University of Nebraska Lincoln

Institute of Agriculture and Natural Resources —

At Work For Nebraska

June 2007

From the Vice Chancellor

I hope you enjoy this new quarterly newsletter showcasing examples of the vast variety of work occurring in the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln.

We see it as an opportunity to communicate regularly with you, our supporters, to let you know the breadth and depth of ways IANR is at work across our state, serving as an economic engine for Nebraska, enhancing the quality of Nebraskans' lives. We know such communication is important.

To save you time, the newsletter provides short nuggets of information on a variety of topics. To learn more about a particular topic, visit the Web address following each nugget. Some of these stories you already may have seen in other venues; others we expect will be new to you. We hope you enjoy them all, and welcome your comments.

In this inaugural issue, let me share with you the exciting findings of an independent study* recently conducted for the Institute. The report said:

"... It is evident that 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 (salaries, benefits, capital improvements, etc.) ... 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.***"

Your Institute of Agriculture and Natural Resources *is* at work for Nebraska.

John Owens

NU Vice President and
Harlan Vice Chancellor, IANR

IANR

*No state tax funds were used in financing this study.

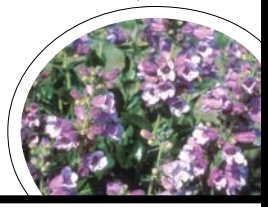
Helping irrigators use water, energy efficiently

Efficient water use is everyone's responsibility. UNL Extension works on the Nebraska Agricultural Management Demonstration Network team to teach irrigators how to save on water and rising energy costs. Through sensors and hand-held meters, producers can estimate how much water the plants are using. The tools likely will be most helpful at the beginning of the irrigation season to use as much soil moisture as possible, and at the end to make room for natural recharge by drawing down soil moisture.

For more information: *atworkfornebraskanewsletter.unl.edu/#wateruse*

Brave new plants for our tough climate

When it comes to flora, the Great Plains is no place for sissies. The Nebraska Statewide Arboretum's annual GreatPlants™ selections are tough customers, well-suited to the rigors of the region. They range from a feather reed grass to the majestic Ohio buckeye tree, and all have a place in the home landscape.



For more information: *atworkfornebraskanewsletter.unl.edu/#greatplants*

Students devour the science of foods

Kids learn best when they can really sink their teeth into a subject. Sometimes, quite literally. For example, Nancy Miller, a teacher at Potter-Dix Public Schools, is taking lessons from a UNL workshop about the science of foods to make the subject of science come alive for her high-schoolers. Why does milk sour? Why do potato chips left in the sun get a bad taste? Why does an apple turn brown? Answers to questions like these bring real scientific principles to life — so realistically that students can taste them.

For more information: *atworkfornebraskanewsletter.unl.edu/#foodscience*

Producing heftier heifers

Spring-calving beef cows that get a nutritional boost late in pregnancy tend to produce heftier heifers that have improved pregnancy rates later, UNL research shows. The impact is significant: 88 percent of heifers from cows that received a protein supplement late in pregnancy achieved first-service pregnancy, compared with just 45 percent of those from cows receiving no supplement.

For more information: *atworkfornebraskanewsletter.unl.edu/#heifers*

Studying vet med closer to home

A great education in veterinary medicine just got closer to home for Nebraska students. The new, accredited Professional Program in Veterinary Medicine offered by Iowa State University and UNL begins in fall 2007 for the first 25 Nebraska students. They'll spend their first two years at UNL and move to the ISU campus in fall 2009 for their last two years, gaining their DVM degree from ISU.

For more information: *atworkfornebraskanewsletter.unl.edu/#vetmed*

Business technology on the road again

Virtual reality is on wheels — and may be coming to a town near you. UNL Extension's BIT (Business Information Technology) Mobile is a portable classroom with 14 laptop computers, its own power source and other technology. The BIT Mobile travels to communities where people from high school students to senior citizens can learn about eCommerce and eAgriculture for profitability, overall eKnowledge and more. Through the BIT Mobile, audiences can learn how the World Wide Web is profitable for tourism and other industries as information about communities and businesses becomes more accessible.

For more information: *atworkfornebraskanewsletter.unl.edu/#BITmobile*

Got milk? It's a bacteria blocker

Sometimes, you CAN fool Mother Nature. UNL research shows it's possible to block harmful bacteria from settling in the gastrointestinal tract by fooling them into hooking up instead with certain carbohydrates, which then flush them out of the GI system before they do any damage. These carbs are found naturally in milk and could be added to other foods, too.

For more information: *atworkfornebraskanewsletter.unl.edu/#milk*

Students sharpen skills

A lesson in business ethics and profitability — by buying and selling pencils? That's exactly the point of the annual Character on the Job workshop for many northeast Nebraska fifth- and sixth-graders. More than 1,200 children have learned respect, responsibility, teamwork, delegation and more while setting up mock pencil businesses. Children learn economic principles as they pay rent and advertise while striving to make a profit. They also deal with ethical issues, such as what to do if a customer overpays.

For more information: *atworkfornebraskanewsletter.unl.edu/#jobcharacter*

Newsletter Info

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Editorial
Linda Ulrich
Cheryl Alberts
Dan Moser
Judy Nelson

University of Nebraska Lincoln | COMMUNICATIONS AND INFORMATION TECHNOLOGY

Institute of Agriculture & Natural Resources
P.O. Box 830918
Lincoln, NE 68583-0918

Helping irrigators use water, energy efficiently

Water conservation always is prudent; in the future it well could be mandated.

That's why many Nebraska producers are working to better manage crop water use.

"All of us are responsible to use water more efficiently," said Suat Irmak, University of Nebraska–Lincoln Extension water resources engineer. "And everything we do has to be manageable."

Irmak coordinates the Nebraska Agricultural Water Management Demonstration Network team of extension, Natural Resource Districts (NRDs), cooperators and growers. The team's work includes teaching producers one-on-one how to use moisture-measuring equipment to better manage irrigation.

The Network was initially formed in 2005 with a UNL Extension and Upper Big Blue NRD partnership. In 2007, the Network has expanded significantly to the other parts of the state with additional cooperators and NRDs.

The network now has more than 120 cooperators and demonstration sites. Six other NRDs (Little Blue, Tri-Basin, Upper Niobrara White, South Platte, Upper Elkhorn, Lower Elkhorn and Lower Platte South) are now active members of the network. Central Public Power and Irrigation District also joined the network this year with 10 demonstration sites.

One project goal is to reduce irrigation by 1 inch per season, Irmak said. He added that in 2005 some producers reported irrigation savings of up to 3 inches, compared with how they normally irrigated.

Equipment being demonstrated includes Watermark sensors installed in fields at 1-foot intervals to 4 feet. The sensors measure the amount of energy plants must exert to draw moisture out of the soil, and are read with a hand-held meter each week. Atmometers or ET gauges located in producer fields estimate how much water plants are using. The amount of moisture the crop needs is the difference between the sensor readings and the ET gauge.

"Once irrigators can start measuring those two elements they can manage their risk," said Dan Leininger, a team member and UBBNRD water conservationist.

Declining groundwater levels and years of dry weather eventually could lead to allocated groundwater use in the UBBNRD, Leininger said, so groundwater management is critical and also saves on rising energy costs.

"Farmers are trying but need some more tools," he said. The equipment costs about $600; the UBBNRD and extension provided half that in a cost-share program for 20 producer participants last year and 50 this year.

Irmak hopes eventually significant numbers of producers statewide will use this type of equipment, or similar, to achieve greater water and energy savings.

Irmak said the UBBNRD has 1 million acres of irrigated cropland, the largest of the state's 23 NRDs. Within the district are 12,000 irrigation wells. Saving 1 inch of irrigation water saves an estimated $400 to $500 in costs. Over the entire district, he said, a 1-inch reduction would save 27.1 billion gallons of water, and about $5 million just in energy costs.

Gary Zoubek, a team member and extension educator based in York, said the Watermark sensors likely will be most helpful at the beginning of the irrigation season and at the end.

"We want to use as much soil moisture as possible before irrigating and make room for natural recharge by drawing down soil moisture at the end of the season," Zoubek said.

Gerry George of Waco previously relied on general crop water use reports to irrigate his crops, but is using the Watermark sensors for the second year.

"When you know it's in your own field you can feel more confident about it," said George, who held off on at least one watering and put on only half as much on the final irrigation last year.

Brothers David and Doug Cast of Beaver Crossing previously used gypsum blocks as soil moisture sensors. They worked, but the Casts said the appeal of the Watermark sensors is that they last up to five years rather than one and are more accurate.

"It didn't take any convincing at all" to try the new Watermark sensors, Doug Cast said, adding "With all the water issues we're having in Nebraska this will be all the more important in the future."

Added David Cast: "You know when to start and when you can quit. This way we know exactly what we have. It eliminates the guesswork."

Irmak can be contacted at (402) 472-4865.

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Brave new plants for our tough climate

The 2007 GreatPlants™ are tough ornamental plants, ideal for the rigors of the Great Plains. The Ohio buckeye tree and Regent serviceberry shrub offer spring blooms followed by ornamental – and for serviceberry, edible and highly nutritious – fruits. For perennial and grass, Fireworks goldenrod and Korean feather reed grass are dramatic in late summer and fall.

The 2007 GreatPlants releases are a dwarf, long-flowering primrose and a silvery, fine-textured peashrub with large flowers and deep red seed pods.

"We're promoting these plants because of their ornamental qualities, but for me their most important attribute is how drought-tolerant they are once established," said Bob Henrickson, coordinator of the GreatPlants program.

Tree of the Year – Ohio Buckeye, Aesculus glabra

Attractive dark green leaves give this medium-sized native tree a lazy, tropical appearance in summer. In early spring, 7-inch greenish-yellow flower stalks stand out against the backdrop of new leaves. Tan, leathery seed pods are ornamental long after the leaves fall and deeply fissured bark gives it a handsome, coarse winter habit. This durable tree can handle a variety of soil types and site conditions. Grows 30-40 feet high and 25-30 feet wide and is hardy to zone 4.

Shrub of the Year – Regent Serviceberry, Amelanchier alnifolia 'Regent'

A nicely shaped shrub with attractive white flower clusters in early spring, the 'Regent' cultivar was selected for its high quality, extra sweet, dark fruit clusters in June. Serviceberry fruit is high in vitamin C, calcium, iron and antioxidant compounds and similar to blueberry in looks and taste. Handsome, oval leaves on this suckering shrub turn yellow/red in autumn. Adaptable to dry or wet soils and full or part sun and can tolerate heavy clay. Grows 4 feet high, 3 feet wide. Hardy to zone 4.

Perennial of the Year – Fireworks Goldenrod, Solidago rugosa 'Fireworks'

The sparkling golden-yellow flower spikes of this highly rated goldenrod cascade to resemble a fireworks show in late summer to fall.

Shrub-like shape of this clump-forming species is ornamental all season and the sturdy stems cannot be pulled down by the extra weight of flowers or overhead irrigation. Fine-textured leaves emerge burgundy in spring and are dark green in summer with minimal browning at the base of the stems. 3-4 feet high and wide. Hardy to zone 4.

Grass of the Year – Korean Feather Reed Grass, Calamagrostis brachytricha

This strong, upright grass is effective as a specimen, en masse or as a container plant. Glossy green foliage is topped by feathery inflorescences in fall. The heads are tinted red-purple in September and fade to silver-gray, remaining open and feathery even when dry. Grows to 4 feet tall in flower. Easy to grow in a variety of soils and in part or full sun if provided with consistent moisture. Hardy to zone 4.

2007 GreatPlants Releases

Prairie Lode Toothed Evening Primrose, Calylophus serrulatus 'Prairie Lode'

The toothed evening primrose, also known as dwarf sundrops or yellow primrose, is a low, shrubby, woody-based perennial native to dry prairies. Abundant butter-yellow, cup-shaped flowers are open all day and bloom mid-spring to late summer. Likes lean, well-drained soil. A good shearing in late spring keeps it tidy and loaded with flowers. This spreading groundcover grows only 6 inches high; great for rock gardens, dry border fronts or prairie areas.

Mongolian Silver Spires Littleleaf Peashrub, Caragana microphylla 'Mongolian Silver Spires'

Sparkling, ferny silver leaves of this durable shrub offer a fine-textured companion to the abundant 1-inch yellow flowers in spring. Smooth, narrow seed pods turn rich red color in summer. This 8-9 foot tall xeric shrub with spiny stems and upright, arching habit offers a natural buffer for a hedge, low windbreak or living fence. Adaptable to adverse sites. Hardy to zone 2.

Henrickson can be contacted at (402) 472-7855.

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Students devour the science of foods

Nancy Miller, a science teacher at Potter-Dix Public Schools, uses food to teach science.

She and about 300 Nebraska high school teachers have taken University of Nebraska–Lincoln summer workshops that offer information about the science of foods, such as why milk sours, why potato chips left out in the sun get a bad taste and why an apple turns brown.

Miller incorporated what she learned into her curriculum and now teaches various learning activities that use food.

Miller said she sees students taking away a lot more applicable information and how it relates to real life when she teaches science this way.

John Rupnow, a professor in UNL's Department of Food Science and Technology, who teaches these workshops, hopes teachers adding this information to their curriculum will attract more students to food science.

Rupnow said there is a great deal of misunderstanding of what a food scientist does.

Graduates of UNL's food science and technology department can find careers with major food processing firms, such as General Mills, ConAgra or Kraft, he said.

Rupnow also uses food to teach science in his Science of Food 131 class. The class, with enrollment of about 700 every semester, teaches basic science principles and basic food principles. He has been teaching it for the last seven years and made it available online three years ago.

"Food is a social part of our lives," he said. "Our religion, family traditions and childhood memories influence what we consider to be a quality food."

Miller, who teaches high school biology and life science and seventh and eighth grade science, said using Rupnow's ideas makes teaching science fun, especially when it can be related to real life.

"Dr. Rupnow was totally awesome," Miller said. "He spreads the word (about food and science) in a fun and professional way."

In one of her classes, Miller uses hamburger to show bacterial growth when under-cooking or not cooking hamburger.

Her class makes four hamburger patties. One is cooked to 120 degrees, another to 140 degrees and a third to 160 degrees. The fourth patty is left raw. The students then swab the hamburger and find out how much more bacteria grows in the under-cooked and raw meat.

"You can really see the difference that heating does kill the microbes," she said.

They also check out the bacterial growth in hamburger left out overnight to thaw in the sink or in the refrigerator. Again, bacterial growth is much more prevalent in the unsafe hamburger left out to thaw in the sink overnight.

"If you don't understand these microbes, it could kill you," she said.

Miller said a lot of her students go home and cook a snack and need to know that any leftovers must be refrigerated promptly.

In addition to food safety, Miller also uses cabbage juice to teach acids and bases, eggs to see how many teaspoons of salt make it float, celery stalks soaking up colored liquid to discuss plant parts and baking soda and vinegar for chemical reactions.

"It seems I am always buying something at the grocery store," she said.

In addition to food, she also discusses safe hand washing and has her students swab different parts of the school to check for bacteria.

"These experiments make science more fun," she said. "I get a lot of 'oohs' and 'ahs' after the students run around school swabbing things, then get to see the bacteria grow.

She also uses Glo Germ and a black light to allow students to see what germs are lingering under their fingernails or on the back of their hand after not washing them properly.

"This is really teaching real science," she said. "If I don't teach food safety, they could die. They really need to know these food safety issues. It's a life skill."

Rupnow said the UNL program makes an impact on the way food can be worked into science classes.

"As a result of taking our workshops, Nancy was motivated to incorporate this into her curriculum and as a result she received the 2006 National Teacher Award Winner for Agriculture in the Classroom," he said.

Rupnow can be contacted at (402) 540-9361.

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Producing heftier heifers

Spring-calving beef cows that receive supplemental nutrition late in pregnancy tend to produce heftier heifers that have improved pregnancy rates later, University of Nebraska-Lincoln research shows.

The three-year study, conducted at the University's Gudmundsen Sandhills Laboratory near Whitman, is the first research to demonstrate the impact of late-gestation nutrition on the performance and subsequent reproductive efficiency of heifer calves, said Rick Funston, a UNL beef cattle reproductive physiologist.

The UNL research grew out of an earlier study that focused on decreasing input costs by testing two management practices: early weaning of the cows to improve their body condition headed into winter and feeding a protein supplement to help provide extra nourishment at a time when the dormant Sandhills range falls short of their needs.

Neither practice improved the cows' future pregnancy rates.

"If you just stopped there, you might conclude it didn't pay to supplement or early wean," Funston said.

Instead, the Institute of Agriculture and Natural Resources team decided to follow the progress of the calves produced by these late-supplemented cows. They found that calves from cows that received late supplements were about 60 pounds heavier.

In a subsequent study evaluating late-gestation supplementation, it was found:

- Eighty-eight percent of heifers from cows that received a protein supplement late in pregnancy achieved first-service pregnancy, compared to just 45 percent of those from cows receiving no supplement.
- Ninety-four percent of heifers from supplemented cows eventually became pregnant, compared to 73 percent of those from nonsupplemented cows.
- Heifers from supplemented cows calved eight days earlier on average and had fewer calving problems (69 percent unassisted births, compared to 38 percent for heifers from nonsupplemented cows).

The supplemented group received about 1 pound of a 42 percent crude protein supplement per head per day from Dec. 1 to Feb. 28.

"If animals are restricted in late gestation, there's potential negative impact on that unborn fetus, both from the carcass weight standpoint and in the reproduction of heifer calves," Funston said.

Researchers also found that cows that grazed subirrigated meadows after calving, but were not fed a protein supplement in late gestation, weaned heavier calves also, but the weight advantage wasn't maintained and there was no effect on the heifers' reproductive performance.

This research was conducted in association with UNL's Agricultural Research Division, a part of the Institute of Agriculture and Natural Resources.

Funston can be contacted at (308) 532-3611, Ext. 140.

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Studying vet med closer to home

Twenty-five Nebraska students can proudly proclaim "We're No. 1" in August when they come to campus as the inaugural class in the new Professional Program in Veterinary Medicine offered by Iowa State University and the University of Nebraska–Lincoln.

The accredited program combines strengths of two of the nation's great land-grant universities for a state-of-the-art veterinary medicine education, said David Hardin, head of UNL's Department of Veterinary and Biomedical Sciences, and the program's associate dean.

The first 25 Nebraska students will begin their first two years of study at UNL this fall. They'll move to the ISU campus in fall 2009 for their last two years of study, gaining their DVM degrees from ISU.

The students, CASNR Dean Steve Waller said, "could go anywhere. They're talented students and chose to go with us."

A veterinary medicine education is very labor intensive, Hardin said, adding students studying at Nebraska will have the benefit of close interaction with an enthusiastic, diverse faculty.

“Faculty will bring their own expertise, and that of their colleagues, into the classroom,” Hardin said.

CASNR animal science nutrition classes and entomology parasitology classes will complement biochemistry and veterinary science coursework, Hardin said, as will work in the UNL Veterinary Diagnostic Center and the Great Plains Veterinary Educational Center at Clay Center.

UNL is adding 10 new faculty and renovating facilities, including two laboratories to teach microbiology, parasitology, microscopic anatomy and pathology. A classroom will be equipped with communications equipment so students easily can interact with peers at ISU.

Nebraska students will pay tuition at ISU College of Veterinary Medicine resident rates all four years. The State of Nebraska, through the Institute of Agriculture and Natural Resources at UNL, will pay the difference between ISU resident and non-resident tuition for the last two years the students are on the ISU campus.

That’s one reason Lindsey Hofman, a veterinary science sophomore from Kearney and CASNR Pre-Vet Club secretary, plans to apply.

“It’s very encouraging,” Hofman said, adding she likes the fact Nebraska students will already be familiar with the surroundings, resources and faculty for their first two years of study.

Dan Woodbury, a veterinary science and animal science junior from Stanton and Pre-Vet Club president, spoke of the quality of instructors teaching in the new program, and said class sizes “will allow us to ask, and personally have answered, every one of the many questions we will have. We will have a great education.”

Hardin can be contacted at (402) 472-2952.

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Business technology on the road again

The reality is, virtual is valuable.

Connie Hancock, University of Nebraska–Lincoln Extension educator based in Sidney, teaches people how to use virtual online programs such as eCommerce and overall eKnowledge. The know-how can be profitable for tourism and other industries.

“The delivery mode of information has absolutely changed in the last five years and will continue to change as people want information instantly,” Hancock said.

Hancock said South Sioux City in northeast Nebraska is considering a community-wide podcast, or Internet-based audio broadcast. When the broadcast is downloaded onto a portable MP3 player, it can bring a walking tour to life for tourists, Hancock said.

In northwest Nebraska’s Pine Ridge, lodging, hunting and recreation are offered by a group of 26 local farmers and ranchers through www.nebraskahighcountry.com. One participating entrepreneur is mapping Geographic Information System (GIS) coordinates so potential customers can find his place.

“People feel the need to be on the cutting edge. Small businesses know they can compete in the global market,” Hancock said.

Many classes taught by Hancock and others are held in the BIT (Business Information Technology) Mobile, a portable classroom with 14 laptop computers and other technology.

“We provide small businesses with a knowledge base of where to find information, helping them make wise decisions for their online storefront,” Hancock said, adding that the Internet is not a marketing end-all, and that some people still prefer to do business one-on-one.

Since March, Hancock and others have taken the BIT Mobile to 24 communities, teaching about 400 people, from high school stu-

dents to senior citizens, about virtual knowledge.

Hancock can be contacted at (308) 254-4455.

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Got milk? It's a bacteria blocker

Certain carbohydrates found naturally in milk can help prevent harmful bacteria from settling in the gastro-intestinal tract and causing disease, according to University of Nebraska–Lincoln research.

The carbohydrates, known as galactooligosaccharides or GOS, are structurally similar to the sugars that line cells inside the GI tract and to which bacteria attach, said UNL Food Microbiologist Robert Hutkins. His research showed the bacteria can be "fooled" into attaching instead to the GOS and then be flushed through the intestinal tract without it sticking around.

Harmful bacteria "don't begin to initiate the infection cycle until it's attached to the GI tract," the Institute of Agriculture and Natural Resources scientist said. "It's that initial attachment that we're concerned about.

The galactooligosaccharides reduced the adherence of the bacteria by about 70 percent in the research, Hutkins said.

Oligosaccharides already were known to stimulate growth of healthy bacteria in the gastrointestinal tract, Hutkins noted, but this is the first research to show its potential usefulness as a decoy for the harmful bacteria.

The research was done using enteropathogenic E. coli, which causes diarrheal diseases in children and also in developing countries, but preliminary date suggests the well-known E. coli O157:H7 is similarly affected by the approach, Hutkins added.

Galactooligosaccharides occur naturally in cow and human milk. This may offer partial explanation for why nursed babies don't get as many gastrointestinal infections as formula-fed infants. GOS can be developed into a food ingredient made from milk sugars, which means infant formula manufacturers could add them to their products.

"Their whole goal is to make infant formula as much like human milk as possible, including having many of the positive nutritional properties," Hutkins said.

Galactooligosaccharides already are added to many foods made in Asia and Europe, including dairy foods, granola bars, crackers and breakfast cereals. The research has been done with tissue cells so far, Hutkins said. He's seeking further funding to test the approach on animals.

The research was featured in an article in the December 2006 journal Infection and Immunity. Other authors were Kari Shoaf, a UNL graduate student; and George L. Mulvey and Glen D. Armstrong of the University of Calgary.

This research was funded in cooperation with IANR's Agricultural Research Division.

Hutkins can be contacted at (402) 472-2820.

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Students sharpen skills

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.

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

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