTACTS

- 4-H /YD Educators: Michelle Brandenburg; Helen Geppert, Audrey Rider, Gail Frank, Sonia Mack, Val Braun, Jodi Loeher, Amber Lounsbury
- Family and Consumer Science Educator, Amanda Diede
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## YOUTH EXPLORE ROCKETS AND AEROSPACE IN SEARCH OF FUN AND KNOWLEDGE

Exposing young people to aerospace science through hands on activities provides learning in a fun and challenging environment, exposes them to possible career opportunities and makes science fun.

### ISSUE:

Like many youth throughout the country, South Dakota youth are not exposed to science much beyond the classroom science experience. Unless youth are exposed to a variety of science related topics and activities that are challenging and engaging, they may not see science as a possible area for study or even a career option. Finding ways to make science appealing and engaging is essential if bright young minds are to be engaged in becoming the scientists of the future.

### WHAT WAS DONE

One way to introduce science in general is through rocketry and aerospace programming. Throughout the year, more than 362 youth attended activities involving rocketry and aerospace travel held in communities throughout the state. Rocket workshops were held across the state. Rocket launches were held at several county fairs, and were a part of SD State Fair Ag Technology Day. Over 3700 people were in attendance at a Sioux Falls Canaries game, where a media launch was held to promote the 4-H Initiative Science, Engineering and Technology (SET) in the Minnehaha area. The announcer provided a dialogue about SET and Rockets while the SET club members fired volleys of t-shirts into the stands.

### IMPACT

As a result of the youth activities and related public information events, youth interest in science was generated and experienced as evidenced by:

- Youth learned the fundamentals of rocketry, Newton's Laws, and had hands-on experiences of building and launching rockets. They learned the techniques to adjust the amount of water used or number of fins and placement to achieve maximum height for their rockets. "Who knew the more fins the better and the less water the better"
- One family has designed a rocket contest for their family reunion, and another family emptied the refrigerator of plastic bottles to see which products made the best rockets
- "My dad is never going to find the air compressor!"
- Building and Launching the Rockets was the best thing I did all summer!"
- After each volley at the Canaries game, a large number of youth and fathers surrounded the reloading area wanting information about how to build one of the air cannons. Educators talked and impressed upon those interested that plans for building the guns could be obtained and the gun could be used as an exhibit as a 4-H project in the SET area. There was interest in the program because of the uniqueness of the demonstration.

### COLLABORATORS

- Tripp County 4-H Leaders
- 4-H SET Club, Sioux Falls and Yankton
- Colome and Winner School Districts
- Aurora Plains Academy, Plankinton, SD
- Yankton SET Club Meetings, Yankton, SD
- Hughes, Stanley, Hyde, Sully, Tripp, Aurora, Yankton, Brookings, Lake, McCook, Miner and Moody Counties
- Sioux Falls Canaries Baseball Team
- SD Discovery Center, Pierre, SD
- Pierre Boys and Girls Club,
- Ft. Pierre Community Youth Involve Center

South Dakota Cooperative Extension staff involved:

- Helen Geppert, Gail Frank, Steve Munk, Audrey Rider, Jane Hanson, Andrea Klein, Mark Rowen, Michelle Brandenburg and Dennis Roy.

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## YOUTH LEARN SCIENCE IS ABOUT THE EARTH, SOUND, MOVEMENT AND ALL THE CREATURES!

Students learned about the "hows" and "whys" of the world they live in about scientific inquiry and how specific actions impact and change the environment around them. This stimulated their critical thinking skills and their desire to learn more.

### ISSUE

Student interest and performance in science and technology-related subjects continue to decline, while the market's demand for proficiency in these same areas is on the rise. It is essential to provide young people with learning experiences that make science relevant and interesting. The challenge is to develop and integrate these learning opportunities into on-going youth programming.

### WHAT WAS DONE

Activities and programming were developed and delivered to offer the following experiences:

- Analyzing the various implications/effect of scientific advancement on society.
- Learning how designing a solution may have constraints of cost, time, space, materials and safety.
- Youth analyzed forces and forms and their effect on motions, energy, energy transfer and measurement
- Students studied types of soils, fossils and erosion, volcanoes
- The effects of sound and how sound travels were taught to youth and they made their own sound machines.
- Youth explored the affects of gravity and airplanes.
- bioluminescent organisms, the reaction of yeast, and electricity all which fall into the area of science. We discussed and used the scientific method and used observation techniques each month.
- Egg-citing day; youth explored types of birds and how wing-span and motion affect flight speed, youth conducted experiments with eggs: how heat, motion, and gravity affect eggs, and the calcification of egg shells and relationship to bones.
- Exploring uses of Global Positioning Systems in the outdoors and participated in geocaching treasure hunt using the GPS receivers. History of GPS receivers, the development of the GPS system along with teaching the use of the units. Youth were taught how to program in latitude and longitude points to find, along with marking locations for a "treasure hunt." Each member had a unit for hands on programming.

### IMPACT

- The youth involved in the science projects increased their knowledge in the subject areas through hands on activities. As students developed their projects, they learned to present their concepts to other students, demonstrate their ideas, and think through the practical issues of design, performance, and functionality.
- 72% of youth increased their knowledge of business.
- 65% could define friction, force, inertia and equilibrium on a quiz.
- Many shared what they had learned with parents and others. Teachers were appreciative of the programming.
- The mentoring skills really started to show up with the older students after the second week of activities as I had the older students work with the younger students and help them build the bridges, volcanoes, and plant the flowers. They demonstrated great leadership skills by showing the younger students how to run the computer program and how to make the projects work without just doing it for them. The students also exhibited great inquiry into the themes that were presented and asked many questions that I helped them investigate or research for answers.
- Youth learned the scientific method and the use of observation. They saw first-hand the effects of pollution on frogs.
- Feedback-This is really cool! Look at the fish glow!" "My yeast is growing – my yeast is really working!" "This frog has 3 legs – that's caused from the pollution?" "I'd like to be a scientist!" "I like to use the microscope"
- Students shared amazement of flight of birds, were able recognize how flapping arms cause a person to weigh less.
- Students shared " I never knew they made GPS receivers small enough for your hand"
- Students were able to identify the correlation between points and directions, and understand diameter in relationship to finding coordinates.
- At the culmination of the photography workshops, 73% of participants indicated they knew more than before they came to the workshop, and 81% indicated when they added effects to the photos is when they learned the most.

## COLLABORATORS

- After School Programs at Wessington/Wolsey, Hanson, Wessington Springs, Miller, Wessington. Spink County schools.
- Hand County Library, and after School Program.
- Rosemary Moeller, after school director for Wessington/Wolsey program.
- Mary Glenn, Jamesville school teacher; Jamesville Colony
- Tripp County community programs
- Aurora Plains Academy, Plankinton, SD
- Chamberlain, Forestburg, and Plankinton youth and 4-Her'
- North Central 4-H camp: campers from Brown, Campbell, Corson, Day, Dewey, Edmunds, Faulk, Grant, Hyde, McPherson, Marshall, Potter, Sully and Walworth.
- GPS Educational Program for youth, Newton Hills, Lincoln County;
- GPS Educational Program for Kids on the Prairie, Woonsocket, Plankinton;
- SET Project Day, Minnehaha County, Sioux Falls;
- GPS Educational Programming for Volunteers of America, Newton Hills, Lincoln County;
- Parks and Recreation Department, Yankton
- Todd County School District Environmental Day
- Game Fish and Parks, Mellette & Todd County Conservation District; Natural Resource Conservation Service

## CONTACTS

South Dakota Extension Staff: Alice Nickelson, Helen Geppert, Denise Lingscheit, Gail Frank, Amber Lounsbery, Audrey Rider, Becky Leonard, Mark Rowen, Steve Munk, Marta Lemke, Jackie Kessler-David Vander Vliet, Heather Fairbanks

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## ROBOTICS ENGAGE YOUTH IN APPLIED SCIENCE/TECHNOLOGY

Designing, programming and seeing robots in action provided youth opportunities to see the outcome of their work, experience success working as a team and to see real world applications of their creations.

### ISSUE

Youth are frequently not supported to develop and use their scientific skills and creativity simultaneously. Providing these opportunities is critical to ensuring that youth develop both their analytical skills and their ability to use science creatively to solve real world problems

### WHAT WAS DONE

Over 1000 youth across the state of South Dakota were involved in Robotic workshops. Changes in practices, attitudes, knowledge and skills were present in activities. The students exhibited the ability to stay on task and think critically. They demonstrated leadership skills, initiated inquiry into the themes that were presented and asked many questions to investigate or research the answers.

Activities included:

- Robot cup activities were held throughout the state
- LEGO Mindstorm robot construction opportunities, which included basic computer programming skills workshops
- Youth worked in teams on projects to build and program the robots successfully.
- Youth explored where robots are found in today's society and what components are used to make a robot.

### IMPACT

Learning and action as a result of the robotics training/projects was documented by the following:

- Youth learned Basic robot construction, basic computer programming skills, mathematics concepts including degrees and percentages.
- The youth demonstrated the ability to use the LEGO Mindstorm kits. They demonstrated their computers skills by programming the robots to maneuver in different rotations. Youth were able to stay on task and think critically about how to program the robots. Participants were observed programming the robot to successfully perform specific actions, a skill that they could not demonstrate before the workshops. In subsequent sessions, youth were able to expand their knowledge and experience with computer programming by adding sensors and special tools to their robots.
- Students of various ethnic backgrounds enjoyed using the technology and programs. Some of the students were very interested to learn more and try more advanced programs.
- The mentoring skills were evident in workshops. In the Colome school, the 2nd graders were the experts and assisted the 6th graders in programming during sessions, as they had experience in the afterschool program. They assisted in building and programming robots with those who had little or no experience.
- The Faulkton Area school superintendent was so impressed with the program; he purchased six LEGO Mindstorms NXT robotics kits and a site program license for the school.
- The Miller Area High School has purchased 10 kits. The teacher is a leader in the robotics area for the 4-H in that area.
- In Watertown at Robotics 101 youth were able to make the connection between robots in the workplace as they watched from a distance the robots that weld at Angus Palm industries in Watertown.
- Many children repeatedly signed up for workshops, and assisted others to build and program robots with those youth who had little or no experience. At one program, 2 girls attended the first session, during the second session they brought 3 friends, encouraging other girls to participate. A young girl said, "Girls are not supposed to like this stuff, but I do."
- Youth commented; "This a really neat, when will we meet again?" "When are you coming back?" One leader stated that she did not think 2nd and 3rd graders could not do this and was surprised with the amount of knowledge that the children had.
- Robotics included having to draw a "picture" of a robot that would draw and move, and then building a robot from parts furnished. These parts included Styrofoam cup, 3V electric motor, battery holder, switch, markers, pencils, rubber bands and masking tape. Most of the kids did not think they could accomplish the task, however after about 35-45 minutes, they realized they could do it. By the end of the two hour session, most remodeled their robot at least once for improvement.

## COLLABORATORS

- Enemy Swim Day School Afterschool Programming
- North Central 4-H Camp
- Brown, Campbell, Corson, Day, Davison, Dewey, Edmunds, Faulk, Grant, Hyde, McPherson, Marshall, Potter, Sully, Walworth, Codington, Union, Beadle, Hand, Spink, Minnehaha, Lincoln, Todd, Tripp, Mellette, Jones, Gregory, Lyman, Aurora, Sanborn, Jerauld counties
- Colome, Winner, Todd County, Gregory, Faulkton Area, Hoven, Agar-Blunt-Onida, Plankinton, White Lake, Wessington Springs, Kimball, White River and Sanborn Central school districts
- State 4-H Leaders Association
- South Dakota Discovery Center
- Boys and Girls Club of Pierre
- Winner Cares Summer Program
- Ft. Pierre Community Youth Involve Center
- Upland and Grass Ranch Hutterite Colonies

## CONTACTS

- South Dakota Cooperative Extension staff involved: Mark Roe, Steve Munk, Jackie Kessler, Jodi Loehrer, Helen Geppert, Gail Frank, Dennis Roy, Heather Fairbanks, Bob Fanning, Valerie Mitchell, Marta Lemke, Audrey Rider, Michelle Brandenburg, Becky Leonard, Jane Hanson, Andrea Klein, Denise Lingscheit, Lanette Butler, Sonia Mack, and Clint Clark
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## DEVELOPING YOUTH LEADERSHIP PAYS BIG DIVIDENDS

Participation in a variety of activities helped a large number of youth to develop their self-confidence, leadership and other skills and provided service to their communities.

## ISSUE

Many young people, especially those determined to be most at risk for becoming involved in unhealthy behaviors, are often overlooked in terms of their ability and interests related to civic engagement and service. Research confirms that when young people are provided opportunities to develop leadership skills and be of service to others, they develop enhanced self-esteem and confidence, are less likely to make poor life choices and are more likely to become positive productive community members providing service to others.

## WHAT WAS DONE

Engaging youth in their communities, schools and the civic process is critical to their healthy development. Providing role models, working with mentors and connecting kids to caring adults are all things that make it easier for youth to turn away from negative influences and choose a path to successful citizenship and adulthood. Activities to support this important youth development included:

- INB Youth Conference-Watertown & Vermillion (46 - 8-12 year olds)
- Teen Leadership Conference (170 - 13-18 year olds)
- State 4-H Leaders Association Conference
- “Tools of the Trade” Afterschool Provider Training (32 youth)
- Teen Camp Counselor Training - Camp Lakodia & Camp Bob Marshall (45 teen youth)
- Youth Camp-Camp Lakodia, Camp Bob Marshall, Camp Richmond (900 – 8-12 year olds)
- Judging Schools and contests held on the county, regional and state level
- KidQuest! Teens as Teachers (nutrition education)
- Health Rocks! Teens as Teachers (tobacco and drug prevention; 93 teens and 25 adults reached over 2100 community participants in 18 communities)
- Peacemaking: More than Hammers & Nails-Transforming conflict into peacemaking
- Teen Save Our Farm Youth (SOFY) Program
- Fire and Flood Recovery Efforts
- Leadership Plenty Training

## IMPACT

- State 4-H Youth Council members gained skills in taking initiative and planning and carrying out activities by coordinating the INB youth conferences with minimal adult guidance. Attendees developed confidence in their ability to lead and learned teamwork in an applied situation. Communication skills, group work, and other crucial leadership skills were just a few of the topics presented at INB.
- The For Teens, by Teens, Teen Leadership Conference (TLC) held at SDSU provided an opportunity for teens from across the state to come together and learn by attending a wide variety of educational workshops, making new friends and being challenged to take on larger leadership roles at the local level.
  - o 80% of the participants cited specific information/skills they learned at TLC they plan to use at home.
  - o Participants took an active interest in planning TLC 2009—recommending 36 different workshop possibilities.
  - o 86% of the participants stated they plan to attend TLC in 2009
- State 4-H Leaders reported trainings have increased their knowledge in a number of areas and aided in their preparation for leadership responsibilities, particularly club start-up activities, including project books for leaders and members. Ninety-eight percent of participants rated it likely or very likely that they would apply what they learned in these trainings.
- “Tools of the Trade” trained participants in youth programs regarding youth development, parents as partners, bullying issues, and civic engagement to increase the ability of providers to address these problems/opportunities.
- Camp counselor training including general camp activities, youth development practices, counselor basics, teaching skills, campfire, songs, skits, recreation, and ceremonies.
  - o 100% indicated they already have or will use learned skills in other clubs, organizations, activities and school.
  - o 80% reported an increase in their skill level regarding working as a team with peers and finding their leadership role within the team.
  - o 100% revealed a specific new skill they will use in another setting.
  - o 46% reported increased knowledge in teaching camp activities to young youth.
  - o 39% reported increased level of competency in planning and organizing.
- Summer 4-H camping program included educational workshops, recreation, team building, and leadership skills. Breakout sessions varied by camp setting including but not limited to: aerospace & rocketry, photography, the six pillars of CHARACTER COUNTS!, robotics, and geocaching. When surveying a portion of participants:
  - o 57% of youth learned that their way is not the only way to do something.
  - o 56% of youth learned that being different is all right.
  - o 51% of youth learned the importance of being on time.
  - o 48% of youth learned something new at camp they plan to teach someone else.
  - o 42% of youth learned something at camp that they plan to learn more about.
  - o 40% of youth said camp helped them to respect other people.

- o 36% of youth reported they are better at taking care of themselves.
- o 18% of youth are better at following directions.
- o 82% of youth reported they definitely want to return to camp next year.
- Judging Schools and Contests give youth the opportunity to exercise decision making, which they will apply as consumers, community members, and eventually voters in making our laws. Oral reasons gives youth the opportunity to develop justification for their actions. Judging Schools and Contests are offered in many of the different project areas available for 4-H youth to participate in throughout their 4-H Career.
- KidQuest Teens trained as Teachers increased their skill level:
  - o 26% increase in the ability of the teen to teach younger youth.
  - o 16% increase in the teen youth's ability to work as a team.
  - o 12% increase among the teen youth's ability to communicate.
  - o 12% increase in the teen's self-motivation.
  - o 12% increase among the teens youth's ability to plan and organize.
- The Health Rocks! Teens as Teachers training covered topics relating self responsibility, critical thinking, teamwork, planning & organizing, problem solving, communication, decision making, stress management, healthy lifestyle choices, self esteem, youth development practices, and how to work as a team. Youth reported:
  - o 40% increase in teen youth ability to teach younger youth.
  - o 27% increase in the teen's ability to plan and organize.
  - o 27% increase in the older youth's communication skills.
  - o 26% increase in the teen youth's self-motivation.
  - o 25% increase in the teen's ability to work together as a team.

Comments from Teens as Teachers participants included:

- o "I gained the confidence of speaking in front of a group of people."
- o "I've learned how to communicate in groups so everyone can participate instead of one leading everything."
- o "The most valuable asset to me was learning so much more about drinking, smoking, and using drugs."
- o "As a result of Health Rocks!, I have become more patient with younger children and better able to handle a large group of them."
- Peacemaking: "More than Hammers & Nails" included providing adults and college students in southeast South Dakota with mentor trainings on topics including communication and conflict resolution. The primary audience (educational professionals and volunteers who serve youth) reported:
  - o Aware of the link between people and things in conflict resolution (48%).
  - o Recognize each person handles conflict differently (49%).
  - o Identify the importance of avoiding the defensive trap (46%).
  - o Understand communication skills are taught and caught as a means of realizing the way we respond to behavior as adults is linked to how the youth we serve will also respond to conflict (39%).
  - o Recognize I can avoid conflicts in my classroom through the use of classroom management tools (36%).
  - o Understand how taking ownership for one's feelings through the use of "I" messages may used for managing and resolving conflict (52%).
  - o List the steps of S.O.L.V.E. approach to problem solving and ways it can be applied in classroom practices (48%).
  - o Distinguish how each portion of the O.P.T.I.O.N.S. strategy of problem solving can be used in daily work with children (25%).
  - o Recognize the role adults play in the lives of youth in our care at each stage of the decision making shift (35%).
- 75 FFA students completed an identical survey both before and after the Save Our Farm Youth camp to assess their knowledge of self-motivation, communication, team work, planning, organizing, and teaching. They then helped teach farm safety to elementary school children.
  - o 81% of the teens returning the survey showed an increase in teamwork skills.
  - o 65% of the teens demonstrated an increase in teaching skills.
  - o 61% of the teens showed an improvement in communication skills
  - o 64% of the teens confirmed development in planning and organizing skills
  - o 45% of the teens showed self-motivation increases
- Emergency Response – Fire: 8 4-H Quilts were distributed (quilts were made state-wide); 8 4-H members and volunteers prepared and served a meal to fire victims follow-up event Flood: Extension provided the first wave of 30 plus water well test kits. 30 school age children received backpacks from the Custer County 4-H –coordinated by the Youth Development/4-H Educator in Custer County. Pennington and Fall River County 4-H provided 44 insect repellents - delivered to home owners by Disaster Recovery Center personnel.
- Many youth participated in the Horizons II community projects this past year. A 4-H member of Tyndall was a team member for the LeadershipPlenty training. Since then he has used his 4-H skills and leadership skills to work with the City Council to spearhead an improvement project in the city park. He is organizing and obtaining the funding (through donations) to set up a Frisbee Golf Course in the city park. The local Extension Educator reports "I know that he would not be doing this had it not been for his involvement in 4-H and FFA leadership and the training that he got through LeadershipPlenty."

## COLLABORATORS

State 4-H Council, South Dakota 4-H Foundation, State 4-H Leaders Association, Friends of Camp Lakodia, Western Dakota 4-H Camp Association, Abbie Mack & Laurie Zubke– Health Rocks State Team Youth Member  
 Avera Health, Carole Sweeter – Retired Extension Educator YD/4H, Conde Horizons Program-  
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## SOUTH DAKOTA 4-H CHARACTER COUNTS! MAKES A DIFFERENCE

Teaching the CHARACTER COUNTS! (CC!) Six Pillars of Character in a variety of ways in homes, schools and communities in 54 counties across the state has increased the ability of many youth of all ages to make healthy and more ethical decisions, which improves the quality of their lives and those of everyone with whom they interact.

### ISSUE

Adults working with youth in schools and in a variety of public and private settings report growing concerns related to increases in inappropriate behaviors such as bullying, stealing, violence, lying, drug and alcohol use and disrespectful attitudes. The “Six Pillars of Character” - trustworthiness, respect, responsibility, fairness, caring and citizenship teach youth to make good ethical decisions. The challenge is to make CC! education available as widely as possible through capacity development, program expansion and message reinforcement

### WHAT WAS DONE

Our CC! evaluation (1998 – 2006) documented CC! education significantly decreased unhealthy youth choices and behaviors in youth reached by the program. The evaluation also revealed the more times a student hears about CC! the more likely they are to make positive behavioral choices. .

The SD CC! Project continued an on-going statewide effort to support and partner with communities to teach youth and adults the Six Pillars of Character. These principles help youth and adults distinguish right from wrong and are fundamental in making good ethical decisions and choosing to behave in respectful and appropriate ways in a variety of situations

- CC! trainings, activities and events reached 54 counties.
- CC! trained 1,194 adults and 209 teens - impacting 6,659 youth.
  - o 21 CC! Trainings for PreK-12 teachers and teens in school and afterschool, and adults in business
  - o 9 CC! “We Are All Relatives” (WAAR) Bush Grant Schools.
  - o 31 CC! Pillar presentations and lessons directly delivered to students.
  - o 1 CC! Graduate Class - K-12 teachers wanting to expand their knowledge on character education.
  - o SD Character Education Conference- updates and rejuvenates teachers, youth leaders & parents.
  - o 7 – WAAR Cultural Day Camps; 1- 4-H Camp – reinforce school character education programs.
  - o 3 Youth Contests: 1- Foundation for Life and 2- 4-H CC! Speaking Contests
- Evaluations –distributed at trainings and at school visits
- CC! state and local e-news letters disseminate CC! educational information, ideas, activities, events, resources to teachers, youth professionals and parents reaching 2, 175 people.
- Lending libraries distribute 125 CC! Resources and Curriculums statewide & nationally
- Supply one-on-one trainings, resources and program assistance to clientele of SD
- Direct mailings to promote participation in CC! local, regional and state activities & events
- Email resources and program assistance to clientele in SD and US.
- CC! News Releases – local, regional and state.

### IMPACT

- Trainings – Teacher, Teen, Business and We Are All Relatives (WAAR) & Pillar Classes learned:
  - o CC! National/state history; CC! common language - “Six Pillars of Character”
  - o Six Pillar activities, lessons, events, resources and how to make ethical decisions.
  - o WAAR Training -Native American – family dynamics, traditional ways and values, teaching methods and culturally relevant materials
  - o How to plan and implement CC! into their classroom, schools and communities.
  - o How to build partnerships with families and communities for greater CC! impact.
  - o How parents can teach CC! to children, how teens can mentor CC! and bully prevention.
- Teacher training results:
  - o 72% indicated they were ready to apply and use CC! in their classrooms. “Everyone in the school is informed so it will be easy to implement into the classroom and school.”
  - o 64% had an understanding of the CC! program.
  - o “School staff report more “please” and “thank you,” much better behavior during recess and PE classes, fewer discipline problems and less problems with cheating and lying about incomplete homework assignments.” “CC! promotes a positive environment within our school.”
- We Are All Relative Training Results:
  - o Seven schools established and sustain a culturally relevant character education program. Five of the seven schools have developed a 3 Year WAAR Plan for 2008-2010.
  - o Changes in pro-social behavior within the schools over the last three years:
    1. the percent of students who reported consuming alcohol fell eight percent (8%),
    2. percent reported not using drugs increased by thirty-four percent (34%)
    3. percent reported not vandalizing dropped three percent(3%) and
    4. percent reporting they had vandalized property decreased eight percent (8%).
  - o “Using the CC! WAAR curriculum in the classroom and during counseling has helped increase pro-social behavior in school. More teachers use the Six Pillar language now than when we began. Children also use the Six Pillars of Character when talking to others.” “Our students use CC! during conflict resolution and are

taking responsibility for actions and attitudes.” “Our school is reporting more minor level violence (e.g. verbal disrespect or pushing) which has decreased our higher level violence (e.g. swearing and fighting).” “CC! is a contributing factor to our low number of office referrals K-5.” “We are seeing an increase in multi-grade interaction. Older students are helping younger students more and offering to help when teachers ask.

- Students training results:
  - o “I learned the characteristics of a “person of character” and changed my attitude about how I interact with others.” “I learned that I am a role model to younger students.” “I learned that you need to treat people with respect and treat them the way you want to be treated. I learned you need to take responsibility for your actions and listen to people.” “I learned that you should think before you act. Almost every decision you make will come around right back at you sometime in your life.”

### COLLABORATORS

- 44 SD Schools, 1 ND School, 6 SD Preschools/ Daycares, After Schools
- SD 4-H Foundation, Bush Foundation, Volunteers of America, Highway Safety Program, Madison - Kiwanis, Community Center, Buckle-Up! Bulldog Coalition, Hand County CC! Coalition, & local merchants.
- ND Sioux County Extension Educator – Sue Isbell, Western University, Evaluator – Dr. Mitchell
- Sitting Bull College-1994 Land Grant Institution- Rick Delories & Arlyne Gray Bear; National Tribal Development Assoc./American Indian Credit Outreach Initiative -Angie Harrison; Six Sitting Bull College Students and Vocational Counselor; Standing Rock Reservation Districts & Running Antelope Community

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## PREVENTING YOUTH INJURIES REQUIRES ONGOING EDUCATION

Unintentional injuries are not accidents and can usually be prevented. Training youth and adults on how to avoid injury requires continual education specific to the activity and environment youth are experiencing.

### ISSUE

Injury is the leading cause of death in children and young adults. We call them “accidents,” which implies they cannot be anticipated, but most childhood injuries can be predicted and prevented. Some basic safety steps can save thousands of children from injury related disabilities and death. Injury prevention is not difficult, but requires attention and education.

### WHAT WAS DONE

- Save Our Farm Youth Camps—(SOFY) 3450 youth and adults statewide learned to protect themselves from injury and harm through safety workshops
- Babysitting Clinics- Over 500 youth learned the basics of safe, educational, and fun care for kids through these clinics.
- Hazardous Occupations Safety Training in Agriculture—(HOSTA) This year the program was taught to 18 youth.
- Horse Safety Training -Over 400 youth received the horse safety training this year
- Bicycle Training -Bike safety information was presented to 92 participants in specific bicycle trainings. One training reinforced safety with handicapped adults
- Firearm Safety Training- Educators helped educate over 350 youth and volunteers in firearm safety
- Internet Safety- This effort reached 120 youth.
- Displays and Information Sharing-West Nile Virus information was provided to 400 households on the Crow Creek Reservation and to numerous youth across the state. Approximately 600 in South Central SD were exposed to the “Staying Healthy Around Animals” display at Achievement Days which provided information on e-coli and the importance of hand sanitizing

### IMPACT

- SOFY Camps-Topics included: livestock safety, sun safety, lawn-mower safety, machinery safety, CPR, first aid, chemical safety, fire safety, self defense, grain flow, water safety, emergency preparedness, germ prevention, ATV safety, electric safety, firearm safety, West Nile Virus prevention, bicycle safety, home alone safety and hyperthermia prevention. Some youth were presented “Rural Safety for Kids” safety books. The CPR training from a prior safety training helped youth go into action when an elementary PE teacher collapsed from heart problems and stopped breathing. Parents have reported that youth come home and talk for weeks about what they have learned. Many older youth reported being in an ATV accident. One youth showed the instructor stitches they received from an ATV accident. Comments included: “I would like to be a farmer some day and you reminded me to be safe.” “My family is going to put together a First Aid Kit.”
- Babysitting Clinics—These youth are now prepared to handle situations that may arise while they are caring for younger children. Future parenting skills are also enhanced by their experiences. One training evaluation reported that 90% of the youth said they learned they needed to tell the parent if they made a mistake. A comment shared was: “I feel better now about babysitting after taking first aid and CPR—I always worry about kids choking!” A testimonial shared: “Please send me a list of the kids who have completed the Red Cross babysitting class (taught through Extension). I need a babysitter for the summer and I won’t hire a babysitter who hasn’t completed this class.”
- HOSTA Training—This safety training is required for youth ages 14 & 15 who wish to be employed on a farm. All of the youth trained were certified to seek farm employment.
- Horse Safety Training—All youth who participate in the horse project are required to complete a horse safety training. New members in the horse project were reported to be wearing helmets when riding. Experienced members and volunteers help beginners and their parents during practices to make sure safety measures are followed.
- Bicycle Training—. Youth learned safety tips and got their bikes checked. They were provided with reflectors, horns and lights. Sixty two percent of the youth at one training thought that cars had to stop for them. Now they know this is not a true statement.
- Firearm Safety Training—Educators and volunteers administer the firearm safety classes to those youth participating in the Shooting Sports program. Youth learn safer and responsible use of firearms and archery equipment. They are taught to make decisions, and the importance of self-discipline and concentration.
- Internet Safety—Youth learned the importance of not talking to strangers including Facebook and MySpace safety. Youth know what they should and should not share on the internet and what they should do if they receive a message that scares them.

### COLLABORATORS

- Fire Departments, County Nurses, County Weed Boards, Schools, Police Departments, Red Cross, YWCA, Gun Clubs, Federal Shot Shells, NRA, Pheasants Forever, Whitetails Unlimited, Game, Fish and Parks, Kiwanis, Archery Clubs, National Guard, FFA Chapters, Afterschool Programs, Child Protection Teams, Business, Black Hills Stock Show, Tribal Governments, Colonies, Department of Health, local Health Providers, Rural Electricians, and FNP Programs.

### CONTACTS

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## Developing Financial Literacy in Youth Provides a Foundation for their Future

Young people who participated in a variety of financial management programs have learned the importance of budgeting, planning for the future and managing credit. Youth who use this knowledge and the skills learned are more likely to avoid financial problems now and as adults.

### ISSUE:

Money management is a critical life skill to have in order to be successful. Yet, 40% of American families report living beyond their means and have significant credit card debt. Many children and adolescents are not being taught how to manage their money by their parents or through personal finance courses in schools. Teens are active consumers, spending 98% of their money instead of saving it. Additionally, more than 1 in 5 youths ages 12 to 19 have their own credit cards or have access to parent’s credit cards, and 14% have debit cards. Youth need to be taught how to make sound financial decisions and manage their finances in order to avoid the financial pitfalls that many American families face today

### WHAT HAS BEEN DONE:

- Money Adventures Program was presented to Brookings Medary GAP After School Program.16 youth ages 8-11 participated.
- Eleven K-5 teacher s from Ziebach & Dewey counties, attended a Train the Trainer, session which included the “Pocket Power” curriculum. Topics covered were Financial Literacy, Monetary Education, Spending & Saving, Entrepreneurship Education.
- Money to Spend, a breakout session at Teen Leadership Conference in June 2008, was attended by 22 youth ages 13-18. At the workshop, Youth made spending choices and a budget, including a variety of expenses such as clothing, eating out, and entertainment. Youth learned the basics of budgeting, including how to balance a budget, financial goals, and credit basics.
- South Dakota State University's TRiO Student Support Services Program is designed to help university students achieve academic success, with the ultimate goal of increasing the number of students who succeed from semester to semester and who graduate from SDSU. Donna Bittiker, SDSU Extension Educator – Family Consumer Sciences, in collaboration with the SDSU TRIO Program, offered two financial education workshops for 32 students on campus in Brookings in January and February 2008.
- LEAP! brought youth together at SDSU for a day of training in leadership and life skills.
- 35 youth were reached with workshops on credit and payday lending at Parkston and Andes Central High Schools.
- A program was provided to the Todd County High School Finance class. Topics covered included how to finance college, monthly budgets, education required for occupations as well as pay-ranges for those occupations, job outlooks, credit card debt, saving for retirement, and loans.
- A program was provided to 10 third grade students in White River and 51 second and third grade students in Rosebud. The program included money identification, money math, counting money and making change.
- Youth Ag Days in Watertown reach over 850 kids and around 50 teachers each fall. The class is called Farm Cents which teaches the kids about how much it costs to raise crops and livestock, where the borrow money to farm using play money and roll playing.

### IMPACT:

- Follow up surveys indicated that 64% of participants discussed what they learned with their parents / guardians (meeting goal of increased family communication about financial issues); 36% set up a savings system for their money (whether envelope or jar method); 21% opened a savings account at a local bank.
- Teachers were introduced to the importance of Financial Literacy and how to add in to current curriculum. The training expanded knowledge of teachers – ways to incorporate financial and entrepreneurship into curriculum. This training will help students gain knowledge through daily classroom exercises.
- Participants increased their skill level in the following areas. Data was collected from self-reported surveys.
  - o 52% of youth reported an increase in their knowledge of understanding how credit works.
  - o 42% of youth increased knowledge in tracking income and expenses.
  - o 37% of youth reported increased knowledge in using a budget.
  - o 29% of youth increased knowledge in developing a budget.
  - o 29% of youth increase knowledge in how to develop and write goals.
  - o 89% of youth reported “this workshop was so good you should repeat it.”
- 18 undergraduate students attended the workshop on Budgeting Basics. When asked to name a strategy learned at the workshop that they intended to implement;
  - o 50% indicated plans to start an emergency savings fund
  - o 44% indicated plans to follow a written budget
  - o 22% indicated plans to learn more about investing
  - o 5% indicated plans to no longer take out more student loans than needed.

- 14 undergraduate students attended the workshop on Credit Card Basics. When asked to name a strategy learned at the workshop that they intended to implement;
  - o 21% indicated plans to read the small print on the credit card application and follow up correspondence.
  - o 21% indicated plans to only have one credit card.
  - o 21% indicated plans to always pay more than the minimum payment and not let the balance become too large.
  - o 14% indicated plans to regularly check their credit report.
- At the culmination of the LEAP! Program participants were asked how they would rate their skills and knowledge in each of the nine afore mentioned objective areas before and after the program. The average percentage of change in skills and knowledge from before to after LEAP! was positive for all nine objective areas. The average percentage of change for each objective area is listed in parenthesis behind its respective objective. The program objectives are for participants to:
  - o Increase understanding of how to develop a budget. (38%)
  - o Increase understanding of how to use a budget. (62%)
  - o How to develop and write goals. (52%)
  - o Understand how to track income and expenses. (46%)
  - o An increased knowledge of how credit works. (47%)
  - o List steps to increase savings. (43%)
  - o List steps to decrease debt (56%)
- The pre and post-survey for payday lending lesson indicated students didn’t believe payday lending was available at all in their area and after the lesson they were able to identify businesses and advertisements for payday lending available locally.
- Students learned the following:
  - o how to find and access information on financing college
  - o how to use calculators to determine how much loans cost as well as how much savings can add up
  - o average costs of living as well as the average income in South Dakota
  - o how much of their income goes to taxes, insurance, retirement, housing, as well as other necessities
  - o importance of fiscal responsibility to ensure financial stability now and in the future
  - o how much school they would need for the occupations they were interested in and the outlook for the demand for that job as well as what is required of someone in that occupation
  - o dangers of too much debt and credit card debt
- Students learned what different coins and bills were worth and how to identify them, how to count money, how to add costs of purchases and make change, and how to add and subtract amounts of money. Teachers commented how much the program got their students engaged in learning how to work with money.
- Third grade students played the parts of a farmer, a lender and a grain/livestock buyer. They learned how a farmer has to borrow money proving they can pay it back and then spend from 3 months to a year raising the crops/livestock before they get something to sell. The program was finished with a discussion on how much a typical family spends on family living in south Dakota and help them figure out how many acres or head of livestock it takes to generate that income.

### QUOTES FROM PROGRAMS:

“It is youth oriented and very easy to do on a daily basis. This is easily incorporated into the current curriculum.”

“I plan on “tweaking” the programs I have in place and adding lessons with more emphasis on money management.”

“I am going to begin saving x amount of dollars per month out of my paycheck to pay for my goals in finances.”

“I liked the fact you covered other ways to get money and didn’t just say don’t do it (invest in payday loan).”

### FUNDING SOURCES:

A. Brookings GAP & County Extension Funds; B. Four Bands Community Fund, Liz Gorham, SDSU; C. Minnehaha and McCook County Extension offices; D. SDSU TRiO Program; E. \$25 registration fee. In-kind: Papa John’s Pizza (pizza and sodas); the College of Agriculture and Biological Sciences (SDSU ice cream and pens); SDSU Admissions (folders and bags); Power Promotions of Madison (reduced rate on t-shirts); University Bookstore, 4-H Foundation, Brookings County, and Lake County door prizes; F. Charles Mix Co. Funds; G & H Mellette & Todd Co. Extension Funds

### COOPERATORS:

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## Are They Really Ready to Work? 21st Century Skills for Students of Today

Students participating in career and work skill preparation education report learning about many new career opportunities and what skills are needed to be successful in the work force. Many report they intend to use what they have learned to improve their lives.

**ISSUE:**

When asked to describe an ideal employee, attributes such as being a hard worker, a team player, and a good communicator are frequently cited by employers as being even more important than technical expertise. According, however, to a recent survey of employers conducted by the Partnership for 21st Century Skills, many new entrants to the workforce lack these important skills. Additionally, many young people report they do not know what careers are available to them and how to prepare themselves for a specific career.

**WHAT HAS BEEN DONE:**

- Held on a weekday in February, schools in and around Hutchinson & Turner counties were invited to attend a Regional Career Fair for youth. The goal of this event is a cooperative effort to keep our communities vital and retain our young people in the local workforce. The fair was designed to enable regional employers and postsecondary training providers (colleges, universities, apprenticeship programs and the military) to provide information regarding staffing patterns, job demand, employer requirements, postsecondary program availability and military opportunities to high school sophomores, juniors and seniors. Letters and personal phone calls were used to invite schools to participate. CES Extension Youth Development/4-H Educators were invited to provide an educational session. Community leaders and public officials were asked to serve as simulated job interviewers for the day. When schools arrived they were greeted and given a list of instructions for the day. Youth were asked to visit with the participating booth sponsors as well as attend a 25 minute education session. Youth were also expected to participate in a simulated job interview.
- Three Resume Writing sessions were held for 64 Juniors and Seniors at Menno High School and Freeman Academy.
- A workshop that explored Science, Engineering & Technology Careers was presented at the 2008 Regional Career Fair held February 11 at Freeman Academy. Two hundred and fifty students from McCook, Hutchinson and Turner Counties attended.
- The South Central Cooperative Drug Prevention sponsored its Third annual 8th grade Career Fair on Wednesday, January 30, 2008 at the Wagner National Guard Amory. 355 students from schools in Bon Homme, Charles Mix, Douglas, Gregory, Hanson and Hutchinson Counties attended. Extension Educators presided at a booth geared toward SET careers. Youth had the opportunity to build a model car and test it out using gravity power.
- Entrepreneurship Workshops: 17 youth in White River and 35 youth in Winner attended workshops held to teach Entrepreneurship and Business fundamentals. Student ages ranged from 5 to 12. Students were given a start-up budget to design, create, and advertise their business.

**IMPACT:**

- The Regional Career Fair was attended by over 250 students representing 11 communities. More than 40 employers and 12 colleges, universities or technical schools turned up to tout their various careers and, in some cases, sign students up for more information. Approximately 25 individuals and staff were also involved. As a result of the fair, more youth became informed of job skills and employment requirements and preparatory opportunities available to them before and after they graduate from high school. A random selection of participating schools was surveyed 3 months later. 88% of respondents said they had used at least one skill that they had acquired at the fair. Three of the school counselors reported an increase in requests for resume writing help. Participants reported the event as “being informative and it exposed them to a variety of careers and post-secondary institutions and it was fun!”
- Teens did not know about Extension beyond 4-H and all of the areas they could work in. School Staff who participated are using CES more as a resource as they did not know what areas Extension worked in before. A few of the youth participants have used the Extension Office for information since the program.
- After the workshop, students responded:
  - o 67% enjoyed the activity
  - o 69.7% thought the activity was easy
  - o 44% thought the activity was of value to them
  - o 60% indicated they would use information from this activity in the future
- 70% of participants indicated they had increased their awareness of the many career opportunities in the fields of science, engineering, and technology as a result of our booth.
- Students learned how to budget throughout the process of running their business. Some topics covered included design, prototypes, market survey, opportunity costs, supply & demand, investing in the business, advertising costs and methods, sales, partnerships and teamwork. Students learned how to manage their business budget as well as their own personal budget. While they ran their businesses they received salaries for their “job” in the company. When stores opened students had to make decisions about how to spend their own money as well. Some teams found out that they made products that cost more to make than they could make back by selling. Some found out that they had designed a product that took too much time and labor to be profitable. Some learned that if they spent too much on one piece of the business, they didn’t have enough money left for other important parts. Teams learned the importance of keeping their finances organized and to have a plan of how to spend their budgets. Some learned the importance of having trustworthy

and honest employees. Some teams learned how to use the market survey to their advantage, by either stopping production of products that would not sell, or making more of products that were in demand. Some of the businesses were very successful, while others lost their original start-up budget as well as the investments of its employees. The program provided all of these lessons as well as others. At the end we were able to take all of the experiences of each business and explain what caused them to be successful or not. All of the students were able to learn from the experiences of the other “businesses”. At the end of the program, students were making plans of how they would do things differently if they were to start another business, which planted a seed of entrepreneurship and money management as well as other very useful ideas for the future.

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# Community Innovation and Leadership



# CREATING A VALUE-ADDED COMMUNITY BY LEADERSHIP AND STRATEGIC ACTION PLANNING

## TRANSFORMING COMMUNITY DEVELOPMENT SKILLS OF RURAL LEADERS

Community participants in the Creating a Value-Added Community (CVAC) program produced multi-dimensional Action Plans toward investing in their community’s future.

### ISSUE

Studies confirm rural communities throughout South Dakota continue to steadily face economic and population decline. Quality of life in rural communities are affected by whether there are nearby amenities like healthcare, education, housing, government services, businesses, recreation, and other up to date infrastructure or facilities. However, planning for and investing in the community’s future is unforeseen or underutilized in many South Dakota communities.

### WHAT WAS DONE

- Beginning in January 2008, residents in 17 rural South Dakota communities participated in the Creating a Value-Added Community (CVAC) process for each community.
- CVAC certified facilitators from South Dakota Cooperative Extension were paired at each site with a certified facilitator from South Dakota Rural Enterprise, Inc. Facilitators encouraged community dialogue to help participants discover their own practical ways to build a vibrant local economy.
- CVAC program materials given to participants are modeled after business planning guides and manuals focusing on reducing poverty, creating wealth, and building community capacity.

### IMPACT

- Changes in Knowledge / Attitude Observed by the 17 Participating Communities:
- CVAC Teams, which are made up of participants at each site, built strong relationships together through learning and sharing information.
- New leaders have stepped forward and are working on community projects.
- CVAC participants learned new resources from facilitators, participants, and program materials. CVAC graduates are beginning to utilize them in their community work.
- Action / Application:
- Significant priorities determined during CVAC and currently underway in Timber Lake, Isabel, and Dupree include:
  - Creating a regional revolving loan fund,
  - Working on a regional marketing brochure and website, and
  - Building a regional community database.
- One CVAC Team, comprised of 8 communities in northeast South Dakota, focused on regional assets and developing an action plan focusing on tourism and entrepreneurship. The Glacial Lakes CVAC Team was awarded an entrepreneurship grant to provide a local resource fair and fellowships through the new Dakota Rising program. The Team, consisting of 3 counties and tribal region, developed a new website for resources and support to cultivate prosperous entrepreneurs in their communities. The website is [www.glaciallakesdakotarising.com](http://www.glaciallakesdakotarising.com)
- Huron’s CVAC Team formalized a purpose to identify and support enhancement opportunities in the Huron Region. Action items include:
  - Expanding recreation and youth opportunities,
  - Increasing use of State Fair facilities,
  - Branding and marketing Huron,
  - Embracing diversity, and working on community beautification.
- Mobridge CVAC Team created a mission to empower citizens through inclusive and positive leadership. This team worked hard to survey all community residents to create an action plan representative of the population. Action items include:
  - Community Education,
  - Promote items known as Mobridge’s “Best Kept Secrets,”
  - Recycling, and
  - Rebuilding bowling alley

### COLLABORATORS

Northwest Area Foundation, developer of “Creating a Value-Added Community” curriculum; South Dakota Rural Enterprise, Inc.; East River Electric Cooperative. Funding was provided by South Dakota Rural Enterprise, Inc. via Northwest Area Foundation.

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# HORIZONS COMMUNITY DEVELOPMENT PROGRAM

## COMMUNITY LEADERSHIP TO REDUCE POVERTY

The Horizons program doesn’t change communities – people do. People who care deeply about their communities and want them to thrive have learned to use the ideas, resources, support and inspiration provided by Horizons to make long-lasting positive changes in their small rural towns.

### ISSUE

Few people would argue that small rural communities are a great place to live. However, years of a changing agricultural economy and migration to more urban areas have taken their toll. Rural communities faced with economic decline and demographic change are acknowledging the fact that they own their fate and work on complex issues together. Horizons challenged community members to build their human capacity to address issues around poverty and leadership development. It helped them form a collective vision for their future.

### WHAT WAS DONE

- The Northwest Area Foundation (NWF) in St. Paul chose the Extension Service to deliver a new community development program in South Dakota. Work began the summer of 2006 with community recruitment. Communities had to be under 5000 in population and over 10% individual poverty rate according to the 2000 Census. Twenty-four were selected after attending a “Spotlight” event and filling out an application.
- Over 150 community members completed training to lead Study Circles groups in the topic of “Thriving Communities.” Over 1200 people participated in the six sessions that promoted discussion leading to action on issues around poverty in each community.
- Nearly 65 community leaders were certified as “LeadershipPlenty” trainers for their communities. These folks taught a series of nine sessions on topics ranging from working with groups, productive meetings, dealing with conflict, building partnerships, and working with the media. About 530 people completed the course delivered in their community.
- A visioning process further canvassed communities to find out where citizens wanted to see their towns in 3-5 years. From that response, a committee wrote a strategic plan that identified action steps to be taken to reduce poverty and encourage growth in their community.
- Horizons staff continued to work with the communities as they formed committees and began working toward the objectives in their plans. Community coaches connected them to resources and guided them through decision making and taking action on issues.
- Final “graduation” events in Summer 2008 were widely attended in all 21 participating communities, with funding of \$10,000 from NWF available to each for use toward implementation of their strategic plans.

### IMPACTS

- With the assistance of a community coach provided by the SD Cooperative Extension Service, communities recruited participants from diverse backgrounds and experiences for each segment of the program. This diversity in age, education level, socio-economic background, ethnicity, and experience demonstrated the power of involving ALL types of citizens in mobilizing around issues.
- Each community completed a strategic plan with an average of 5-7 goals and 6-8 objectives and action steps under each goal. The plans gave each community a direction, but will also be revisited every 6 months to allow for changing environments.
- Poverty Awareness & Reduction: Community projects include Family Nights where families turned off the TV and enjoyed food and games together, the establishment of at least two thrift stores, four community gardens, two wellness fairs, and several Paint SD projects where volunteers painted a low-income resident’s house. A teacher inservice in Sisseton brought in a speaker on poverty.
- Expanding Leadership Capacity: At least four new mayors have been elected from Horizons participants, with several other public offices gaining new leadership. Committees working on action projects have gained new leaders with increased confidence.
- Using Processes to Achieve Goals: At least six grant writing workshops were organized by communities. Town meetings around issues now include a broader range of state and regional resource providers who have been invited by communities. One partner stated that Horizons communities are recognizable due to their organization and confidence in their direction.
- Mobilizing Around Community Issues: A Technology Center is progressing in Estelline. Fitness Centers are open at Sanborn Central and Faith. Youth Centers are set up in Tyndall, Scotland and Tripp. Farmers Markets have opened in Estelline and Philip. Philip repeated the Study Circle process to find a direction for a new public library. Tyndall intends to offer credit to high school students taking LeadershipPlenty. Wagner and area Native communities are using Study Circles to take action on Racism. These issues were identified and brought to action by citizens.
- Hope & Vision for the Future: Youth participation led to the creation of ice skating rinks, a skateboard park, youth centers, and free movies in the park. Work on racism, entrepreneurship, improving recreational sites, and supporting new businesses show optimism in digging into deeper and more complex issues.

- Increased Civic Engagement: Citizens in Conde rallied to try to save their school, nearly every community increased pride by conducting huge city-wide cleanups, Tripp just renovated and sold a house to a new family by using volunteer labor, Armour built two new rentable lake cabins available at low-cost to area families.
- Creating New Partnerships: Community organizations are partnering in new ways on issues. City Councils and Horizons volunteers are working together. State and regional partners are present at town meetings around issues. Youth and adults are working together on high-priority issues. Four new community foundations have started.

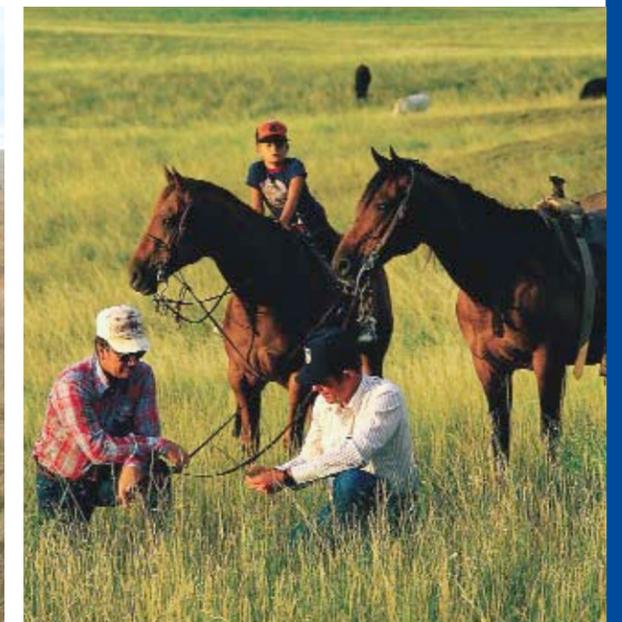
## COLLABORATORS

- Northwest Area Foundation as funder, USDA Rural Development, RC&D district offices, Governor's Office of Economic Development (GOED), SD Community Foundation, SD Rural Enterprise, SDSU Engineering Dept., SD Planning Districts, Small Business Development Centers, several local resource providers.

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# Native American Programs



## CIRCLE OF SUSTAINABILITY IMPACT

### WHAT WAS DONE:

The Circle of Sustainability program represents an effort by the North Central Sustainable Agriculture Research and Education program with North and South Dakota Extension Services to examine opportunities for improved programming in Native communities. The original exploratory meeting was held in June of 2007 in Bismarck, attended by over 40 representatives from reservations as well as Cooperative Extension and the SARE Administrative council. The meeting included a dialogue on traditional sustainable practices and a tour of activities on Standing Rock Reservation. The participants concluded that a more robust conversation including more tribal partners was required, and planned the Circle of Sustainability listening sessions that were held this year at four South Dakota and two North Dakota reservations.

South Dakota events were held on Pine Ridge, Rosebud, Cheyenne River and Standing Rock Reservations this summer. The over 100 participants included representatives from tribal government, tribal colleges, youth and other service organizations, Extension, USDA SARE and other agencies. Each location hosted tours of sustainable practices and facilitated conversations regarding sustainability and the role of SARE and Extension with the partner groups.

### IMPACT:

Evaluations were held in each location. Some of the conclusions drawn were:

- More emphasis needs to be placed on sustainable agricultural development in “Indian Country”
- People were unaware of the opportunities available through SARE, but very interested in participating in the programs.
- The networking among educators, tribal representatives and other organizations during the meetings was very helpful in developing short-range goals.
- There is a strong interest in pursuing longer term projects at each location, involving SARE and Extension partnerships.

Other Impacts:

- Three new Farmer/Rancher grants initiated
- Two community grant proposals started.
- One Research and Education grant invited for full proposal

### COOPERATORS: Agencies and other

Oglala Sioux Tribe, Rosebud Sioux Tribe, Cheyenne River Sioux Tribe, Standing Rock Sioux Tribe, SDSU Cooperative Extension, North Central SARE, other community organizations. From Cooperative Extension, Shawn Burke, Arlo Iron Cloud, Teddie Rae Herman, Dawn Waln, Justine Pabst, Robin Salverson, Roger Gates, Karen Pearson.

### FUNDING SOURCES FOR YOUR ACTIVITIES?

North Central SARE.

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