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Bill Vasey's grandfather homesteaded in Dawson County in 1877. Within 20 years there was ditch irrigation, albeit unreliable. Vasey's father drilled one of the first irrigation wells in the area in 1915.

"There was unlimited water," Vasey said. "No one else was pumping."

Nearly 100 years later, Nebraska has almost 91,000 active irrigation wells. Declining water tables and a near-decade-long drought in parts of the state mean water use must be efficient in light of moratoriums and other limited-use regulations.

University of Nebraska–Lincoln Extension conducts field days and workshops on water and energy conservation. Keith Glewen, UNL extension educator based at Mead, helps coordinate some of them.

"We have the science and technology to conserve water and save energy," Glewen said. "What we need to do now is show irrigators how to do it."

Bill Kranz, UNL irrigation specialist, teaches producers about irrigation management involving crop water needs for each field and newest technologies such as ET gauges, Watermark soil moisture sensors and efficient sprinkler packages.

ET gauges simulate water transpiration from the plant leaf, verifying whether it has the right amount of water. Watermark sensors measure the amount of energy plants must exert to draw moisture from the soil.

Mechanization and technology have greatly improved from the first 1970s water-driven, high pressure center pivots. Today's motorized pivots have low-pressure nozzles that gently spray water closer to the ground.

"We can now put water on where nine-tenths of every inch pumped gets on the ground and is usable by the plant," Kranz said.

Much irrigation is for the state's corn crop. In 2006 Nebraska produced nearly 1.2 billion bushels of corn, much of it on irrigated land. For 2007, estimates are that 10 percent to 20 percent more of Nebraska's cropland will be planted in corn.

Jon Holzfaster of Paxton chairs the Nebraska Corn Board, for which extension taught a field day last year at Mead, and will Sept. 6 at North Platte. Discussions about ongoing education, depending upon new information and need, also have taken place, he said.

Holzfaster said the corn board thinks it is important to take advantage of the latest technology and research that can be taught to producers through UNL extension education.

"Everybody picks up something different" at the sessions, Holzfaster said, adding that even a 1 percent reduction in water use can be significant.

Of the 76 individuals who attended extension's Irrigation and Energy Conservation Field Day at Mead in 2006, 82 percent said they probably or definitely planned to make changes in their operations based on what they learned.

Nearly 100 people at four locations attended extension’s 2006 Agricultural Water Management Series. They farm or manage approximately 207,000 acres of irrigated land and placed an average value on the knowledge gained at $11.53 per acre, or about $2.38.
Dean’s comments

An excellent return on investment.

That’s what Nebraska receives when it invests tax dollars in the Institute of Agriculture and Natural Resources (IANR), of which extension is a proud part, according to the “At Work for Nebraska” study recently completed for IANR by Battelle of Columbus, Ohio.

Seeking an independent review of IANR programs to provide information and insights for strategic planning, the Institute chose Battelle, a highly respected nonprofit research and development organization specializing in global science and technology.

We received those insights, and a tremendous affirmation of the work we do for Nebraska. The report says:

“IANR’s research, teaching, and extension activities are having powerful impacts on Nebraska’s economic growth and on economic and social sustainability in the State of Nebraska. In FY 2005, IANR received an annual appropriation of $71.6 million from the State of Nebraska.

... the estimated annual impacts of IANR programs far exceed $750 million in direct economic output and savings benefits for Nebraska, a leverage ratio conservatively estimated to be greater than ten to one. This number does not include the impact of IANR’s direct and indirect expenditures, which represents an additional leverage ratio of approximately five to one. Taken together, the impact of IANR’s programs and expenditures represents a leverage of state funding that exceeds fifteen to one.”

It also says: “IANR strives to be a holistic organization – working to integrate research, teaching, and extension activities to provide pragmatic programs that sustain, expand, and develop the agriculture-based economy and social fabric of the state. ... The advanced research, educational offerings, and programmatic activities of IANR empower people and communities to solve problems, stimulate economic development, and improve lives.”

The wonderful, diverse work done by extension throughout Nebraska is portrayed in those two statements, and highlighted many times in the report.

The “At Work” study speaks of research and extension activities to: ensure animal and plant health; promote Nebraska bioscience; promote human nutrition and health; help ensure the sustainability of the state’s natural resources; develop improvements in food safety; strengthen Nebraska’s children, youth, and families.

It notes the way we undertake extension activities focused on sustaining and revitalizing Nebraska’s communities and stimulating economic development and quality-of-life improvements.

Each issue of UNL Extension Connect describes some of the exciting programs and activities that fulfill our mission and are examples of the “At Work” report’s findings. It’s very proud of the ways extension’s important contributions to Nebraska are portrayed in those two examples.

To see the full report, visit http://atworkformytime.unl.edu.

Elbert Dickey
Dean and Director
INSTITUTE OF EXTENSION CONNECT
University of Nebraska–Lincoln Extension

*No state tax funds were used in financing this study.
Wildlife management can prevent, control damage

Are moles taking up residence in your yard? Are rabbits eating away at your landscape? If so, you’re not alone.

These kinds of pesky, costly problems are getting solved throughout North America, thanks in part to University of Nebraska–Lincoln Extension.

Extension in Nebraska has gathered research-based information from a variety of sources for its book, “Prevention and Control of Wildlife Damage.” First published in 1981, the fifth edition is due out in 2008, said Scott Hygnstrom, UNL wildlife damage management specialist.

“It’s used widely throughout the United States, Canada and Mexico, and we have sold it in several other countries,” Hygnstrom said.

Children also find the book useful when writing reports on wildlife for school, he said.

The book, which has information from 100 U.S. experts, is contained in a two-volume three-ring binder to allow for easy copying of materials. According to a survey of users, Hygnstrom said the book is estimated to save $210 million in resources and $220 million in labor annually.

The book is available at USDA Animal and Plant Health Inspection Service’s Wildlife Services offices and most county extension offices nationwide. In addition, UNL wildlife damage control information can be found at two national collaborative Web sites: the Internet Center for Wildlife Damage Management at http://icwdm.org and http://eXtension.org.

Hygnstrom said UNL is the third university to lead content development for eXtension, a collaborative partnership of land-grant universities that aims to deliver online research-based information to the public.

The book and Web sites are the leading references on wildlife damage management nationally and internationally, Hygnstrom said. His main focus is on Nebraska wildlife problems such as chronic wasting disease in deer. In one current project, six graduate students are helping Hygnstrom study the disease in the Panhandle, to predict its movement and test different control strategies.

— Lori McGinnis

Hygnstrom can be contacted at
(402) 472-6822.

Carbon credits extend no-till benefits

The benefits of no-till farming are becoming more profitable.

Leaving plant residue on top of the ground helps conserve soil moisture, prevent erosion, and increases organic matter and fertility. Now with carbon sequestration offset payments, continuous no-till farming can provide additional income.

The payments are for voluntarily reducing carbon in the air.

“No-till is an excellent conservation till-age practice” even without the added economic incentive, said Randy Pryor, University of Nebraska–Lincoln Extension educator based in Wilber. It “uses less fossil fuels and less labor, and decreases machinery cost.”

With soil undisturbed, less carbon goes into the atmosphere. Some say no-till and other carbon-reducing practices could help reduce greenhouse gases and global warming.

Pryor informs Nebraska producers about the Chicago Climate Exchange (CCX), a voluntary pilot greenhouse gas emissions trading program in North America and Brazil. Its members include universities, states and Fortune 500 companies. They reduce carbon emissions directly through company change, or indirectly by buying carbon credits from producers practicing conservation tillage.

So far, Pryor said, 800 Nebraskans have contracted nearly 576,000 acres for carbon credits. Gage County has the highest number of contracts at 130, he said, adding most contracts are in southeast Nebraska, which has a high percentage of no-till.

Producers this spring are expected to receive about $2 per acre, though Pryor said if the carbon offset market gets higher, no-till could become more widespread and Nebraska could set a nationwide precedent.

Pryor has answered hundreds of questions from Nebraskans about carbon sequestration, given presentations, and developed Web sites and fact sheets.

“If there’s money on the table, Nebraskans need to be educated,” Pryor said, so they have the facts and can make decisions based on the most up-to-date information.

— Cheryl Alberts

Glewen can be contacted at
(402) 624-8030.

Pryor can be contacted at (402) 821-2151.
Vegetation takes up nutrients, eliminates holding ponds

Fifth generation producer Doug Ferguson knew the family livestock facilities near Blue Springs needed some improvements and had formulated some ideas on how to stop livestock waste runoff.

Ferguson called Chris Henry, University of Nebraska–Lincoln Extension biological systems engineer, to get professional advice. Henry had ideas different than Ferguson’s — ideas about Vegetative Treatment Systems (VTS).

A VTS has a solids settling basin, an outlet and a perennial grass vegetative treatment area to replace the typical holding pond. A valve releases liquid waste into the vegetative area. Nutrients are taken up by the grass, which can then be harvested and safely fed to cattle.

“It was a lot more simple than I had anticipated,” said Ferguson, so convinced of the concept that he helps with VTS workshops for other cattle and dairy producers with fewer than 1,000 head.

Henry and Jason Gross, UNL project coordinator and technologist, design and build alternative demonstration systems for producers who want to proactively improve their facilities rather than risk a complaint.

Henry coordinates extension’s Livestock Producer Environmental Assistance Project, which receives funding from the Nebraska Environmental Trust. Projects must be approved by a committee that includes extension, the Nebraska Department of Environmental Quality, and the Nebraska Natural Resources Conservation Service, with leadership by the Nebraska Farm Bureau.

In the last six years throughout the state, 31 demonstration projects have been completed.

“We are demonstrating new ideas and concepts on working farms; on each farm we try something new, which allows us to further our educational mission,” Henry said.

Daryl Andersen of Fairbury sought extension’s help when cattle crossing a stream eroded the stream bank. The result is an inexpensive, fenced concrete walkway the cattle must use to cross the stream.

“The stream bank is healing itself,” said Andersen, also water quality specialist for the Little Blue Natural Resources District.

“Most people are interested in doing what they can to keep their surface water clean,” he said. The fact that people are willing to have extension on-site and make recommendations for their operations shows they trust extension, Andersen added.

Duane Burd has a 60-head dairy 12 miles west of Lincoln. Henry designed a vegetative treatment system, septic holding tanks and a small pump to occasionally transfer milkhouse wastewater to the treatment area.

Extension “knows what the laws are, what the research is. You just can’t get any more educated people to come out and help,” Burd said.

Blayne Glissman, an inspector for the Nebraska Department of Environmental Quality, said Henry and Gross have taken the VTS concept to a “new level of sound science.”

VTS benefits the family farm livestock producer because VTS systems often are more affordable than traditional solutions, Glissman said, and the Nebraska Environmental Trust benefits because its funding is used effectively to protect the state’s environment and waters.

More than 90 percent of Nebraska’s cattle operations have less than 1,000 head and few if any have adequate runoff control, Henry said. He said the VTS model works for them, as well as beginning farmers and those feeding distillers grains from the state’s growing ethanol industry, to be economically viable, competitive and environmentally stable.

No longer is it acceptable to keep cattle in an open lot without runoff control, Henry said, adding producers should avoid putting money into environmentally unfriendly facilities.

Henry said their VTS development work is the only type of its kind in the United States, and if it becomes mainstream, could be worth $152 million in savings for Nebraska’s cattle industry.

— Cheryl Alberts

Henry can be contacted at (402) 472-6529.
Extension education helps fruit businesses blossom

The fruitful businesses of Joyce Sears and Dick Rezac are due primarily to a lot of hard work on their part — and University of Nebraska–Lincoln Extension.

Both say extension knowledge and expertise have helped them successfully grow wild plums, chokecherries, raspberries, grapes and strawberries as their businesses.

Sears, of Ravenna, took extension’s Master Gardener training to help relieve stress from her medical records job. She enjoyed gardening and being a Master Gardener volunteer so much she later earned a two-year commercial horticultural degree.

In 2003 Sears and her husband Paul moved to their newly purchased farm near Ravenna. They first planted raspberries and strawberries “just to see if they’d grow,” and later, grapes.

That was the start of their Cedar Hills Vineyard and a U-pick fruit business, plus a commercial kitchen for making fruit jellies and up to 50 pies per week, and a tasting room for the Sears’ own label wines.

“We thought we were just planting grapes. It just kind of snowballed,” said Sears, who recently added monthly dinners featuring Nebraska foods to her business repertoire.

The couple attended extension workshops taught by Jim Hruskoci, UNL extension educator based in Grand Island. Hruskoci, who had a U-pick strawberry farm in the 1980s, taught them how to use underground tape irrigation, and how to prune and thin their vines for larger, sweeter grapes.

Rezac, of Grand Island, has about 10,000 strawberry plants for his U-pick business, The Farm. Hruskoci connected him with suppliers, advised how far apart to plant strawberries, and how to water, weed and replant them, Rezac said.

“No doubt he has done it and was successful,” Rezac said. “Why reinvent the wheel? His knowledge is superior.”

Hruskoci’s research and experiences with his own fruit trees and plants add to the extension workshops he teaches. About 10 percent of workshop participants say they are contemplating developing a commercial enterprise, he said.

“I want them to succeed,” Hruskoci said. “I’m sharing everything I know with these growers.”

In the last six years, Hruskoci has taught at least 65 extension tree and small fruit workshops, reaching approximately 900 people in 12 towns. He has taught Master Gardener classes for 22 years, teaching volunteers such as Sears to help and learn from others.

His advice: “Start small, grow slowly and take on only what you can handle.”

Hruskoci now is experimenting with the Saskatoon berry. The plant is similar in taste and antioxidants to blueberries, which he researched for his doctorate.

Typical blueberry plants do not tolerate the higher pH of Nebraska soils, Hruskoci said, but Saskatoon berries might. The shrub is native to Canada prairies and is highly desirable for jams and syrups.

“They can’t get enough of it,” said Hruskoci, who spent a week in Canada with a Saskatoon berry expert, learning everything he could and legally bringing back 100 shrub plants in suitcases.

If the berry shows potential for Nebraska and catches on, he will propagate more shrubs and encourage home gardeners to grow them. Then Hruskoci would hope to “position Nebraska ahead of anyone else in our country” in growing the berries.

Nebraska’s growing conditions suitable for many fruits has expanded entrepreneurial opportunities in the state. Steve Gamet, UNL viticulture technologist, said Nebraska has approximately 120 vineyards and about 20 wineries that are or soon will open.

Jim Schild, extension educator based in Scottsbluff, has worked with many of the 30 growers in that area who supply grapes to four local wineries. Grape sales are a nice income supplement, Schild said, adding the wineries are working together to develop a marketing plan for a wine trail for visitors to enjoy locally produced wines and local history.

— Cheryl Alberts

Hruskoci can be contacted at (308) 385-5088.
Agricultural women talk similarities

Despite cropping differences, when women from Nebraska and Tasmania talk about agriculture, they talk a common language.

Women from Nebraska have visited the small island south of Australia and island residents have visited Nebraska. It’s a part of an exchange program started in 2003 through University of Nebraska–Lincoln Extension’s Women in Agriculture program, said Meg Kester, program coordinator.

Networking is the primary advantage of the exchange trips, Kester said, adding “some of our women have struck up some good friendships” learning about the roles of women in agriculture in other parts of the world.

Leah tenBensel of Cambridge was one of approximately two dozen Nebraskans to spend three weeks in Tasmania in 2003, visiting farms and picking up knowledge.

tenBensel was surprised to see the widespread growing of green beans and peas as agricultural crops on the island. The knowledge she learned about produce diseases and fertilizers prompted her to grow her own vegetables, which she sells at local farmers markets.

Two years after the Nebraska trip, about 12 Tasmanian women spent 10 days in Nebraska. Kester is planning a 2008 trip for Nebraskans to Tasmania.

The Tasmanians “have a really deep interest in finding out how other people do what they do. They find it very intriguing,” Kester said.

Some women from Australia were among the nearly 400 participants to attend WIA’s 22nd annual conference last September.

— Lori McGinnis

Kester can be contacted at (402) 472-1771.

‘Treasures’ activities build family relationships

 Blow up one balloon for each activity in your family: balloons for the parents’ jobs, balloons for the children’s school, balloons for the son’s football practice and the daughter’s soccer practice. Add more balloons for all the other activities in which the family is involved.

Now try to keep all the balloons in the air at once.

“It’s hard to keep them all in the air, and some pop,” said Kathleen Lodl, University of Nebraska–Lincoln Extension 4-H youth development specialist.

The balloons illustrate the lives of busy family members as well as the stresses of trying to fit everything in. It is one of the activities contained in a popular UNL Extension Family Treasures book.

The 173-page user-friendly manual is full of hands-on activities designed to help develop family relationships, Lodl said. It was developed in 2006 after an extension team saw a need for families to determine a plan to strengthen relationships and handle stress and crises.

Family Treasures is based on six universal family strengths developed by university researchers, including John DeFrain, UNL family and community development specialist. The strengths include appreciation and affection, commitment, positive communication, managing stress and crises, spiritual well-being, and enjoying time together.

The first 1,000 copies were sold out in 10 months but more are expected to be printed soon.

“The fact that 1,000 hardcover copies disappeared in 10 months without the advantages of the professional marketing arm that so many big publishers have, we are quite pleased,” said DeFrain, who collaborated on the book.

DeFrain said he and others hope to take the book to an international audience, as some experts in several other countries have shown interest in a book geared to their cultures.

— Lori McGinnis

Lodl can be contacted at (402) 472-9012.

Would you like to treat a friend?

Do you know someone who would like to receive UNL Extension Connect who isn’t currently receiving a copy? Please send the name and address to: Editor, UNL Extension Connect, P.O. Box 830918, University of Nebraska–Lincoln, Lincoln, NE 68583-0918. We’ll do the rest. Thanks.

Name: ____________________________________________

Address: __________________________________________

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Children make and like healthy snacks

A candy bar may make an easy snack, but a group of students in the Kearney Public Schools are learning to reach for something healthier — and they’re liking it.

University of Nebraska–Lincoln Extension is teaching the “Six Easy Bites” 4-H nutrition curriculum after school to students in four elementary schools, said Carol Schwarz, extension educator based in Kearney.

With extension education, children are learning to eat healthy snacks and taking home nutritious recipes, she said.

“It’s giving them skills to prepare a healthy snack rather than grab a candy bar,” Schwarz said. “They realize it’s good when they eat something healthy.”

Shelby Peterson is one student who realizes that. Shelby, 7, has cut back on drinking soft drinks and replaced candy with carrots, said her mother, Geri Peterson.

“She loves to cook and she’s anxious to start trying these new recipes,” Peterson said.

Through Six Easy Bites approximately 80 children are learning about USDA’s MyPyramid nutrition guidelines, general food safety and proper hand washing.

While such topics often are taught in schools this is a hands-on program, Schwarz said. Children actually make snacks using healthy recipes, then take the recipes home in a file box.

They also do a hand-washing experiment using a substance that glows when their hands are not thoroughly clean.

“They’re loving it,” Schwarz said.

Students participate for one hour every other week, said Kisha Paul, program director of the Kearney Community Learning Center, which operates the after-school program. Extension’s nutrition lessons are one part of the program, and it is impacting the children, she said.

“They’re learning healthy eating habits. They’re building menus they can share with their parents,” Paul said. “The kids are so excited to tell them about the things they have learned.” Parents have indicated they are happy their children are learning about healthy eating, she added.

The children use healthy ingredients to make menu items such as smoothies and fruit yogurt crunch, Paul said. Sometimes the children are hesitant to try their creations, but once they do “they’re surprised they like it.”

“The students are getting some valuable information they may not be getting anywhere else,” Paul said of extension’s education.

— Lori McGinnis

Carol Schwarz, UNL extension educator based in Kearney, helps Amber Neben of Kearney make a smoothie during an after-school “Six Easy Bites” session on good nutrition.

Nutritious diet nets medical benefits

Eating a healthy diet can be challenging, but University of Nebraska–Lincoln Extension is trying to make it easier for people with limited incomes.

Wanda Koszewski, UNL nutrition specialist, coordinates extension’s Expanded Food and Nutrition Education Program (EFNEP) in Nebraska. She and others teach people on limited incomes how to stretch their food dollars, and eat healthier and safer.

Participants learn, for example, how to read food nutrition labels, compare food prices and keep food safe.

In 2005-06, 823 participants graduated from EFNEP in Douglas, Sarpy, Adams and Hall counties, and the city of Lincoln. Koszewski said most made positive changes in nutrition practices, food resource management and food safety behaviors.

Several participants “didn’t know how to cook and did not practice good food safety behaviors,” Koszewski said. Many had thought they knew about proper nutrition and food safety but after completing the program, realized they did not, she said.

Carrie Schneider-Miller, extension educator based in Omaha, has seen several EFNEP success stories. A mother who started planning family meals, for example, no longer runs out of food money at the end of the month. Another improved her health after starting to read food labels.

Based on participant knowledge gained, Koszewski estimated every $1 spent on EFNEP results in a health care savings of $2 to $8 in preventing or delaying the onset of nutrition-related chronic diseases and conditions.

The companion Food Stamp Nutrition program, offered in 42 Nebraska counties, had more than 1,000 graduates in 2005-06, Koszewski said.

— Lori McGinnis

Koszewski can be contacted at (402) 472-7966.
Character on the Job

Every spring for the past five years, northeast Nebraska fifth- and sixth-graders have sharpened their skills in a daylong Character on the Job workshop, exploring ways to profitability by buying and selling pencils.

Vickie Greve, University of Nebraska–Lincoln Extension 4-H youth development specialist, developed the program as a way to combine character education with business skills.

“Children learn how a business works in the community and the importance of being a business person and consumer with good character,” Greve said.

Kristi Rastede, UNL Children, Youth and Families At Risk coordinator, helps organize the workshop, sponsored by UNL Extension and held at the Northeast Community College Lifelong Learning Center in Norfolk. So far 1,221 children have participated.

Character on the Job teaches youth teams about ethics and entrepreneurship by starting mock pencil businesses while applying the six pillars of character from Character Counts!

Youth hear about and practice trustworthiness, respect, responsibility, fairness, caring and citizenship. They develop their business plans, set up shop, pay rent, advertise, and buy and sell pencils using Character Counts! money.

Rastede said the most frequent workshop feedback she receives relates to working with others.

“Teamwork is the way to go” and that includes working with new acquaintances, Rastede said. Teachers often comment that after the workshop they see their students work together at a much higher level.

Warren Jensen, sixth-grade teacher at Allen Consolidated Schools, said working together with individuals of varying abilities and skills, and learning how to delegate are workshop benefits, as are enhancing skills in economics, mathematics and communications.

After the workshop, Jensen looks for opportunities for his students to exemplify character, such as respecting the flag, holding a door open for another person or picking up litter.

“It does have some carryover,” Jensen said of the workshop, especially when positive behaviors are modeled and discussed.

Denise Schmit of Osmond Community School has taken her fifth- and sixth-graders to the workshop, and likes the business aspects such as figuring interest while competing for profits.

“So little of our texts cover economics principles,” Schmit said, adding students also are exposed to ethical situations such as what to do when a customer overpays.

A high school student who works in Schmit’s office still speaks of the workshop she attended.

“It’s not something they forget right away,” Schmit said.

Rastede said character emphasis deals with acts of civility that “seem to be disappearing slowly over time.”

During the workshop, character cards are given for exemplary behavior and fines are given for lack of character. Many more exemplary cards are given than fines, Rastede said, with a ratio of about 75 cards to every three fines.

At the end of the day, students receive a Character on the Job pencil for their participation.

Children whose parents own a business can better appreciate the family’s livelihood after the workshop, Greve said.

“I didn’t know running a business was such hard work,” one child said.

— Cheryl Alberts

Greve can be contacted at (402) 370-4004.