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Probe investigates extent of dying frogs and toads; reptiles swabbed

Fungus and other environmental factors are causing a worldwide crisis among amphibians, and the staff at Henry Doorly Zoo in Omaha wants to know if frogs and toads in Nebraska are equally affected. University of Nebraska–Lincoln Extension is trying to help find out.

Frogs and toads are dying around the world, and a major cause is believed to be a fungus called chytrid, said Danny Morris, Henry Doorly assistant director. Loss of suitable habitat, logging, urbanization, pollution and some agricultural practices also may be factors, he said.

"The overall crisis is huge and threatens extinction of the species," Morris said.

According to the zoo's Web site, nearly 6,000 known species of amphibians live in the world; almost 2,000 are threatened with extinction.

Dennis Ferraro, extension educator based in Omaha, said zoo officials asked for help to determine the extent of the amphibian problem in Nebraska. The query prompted the start of an investigation.

"The goal is to find out if our own amphibians are in decline," Ferraro said. "If there's a decline, we'll learn why the decline is occurring."

Amphibians are vital to the world's ecosystem, Morris said. Frogs and toads control populations of disease-carrying insects, and skin secretions from some amphibians are being used to help treat specific diseases such as cancer.

Henry Doorly has joined with other zoos and organizations in the Amphibian Conservation Initiative to address the issue on a global scale. Meanwhile, zoo officials also thought it important to investigate the situation locally, "and we're working to get a handle on the amphibian problem in Nebraska," Ferraro said.

Ferraro also is working with area pet stores to address dangerous salmonella bacteria that can potentially be spread through reptiles such as turtles, iguanas and corn snakes.

With help from a UNL student involved in the Undergraduate Creative Activities and Research Experience (UCARE) program, Ferraro swabs the mouths of reptiles to investigate the spread of salmonella.

Ferraro also has swabbed about 500 garter snakes across Nebraska in the last six years. He said the majority of salmonella tests came back negative. The student is researching the issue in pet stores, and of about 100 reptiles tested so far, salmonella was shown in about half of them.

Ferraro said the statistics indicate something about reptiles in captivity is bringing in the bacteria. Ferraro's goal is to develop a protocol for pet stores that will curtail the incidence of salmonella by the end of the year.

"There will be a guide the pet stores can hand out with the pet," he said.

Ferraro has been working with Henry Doorly staff members since 1990 to help them with pest management and other issues in



Brett Hampton



Dennis Ferraro, extension educator based in Omaha, is helping staff at Henry Doorly Zoo determine whether the numbers of amphibians in Nebraska are declining. A fungus is believed to be killing frogs and toads worldwide.

the zoo's Lied Jungle, Desert Dome and other areas.

— Lori McGinnis

Ferraro can be contacted at (402) 444-7804 or (402) 472-8248.

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Dean's comments

Water and energy. So much is being said about these two critical issues, and for good reason.

Water usage already is curbed in parts of urban and rural Nebraska, and more may be coming.

Decades of research-based information from the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln can help Nebraskans learn how to manage with less water.

In the area of crop water use estimation, for example, the university is a national leader. UNL Extension is active in making this research-based information available throughout the state. Extension provides education producers can use to make better decisions relating to practices such as irrigation management and evaluating cropping system alternatives when water supplies are limited.

Our summer irrigation management offerings include dozens of programs such as the Nebraska Agricultural Water Management Demonstration Network. In it, extension is working with more than 120 cooperators in eight Natural Resources Districts, demonstrating the use of soil moisture sensors and evapotranspiration measurement.

Other extension irrigation management activities this summer include limited water demonstrations in the Republican River Basin and in the Pumpkin Creek watershed in the Nebraska Panhandle. Eight locations with center pivot systems are demonstrating the impact of reducing irrigation by 25 percent. Many of these sites will host tours or field days late this summer. Several crop management and diagnostic clinics at the Agricultural Research and Development

Center near Mead include irrigation water management. The annual Soybean Field Days at four Nebraska locations and Solution Days near York focus on water. A summer water conference and an irrigation and energy conservation workshop for corn growers are scheduled, both at North Platte.

Many of these events are supported by the Nebraska Corn Board, Nebraska Association of Corn Growers, Nebraska Soybean Board, Natural Resources Districts, seed corn companies and others. We thank them for helping benefit our state and our producers.



Elbert Dickey

Extension also is involved in the energy arena. Extension energy work groups are helping develop informational tools specific to issues surrounding ethanol and other biofuels, which we expect in the long run will positively impact economic viability and sustainability of rural communities, agriculture and the environment.

For example, monthly Web-based biofuels forums targeting extension educators and extension stakeholders will discuss biodiesel, co-product utilization, community development, water quantity, cropping systems and economics. Information from these forums is available through extension educators.

Extension is hard at work carrying the university's research-based information throughout the state, providing critical tools to help make wise decisions relating to ethanol and biodiesel.

In just these two examples — water and energy — UNL Extension helps lead the way for Nebraska and Nebraskans' betterment. UNL Extension is at work for Nebraska.

Elbert Dickey
Dean and Director

University of Nebraska–Lincoln Extension

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Partners with Nebraska

Land-grant universities work with the people they serve. NU's Institute of Agriculture and Natural Resources does so in priority areas of food, agriculture, agribusiness, natural resources, people and communities. We teach, discover new knowledge through research, and extend that new, unbiased information across the state and beyond through extension.

University of Nebraska–Lincoln Extension is part of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln.

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Knowledge and proper equipment can help prevent injuries from popular ATVs

Don't be fooled. ATVs are not toys and they're not bikes.

ATVs — All Terrain Vehicles — are the leading cause of agricultural fatalities in Nebraska, said Dave Varner, University of Nebraska–Lincoln Extension educator based in Fremont.

With more than 7 million ATVs in use nationally last year, operators include “a tremendous number” of children who lack the size, strength and knowledge to operate them safely, Varner said.

Varner said 23 Nebraskans died from ATV accidents from 2001 through 2006; in 2006, six of 18 farm fatalities were due to ATVs.

“ATVs have gone from a work vehicle to a work and a recreational vehicle,” said Sharry Nielsen, extension educator based in Minden. She said children driving ATVs often can't easily reach the handlebars and brakes.

Children's size and maturity should be considered before allowing them to operate an

ATV and even then, it should be a smaller vehicle. For example, children ages 12-15 should not operate an ATV with an engine size larger than 70 cubic centimeters.

The ATV operator should be the only person on the vehicle and should drive slowly for the terrain and conditions, Nielsen said, adding ATVs shouldn't be driven at all on pavement or gravel roads. ATVs can legally be operated on public roads if they are being used for farming or ranching activities.

Attire should include closed-toe shoes, long pants, gloves and most importantly, a proper fitting helmet. ATV-related injuries can include bumps, bruises, broken bones and severe leg burns, as well as death, Nielsen said.

Dave Morgan, extension safety specialist, said ATVs are popular for chores such as spraying weeds or carrying feed. He said even experienced adult operators can be injured if a vehicle flips.

Varner and Lisa Poppe, extension associate also based in Fremont, coordinated a grant-funded ATV safety day last December at Scribner. More than 90 youth and 50 adults attended. After the workshop, every youth participant did an ATV safety promotion activity such as writing a letter to the editor. Each then received a \$150 safety helmet.

“A lot of parents were very excited,” Poppe said.

Roger Koertner, a shooting sports 4-H leader from Fremont, demonstrated ATV safety with remote control models. He suffered a neck injury 20 years ago during an accident driving an ATV through a plowed field.

“The majority of accidents could most likely be prevented with knowledge and application of safety procedures,” Koertner said.

ATV safety is presented during extension tractor safety education, safety days, Farm Safety 4 Just Kids activities and other events. The National 4-H Council offers two ATV safety publications available through county extension offices. Some training is available through companies that sell ATVs, though Varner said often the sessions fill up quickly.

— Cheryl Alberts

Varner can be contacted at (402)727-2775.

Sportsmanship improves at competitive events

Tantrums on the playing field or in the bleachers? Not for participants of *Great Fans. Great Sports.*

The University of Nebraska–Lincoln Extension program promotes sportsmanship for competitors, coaches, fans and parents. *Great Fans. Great Sports.* is based on the six pillars of character and the decision-making tools of Character Counts! It began in 2005 as a collaboration between extension and the University of Nebraska Alumni Association.

Kathleen Lodl, extension 4-H youth development specialist who leads the program, said the alumni association is a partner because it has a firm belief that Nebraska has some of the best fans in the country.

“*Great Fans. Great Sports.* is an effort to get the great sportsmanship that is exhibited at UNL events to every community across the state,” Lodl said.

“Sportsmanship issues can be found in almost every community,” said D’Ette Scholtz, extension educator based in Grand Island. “It’s something that affects everybody. It’s important we teach children the value of good sportsmanship.”

Great Fans. Great Sports. has been presented to about 170 students in central Nebraska elementary schools. Afterward, nearly 67 percent of participants reported improved sportsmanship behavior. Children told organizers that the program taught them more about respecting others, playing by the rules and not cheating.

Brenda Aufdenkamp, extension educator based in North Platte, has taught the *Great Fans. Great Sports.* curriculum to 4-H families at the county fair, to high school rodeo associations, and at national conferences outside Nebraska.

“It’s so important for families,” Aufdenkamp said. “It makes them more aware of strong key values and the importance of recognizing them in a competitive arena.”

— Lori McGinnis

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



Ryan De Groff

Extension's Dave Varner and Lisa Poppe promote ATV safety and note the most important piece of ATV equipment is the helmet.

Money camps teach financial consequences, importance of saving

While money doesn't grow on trees, credit cards, payment plans and pay advances might make money seem more plentiful than it is to young consumers. University of Nebraska–Lincoln Extension money camps help adolescents become acquainted with financial realities so they can make wise decisions regarding their purchasing power.

Since 2004, nearly 600 sixth- and seventh-graders have learned about money management and financial concepts at camps held on the UNL East Campus and at the Lifelong Learning Center in Norfolk.

At the Norfolk camp, seventh-graders make household budget decisions through an interactive simulation designed by Myrna DuBois, extension educator based in Stanton, and Sandra Preston, extension educator based in Concord. Participants receive a “salary” and pay bills, taxes, insurance, expenses such as birthday gifts and unexpected emergencies such as flat tires.

“They learn money goes fast and quite a few have financial consequences,” Preston said. “Kids get a new realization of why they can't have everything they want.”

Preston said many young adults often don't think of losing their jobs or being unable to handle financial situations. In 2005, she said, the U.S. personal savings rate went negative for the first time since 1933. That means as a nation, individuals spent more than they saved. She said the average credit card debt per household is \$9,000.

“I see a lot of young people — especially in the 20- to 30-year age bracket — making choices that won't help them in the long term,” Preston said, adding financial problems can result in increased charges and interest rates, further compounding financial woes.

Leanne Manning, extension educator based in Wilber, coordinates annual money camps at UNL for sixth-graders. Youth learn about how wants and needs affect spending; budgeting; how checking and debit cards work; how credit works; how to count money and make change; how time impacts savings; and the influence of advertising on spending.

Teachers say their students significantly increase their understanding of these concepts by camp's end. Also after the camp, 65 percent



Sandra Preston

Brittney Kallhoff of Elgin, left, and Jordyn Urbanec of Neligh, ponder how to make the budget stretch during a recent extension money camp. Participants learn how checking and debit cards work, how time impacts savings and more.

of students said they planned to save more money.

Elizabeth Cote of Martell attended the camp as a chaperone for a group of Crete sixth-graders. She said her daughter, Kimberly, enjoyed the teamwork of putting on a shopping play and using macaroni for money.

Cote said her daughter now knows how to write a check, encourages the use of grocery coupons and is savvy to advertising gimmicks.

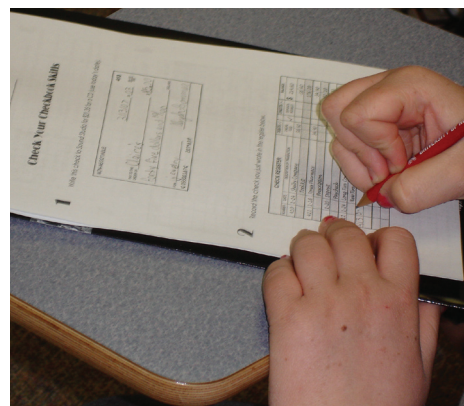
Manning, who sees some junior high age youth with their own credit cards, said some college graduates have \$8,000 in credit card debt, in addition to paying off student loans of \$40,000 or more.

Money camp participants “learn they need to start saving now for the future, no matter what their plans are,” Manning said.

Extension education on finances also is offered statewide for grade school children and high school students.

— Cheryl Alberts

*Preston can be contacted at
(402) 584-2234.*



Kristin Warner

Balancing a checkbook is an important skill learned at extension money camps.

Check out Extension's

Web site at:

<http://extension.unl.edu>

Water-saving garden gets high visibility

A flower-lined path leads visitors into a 3,000 square-foot garden at west Omaha's Village Pointe Shopping Center. Signs help identify the trees, shrubs, perennials and annuals, all newly planted, all with water conservation in mind.

University of Nebraska–Lincoln Extension planted the water conservation demonstration garden to help people learn how to save water in their own gardens. The Village Pointe garden is aesthetically pleasing yet low maintenance, said John Fech, extension educator based in Omaha.

The garden is on the southeast side of the mall and contains a mix of trees, shrubs, roses, perennials, evergreens, ornamental grasses and annual flowers. Plants were selected for drought tolerance and once established need watering only every three to four weeks, Fech said.

Extension also plans for the garden to help teach people how to better manage

natural resources at home. Signs posted in the garden explain what plants were used and how to conserve water when developing a conservation garden.

Volunteers in extension's Master Gardener program are at the garden several times a week to maintain the garden and answer questions from the public.

"We're educating people about proper sustainability gardening techniques so they don't just go to a store, buy plants on impulse and stick them in the ground," Fech said. "That leads to a wasting of water and fertilizer. It's bad horticulture."

Fech got the idea for a water conservation garden in Omaha after visiting about 10 similar gardens across the United States during a recent sabbatical. The visits helped him learn ways to develop a garden using conservation techniques, he said.

Extension partnered with Village Pointe, which donated a grassy patch on its property for the garden, and the Metropolitan Utilities District (M.U.D.), which donated money for plants and equipment needed to develop the garden.

The garden is placed so that people who attend the mall's summer concert events will walk right by. It also is near the site of a weekend farmer's market, said Kim Jones, marketing director at Village Pointe.

"Many know Village Pointe is known for its beautiful landscaping. We're proud to partner with extension to present another view of landscaping," Jones said. "We consider this a community offering and we love being a part of something that is so beneficial."

Mari Matulka, director of corporate communications for M.U.D., said the utility was excited to partner with extension on the project.

"Since water conservation is such an important factor during the lawn-watering season, this display gives consumers an excellent idea of how gardens can be beautiful and yet easy on the water budget," Matulka said.

— Lori McGinnis

Fech can be contacted at (402) 444-7804.

Eating disorders lead to greater problems

An upbeat topic, it is not; an important topic, it is.

Eating disorders can be life-threatening, and is a topic University of Nebraska–Lincoln Extension takes seriously.

"It's a very sobering thing to talk about," said Amy Peterson, extension educator and registered dietitian based in Osceola, and developer of extension's Starving for Success curriculum.

An estimated 10 million women and 1 million men in the United States suffer from eating disorders, and 5 percent to 20 percent will die from medical complications as a result, Peterson said.

Starving for Success initially was developed to educate inmates at the Nebraska Correctional Center at York about six years ago. Since then, nearly 700 educators at the Nebraska Department of Education and the Lifelong Learning Center at Norfolk, and central Nebraska high school students, have learned more about eating disorders through the program.

The curriculum raises awareness of eating disorders such as: anorexia, which is characterized by self-starvation and extreme weight loss; bulimia, characterized by secret binge eating then purging; and binge eating disorder, characterized by periods of compulsive overeating.

Feedback from audience members indicate the curriculum opens their eyes. Peterson said staff psychologists at the correctional center indicate that members of an eating disorder support group began to understand the health problems that can occur. One member said, "I didn't know you could die."

Eating disorder sufferers often are motivated by photographs of thin models in magazines and by the desire to have control over their bodies, Peterson said, adding that eating disorders also can lead to extreme weight loss, hair loss, tooth decay and organ failure.

— Lori McGinnis

Peterson can be contacted at (402) 747-2321.



Rachel Wright

Master Gardener volunteers April Sheridan, left, and Karlene Currier talk with extension educator John Fech about the new water conservation garden at Village Pointe Shopping Center in Omaha. Extension and other entities collaborated on the garden, which, once established, will require water only every three or four weeks.

Firefighters taking better care of selves

Full-time firefighters may find healthy eating to be difficult.

Just ask Jeff Engberg, a firefighter and paramedic with the Grand Island Fire Department.

"There's always been a concern in the fire service because of the nature of the job," Engberg said. "You can be relaxing at the fire station and that tone goes off. Your heart rate jumps a hundred beats."

The hectic pace prompts some firefighters to eat fast and on the run, Engberg said. That might be one reason that heart disease, not fires, is the No. 1 killer of firefighters on the job, according to the Centers for Disease Control and Prevention.

Recognizing this, Grand Island firefighters decided they wanted to learn more about nutrition and healthy lifestyles, and got help from University of Nebraska–Lincoln Extension.

Extension and St. Francis Medical Center in Grand Island joined to start healthy lifestyle classes for firefighters, said Cami Wells, extension educator based in Grand Island.

The first class in February was attended by the city's approximately 68 firefighters, who learned how to read a food label, follow the MyPyramid food recommendations and prepare healthy meals while on duty.

"Some have requested information on how to eat healthy when eating out and how to incorporate more fruits and vegetables," Wells said.

Because of the lessons, Engberg said firefighters are striving to eat more fruits and vegetables, as well as overall become more aware of the foods they eat.

—Lori McGinnis

Wells can be contacted at (308) 385-5088.



Techniques explored for Panhandle water savings



Gary Hergert

Kirk Laux of Bridgeport, a cooperator with extension's limited irrigation demonstration project, stands in a field of no-till dry edible beans planted into corn stubble in 30-inch rows, right, and 15-inch rows. Narrower rows create earlier leaf canopy, which improves weed control and is one of the techniques the project explored.

Sometimes everyone learns together.

That's often true with something new, such as new water-conservation measures that include no-till farming in the Panhandle watershed of Pumpkin Creek, a tributary of the North Platte River.

University of Nebraska–Lincoln Extension's three-year limited irrigation demonstration project there helped cooperating producers learn to better manage cultural practices and irrigation timing without significantly affecting grain yield, said Gary Hergert, nutrient management and soil quality specialist.

The project, funded through a Natural Resources Conservation Service grant, concludes this year. Hergert said UNL will continue to hone water-saving measures such as no-till in western Nebraska, noting most UNL no-till studies were conducted in eastern and central Nebraska.

No-till leaves residue from the previous year's crop on the soil surface, with seed planted through the residue into the soil. In conventional tillage the residue is turned under the soil surface before planting.

In the Panhandle, "we've learned there are

many agronomic and production factors we must perfect before making no-till and limited irrigation common practice," Hergert said.

Such factors include the Panhandle's short growing season, sandy soils, gusty winds and alternative crops. Weighing heavily is a seven-year drought compounded by a 14-inch irrigation limit in the Pumpkin Creek watershed. Some growing seasons producers in western Pumpkin Creek can pump only 5 to 8 inches of water, Hergert added.

Still, in many cases with careful planning and management, Hergert said crop yields for cooperating producers are equal to or better than full tillage.

Sometimes mindset is a factor. "Agriculture is about culture, and breaking tradition and making changes comes slowly," Hergert said. "People really have to have a commitment to do something different than in the past."

Panhandle producers are converting to no-till as they see the advantages of soil and water conservation, he added.

—Cheryl Alberts

Hergert can be contacted at (308) 632-1372.

Would you like to treat a friend?

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Crop residue helps save water and improves soil structure

No-till farmers have friends in low places — low-to-the-ground crop residue, a key component in no-till farming.

“Residue is our friend when it comes to conserving water and conserving soil,” said Paul Jasa, University of Nebraska–Lincoln Extension engineer and no-till advocate. “Water issues are really driving it for us.”

For the last seven years, parts of Nebraska have been or still are in a drought. Well-drilling moratoriums and/or water allocations have been implemented in many irrigated areas.

Along with saving water, no-till’s biological activity improves soil structure after five or more years, Jasa said.

Blake Johnson of Holdrege is at the five-year threshold with some of his corn and soybean fields. No-till allows water to soak into the field and soil becomes more malleable. Moisture probes simply glide into the soil, he said.

“It’s all about building soil structure, getting water to stay in the field and not run off,” Johnson said, adding he can get into a field nearly as soon as a conventional farmer after a rain. Besides water savings, Johnson said he saves time and fuel because he works the ground less.

In 2004 Jasa said Nebraska had 2.5 million acres of no-till corn, more than any other state. He said by 2006, surveys of 43 of Nebraska’s 93 counties showed an additional 1 million acres of no-till crops.

Chuck Burr, extension educator based in Holdrege, said more producers are converting from furrow irrigation to center pivot irrigation. Residue in furrows can inhibit irrigation water from going down the row, but furrows aren’t needed with pivots.

“No-till with pivot irrigation is a good fit,” Burr said. Residue left on the soil surface softens the impact of water dropping, which increases infiltration so the crop can make greater use of it later.

“If we can store more moisture then we apply less irrigation water,” Burr said.

Keith Glewen, extension educator based near Mead, said producers often are reluctant to change conventional farming practices.

“Growers want to be good at what they’re doing,” Glewen said. “They want to know it

works.”

A good way to start no-till is to plant soybeans into corn stubble, he said, because soybeans produce well even if the seed is planted unevenly or at varying populations.

“Soybeans are very forgiving,” Glewen said.

New planters today are suitable for no-till because they cut through residue, and uniformly and firmly place and cover the seed, Glewen said. Also needed is a tractor with enough power to pull the planter, and sprayers readily available because timely weed control is important.

Proper no-till requires no more herbicide

than conventional tillage, he said, adding conventional tillage brings weed seed closer to the soil surface and germination.

In early 2007, extension no-till conferences featuring Jasa and others at Holdrege and Mead attracted more than 500 participants from 61 Nebraska counties and four states. The 242 participants who responded to a survey said between them they manage more than 470,000 cropland acres. They estimated the knowledge gained to be \$8.28 per acre, for a total program value of more than \$4 million.

— Cheryl Alberts

Jasa can be contacted at (402) 472-6715.



No-till soils have good aggregation and pore space to better allow water to soak in and roots to penetrate. The sample at left was taken from a field no-tilled for 10 years, while the sample at right is from a continuously tilled field.



The no-till sorghum field, upper left, out-yielded the tilled field by 35 bushels per acre, even after five days of 100-degree plus temperatures. The residue in no-till reduced evaporation and kept the soil cooler.

Paul Jasa

Paul Jasa

Treatments help determine hay quality and value

You can tie it, wrap it, tarp it, pile it. But the test for baled hay quality — both prairie and alfalfa — comes with how well cattle eat it and how nutritious it is for them.

Steve Niemeyer, University of Nebraska–Lincoln Extension educator based in Burwell, said what counts is not how the hay stacks, but how it stacks up. Extension education helps producers determine both if additional investment is needed in their hay, and how much additional investment they can make and still be profitable.

An operation invests a large amount of time, labor and equipment each year to cut, bale and store hundreds of bales of hay, big bales of which can weigh 1,000 to 1,800 pounds each, Niemeyer said.

Protein is a key factor in hay value, and the best way to accurately determine that is to have the hay laboratory tested, he said.

“Hay quality is very important for the rations of beef cattle,” Niemeyer noted. “It’s a good idea to know what you have.”

Visually, good quality hay is free of mold, insects and deterioration, he said. Those conditions depend in part on how hay is cut, handled and stored. Hay covered or protected will keep better, Niemeyer said, but the cost must be evaluated to the benefit.

Niemeyer said more producers are net wrapping their hay because it keeps the bale bound tight so less hay falls out, less hay touches the ground and insects are kept out.

Jerry Smith of Spalding annually bales a thousand or more big bales of hay. For now he will continue baling hay with a recently purchased twine baler, but he said for anyone selling hay, net wrapping “is the only way to go,” because the hay travels better on trailers and the wrap will not deteriorate.

Smith also said extension education is “very informative, all the way through” and he probably will follow extension recommendations to do more hay testing in the future.

About 40 producers attended a 2006 extension field day to learn how to increase feed value of their hay and lower losses. Niemeyer



Sharon Smith

Steve Niemeyer, right, extension educator based in Burwell, and Jerry Smith of Spalding prepare to take samples to determine the nutrient content of baled hay.

said of those attending, about half reported they had changed their practices, such as using net wrap instead of twine, tarping hay, single row spacing rather than piling bales, storing bales in a north/south direction and storing on a well-drained site.

Niemeyer said producers who changed

their baling and storage practices indicated their hay loss was 3 percent less than before, which amounted to more than \$115,000 for alfalfa and more than \$28,000 for native hay.

— Cheryl Alberts

Niemeyer can be contacted at (308) 346-4200.

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