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2004

# Connect

May

## Zoo's exotic plants protected from insects

Visitors to Omaha's Henry Doorly Zoo can easily see the Lied Jungle is an exhibit full of lush vegetation and animals indigenous to a natural rain forest environment.

What they can't see are local subterranean termites and other insects that feast on the exotic plants shipped from private collectors and botanical gardens across the country. For that, the zoo thanks Dennis Ferraro, a University of Nebraska Cooperative Extension educator based in Omaha.

"Dennis has been extremely instrumental in helping us with entomology issues," said Terri Gouveia, zoo curator of horticulture. "We could often identify the genus, but could not identify the specific species, which Dennis could."

Many pests, such as the bamboo moth and banana weevil, could potentially destroy exotic plants placed in the 61,000-square-foot Lied Jungle. The zoo also calls on Ferraro's expertise in insect species identification at the recently added Desert Dome, housing the world's largest indoor desert.

"The identification was the most critical part," Gouveia said. "If he didn't

know it, he always took the extra step to get the proper experts to identify them."

Ferraro said he has been working with Henry Doorly staff since the early 1990s and consults with them monthly on the control of pests.

"A lot of zoos work with their local universities," Ferraro said. "I'm the resource the zoo uses to help solve problems."

Ferraro has given talks to zoo grounds crews about the proper application of pesticides. He also helped solve a termite problem by teaching zoo staff to bait termites by putting a naturally occurring hormone in wood, which stopped colonies from maturing.

"Termites are very prominent in tropical rain forest climates," Ferraro said, adding they and other insects could cause major damage at the zoo. "There are a lot of logs and aesthetic structures in the Lied Jungle that could deteriorate at a much faster rate if the insects are not controlled."

In these sensitive habitats for endangered animals, Gouveia said the zoo uses an Integrated Pest Management system, in which pest species are identified and controlled by the least toxic means such as cutting away affected areas of plants, hand-wiping, soap spraying and adding natural predators.

Gouveia is confident Ferraro's work has helped save many of the exotic plants in the Lied Jungle and Desert Dome.



Brett Hampton

*Dennis Ferraro, Cooperative Extension educator based in Omaha, works with Terri Gouveia, curator of horticulture at Henry Doorly Zoo, to identify and control insects in the zoo's Lied Jungle.*

Without his expertise, insect control would be much more difficult and slower, she said.

"We are most fortunate to have someone of his caliber here in Nebraska and the support of the university," she said.

— Lori McGinnis

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

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## Dean's comments

University of Nebraska Cooperative Extension educators have always gone about their work with a genuine sense of purpose. That tradition continues for a group of seven educators and their team leaders who now are working on a focused assignment.

Some of our Community Resource Development educators began the focused assignment, *Creating Communities for the Future*, in December. They are guiding targeted communities through a process of identifying community strengths and needs so they can increase or maintain economic and social viability. They also are working with the communities to identify people who can best make it happen, and teaching ways to help them accomplish their goals. Better communication skills and knowledge are important parts of the program.

Their work is concentrated in seven geographic regions, in order to make as substantial a difference as possible in the 18 months devoted to this project. These regions may be facing challenges in employment, retail and economic growth; infrastructure, education and housing; or overall quality of life.

Educators are helping identify community leaders and opinion makers, who in turn identify others who could help the community make strides toward its goals, creating a network of local change-agents. They are expanding the knowledge base of these key individuals, both in terms of

their own abilities and in terms of how expertise from the four university campuses and other entities can help them achieve their goals.

Programs they're using aren't necessarily new; in fact, several examples have been showcased in previ-

ous issues of extension's *Connect* newsletter. The educators often are looking at already-developed programs in new ways. These programs include teaching county officials about considerations such as security and privacy issues for e-government Web sites; Web development and electronic retailing for businesses;

leadership training; and helping businesses identify consumer preferences to keep more business local.

This model, under leadership provided by the university's Rural Initiative and others, is not a silver bullet to fix all problems. Rather, our purpose is to help communities move from a spirit of competition to one of collaboration.

Extension long has been committed to teaching, education and leadership development. I believe our *Creating Communities of the Future* model can help people successfully adapt to the change and ambiguity that is so much a part of today's world.

**Elbert Dickey**  
Dean and Director  
University of Nebraska  
Cooperative Extension



*Elbert Dickey*

## 2004 Connect

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# Biosolids applied as field fertilizer extend life of Lincoln landfill

For 12 years, Dave Nielsen and his father, Wayne, have applied biosolids from the city of Lincoln to their farm fields, benefiting both their fields north of Lincoln, and the city.

Biosolids, the compost-like material remaining from residential and industrial wastewater treatment, are rich in nitrogen, phosphorus and zinc that feed crops. Organic matter improves soil texture and increases its water-holding capacity, which helps corn, sorghum, soybeans and wheat grow stronger, faster and have higher yields.

Barbara Ogg, University of Nebraska Cooperative Extension educator based in Lincoln, coordinates the biosolids program. She educates producers about biosolids application and benefits, and arranges contracts with about 15 producers annually. She ensures biosolids are applied according to federal Environmental Protection Agency and university recommendations, away from water sources, with deep soil testing done before and after application.

"We need to adhere to the research that has been done," Ogg said.

Biosolids processing begins at the Theresa Street Wastewater Treatment Facility in north Lincoln. The plant

handles 70 percent of the city's wastewater, taking in 19 million gallons daily, said Randy Wilson, water pollution control superintendent. Wastewater is treated using physical, biological and chemical processes. After approximately 12 hours, liquids are discharged into Salt Creek.

The remaining biosolids are processed for an additional 20 days in large, egg-shaped containers called anaerobic digesters at 100 F to significantly lower pathogens. When processing is complete, biosolids are loaded into trucks, taken to farms and applied with manure spreaders to fields of participating producers.

Wilson said Lincoln's wastewater contains low concentrations of metals as the city has little industry. The program also involves a Global Positioning Satellite mapping and database system, managed by Dave Smith, extension technologist also based in Lincoln.

"We can track our application program over the last 10 years — where we've been and when we've been there," Wilson said.



Cheryl Alberts

*Biosolids from Lincoln's Theresa Street Wastewater Treatment Facility are heat-treated in large, egg-shaped anaerobic digesters before being applied as fertilizer to farm fields (below). Barbara Ogg, Cooperative Extension educator, works with Randy Wilson, water pollution control superintendent, and teaches producers to apply biosolids according to research-based recommendations.*

Since 1992, 284,000 tons of biosolids have been applied to 9,500 Lancaster County acres, Ogg said. The nutrient-dense and long-lasting product can be applied to the same field only once every three or four years. She said the value of nitrogen alone since the program began totals approximately \$540,000, with total nutrients valued at \$6.5 million. There also are savings in landfill space.

For fields needing fertilizer, Dave Nielsen typically applies 30 to 35 tons per acre. Although biosolids cost less than commercial fertilizers, application is much more time-consuming. In 8 hours Nielsen covers 15 acres with biosolids, compared to 100 acres with anhydrous ammonia. He said biosolids increased his wheat yields by 10 bushels per acre.

Gene Hanlon, Lincoln's recycling coordinator, said until 1992 biosolids were landfilled. Recycling saves the city more than \$10 per ton, he said, and has already added nearly a year to the landfill's life.

"If we were to stop now and begin to bury biosolids, the landfill would close 2 1/2 years sooner than the current projected closing date of 2026," Hanlon said.

— Cheryl Alberts

Ogg and Smith can be contacted at (402) 441-7180.



Lancaster County Cooperative Extension



# 'Business Sense' launches entrepreneurial skills for youth

Amanda Peterson, 19, of Stromsburg, turned a talent for painting and creating wreaths and swags into a sales business.

Jenna Greckel, 16, of Utica, buys and sells antique tractors over the Internet.

Garrett Maurer, 15, of Atlanta, weekly mows the lawns of several clients in his small Phelps County community.

These teens learned business skills through the Business Sense curriculum offered by University of Nebraska Cooperative Extension 4-H. The curriculum teaches skills such as how to write a business plan, determine consumer needs, customer relations, overhead costs and pricing.

Gail Brand, extension educator, and Tammy Stuhr, extension assistant for youth and Business Sense camp coordinator, both based in Seward, said the program teaches teens valuable life skills.

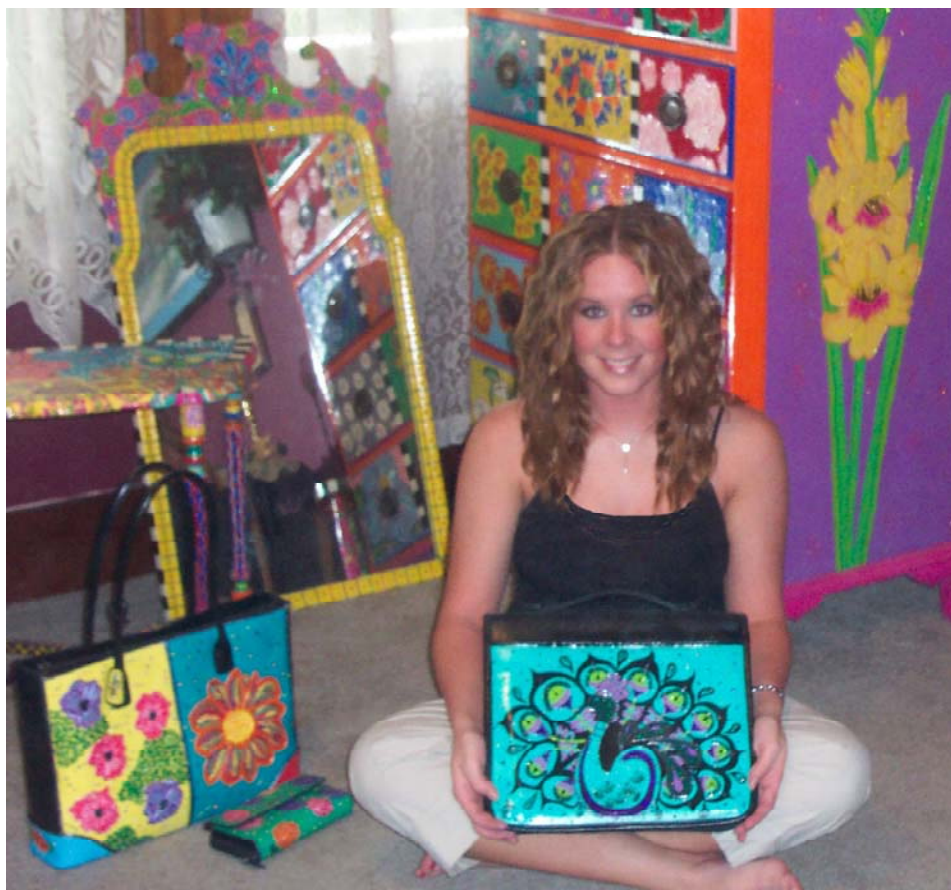
"In Business Sense, teens gain skills for the marketplace, which gives them an edge over their peers when competing for jobs or starting out as an entrepreneur," Brand said. "They are able to make decisions regarding marketing, budgeting, and customer, employee and public relations with confidence after their experiences in the 4-H project."

Last year, 242 4-H'ers took the Business Sense curriculum.

Peterson, who made her first wreath when she was 12, said

Business Sense

helped her start something she really wanted to do. She obtained a small loan



*Amanda Peterson, 19, of Stromsburg, used her natural talent for painting furniture and making swags and wreaths to start a sales business. She learned business skills through Cooperative Extension's Business Sense 4-H curriculum.*

from her grandfather for supplies, then made 25 wreaths and sold them at a craft show and a local business.

Next she began repainting old furniture using bright colors and bold designs. The furniture has been sold in stores in Minnesota and in New Orleans, having been bought by a store owner there.

"She said she loved it and she had never seen anything like it," said Peterson, a studio art freshman at the University of Nebraska at Kearney. Also, purses she hand-painted have been placed in stores in New York City.

Greckel became interested in antique tractors because her father bought and sold them. She decided to follow suit for her Business Sense project. Last year she bought seven tractors and sold five of them, some delivered as far away as Oklahoma City.

"I plan on doing this my whole life," Greckel said.

Greckel said Business Sense helped improve her public relations skills as well as teach her about bookkeeping and organization. She learned so much she taught Business Sense at a 4-H camp and helped children ages 9 to 12 develop business ideas and make business cards.

Maurer developed his business plan for Maurer Mowing Service while taking Business Sense, soliciting clients with the business cards he made for the course. He also learned to make a flier, which he displayed in the local post office. Last summer he had four clients, earning \$25 per lawn weekly.

"This year, hopefully, it will expand to five or six," he said. "I hope to get up to 10 lawns in the next couple of years."

— Lori McGinnis

Brand and Stuhr can be contacted at (402) 643-2981.



## Businesses benefit from tech expertise

Nebraska small-business owners wanting to improve their profits through e-commerce are finding help from University of Nebraska Cooperative Extension and the Nebraska Rural Initiative, based at the University of Nebraska-Lincoln.

Glen Cox, initiative systems administrator and federal issues analyst, works with computer-minded 4-H Tech Team members statewide, and with UNL's J.D. Edwards Honors Program interns, to help develop grassroots technology skills.

It's a win-win situation, Cox said. The 4-H and UNL students see practical benefits to their education by working directly with business owners in their communities. Business owners, in turn, discover how technology resources can help grow and strengthen their businesses without straining budgets.

University student interns provide technical assistance to Nebraska business

owners and community organizations by producing Web sites, developing computer-based promotional materials and offering computer consulting services.

Cox sees yet another benefit. He believes interns working in communities learn to appreciate the values and challenges of local citizens, which may lead them to return to those communities after graduation.

Tech Team members learn computer skills through workshops similar to one Cox conducted last year. Participants built a computer from scratch and learned hands-on techniques by also assembling a network server.

"I see these students making a difference wherever they go, but I hope many of them choose to stay in Nebraska," Cox said.

— **Barbara Rixstine**

*Cox can be contacted at (402) 472-2940.*

## BSE case in U.S. draws rapid responses

David Smith calls her "the cow who stole Christmas."

The University of Nebraska Cooperative Extension dairy/beef veterinarian and biosecurity expert had just gotten home from shopping Dec. 23, 2003, when he heard the first case of bovine spongiform encephalopathy, or BSE, had been diagnosed in the United States. A reporter had left a message on Smith's answering machine.

The University of Nebraska-Lincoln annual holiday shutdown was just beginning, but Smith swung into action. First, he returned to his office to gather some information and returned the reporter's call for a story that was in the next day's newspaper.

That same evening, Smith sent a letter to extension educators and specialists statewide describing the disease and providing Web links for information. Over the next several days Smith received calls from reporters and cattle producers on the transmission and control of BSE, a rare disease that can

have severe economic ramifications. Veterinarians are controlling BSE in cattle populations to prevent it from entering human food and animal feed, Smith added.

Smith had long maintained information on BSE through an extension veterinarian Web site and quickly helped make it available through extension communications. For the rest of the holiday shutdown, Smith said he spent several hours daily at his laptop computer and monitored USDA updates. He also worked with other members of the Food Safety, Quality and Security Committee of the American Association of Bovine Practitioners to update educational materials and complete a resolution on BSE control.

In early 2004 Smith authored three BSE publications providing information about the disease and continues to be a readily available source on the topic.

— **Cheryl Alberts**

*Smith can be contacted at (402) 472-2362.*

## Opportunities await Hispanic teens

Speaking in public with confidence, voicing opinions on public issues and being part of community groups are all becoming familiar to Hispanic high school students in central Nebraska.

With guidance from Patricia Sanchez-Stewart, a University of Nebraska Cooperative Extension assistant based in Lexington, leadership opportunities have been extended to several Hispanic students through the Nuestro Futuro (Our Future) 4-H Leadership organization and the companion Grassroots Leadership Development program.

As part of these two initiatives, seven youths have met and talked with their local city, school and Dawson County officials this year during a 10-week program. School officials often invite them to be on various committees.

"The youth-adult partnerships have helped a lot," Sanchez-Stewart said. "Local officials ask to have students on committees or be a voice of youth."

Four students also are part of the Developing Networks Initiative, a collaboration among the University of Nebraska at Kearney, a local elementary school and community members.

"The goal is to improve the schooling of children and youth by providing an insight to the importance the school and community play in the success of an education," Sanchez-Stewart said.

Many Nuestro Futuro members also contribute to community youth education. Through 4-H's *Character Counts!*, Nuestro Futuro members discuss a particular characteristic such as fairness with Sanchez-Stewart and then, using their own examples, develop a presentation for local elementary school students. They also volunteer for Discovery Days, a one-day science camp for children ages 8-12. Students assist Sanchez-Stewart or teach a science-based curriculum themselves, in addition to conducting the camp's recreational activities.

— **Barbara Rixstine**

*Sanchez-Stewart can be contacted at (308) 324-5501.*



## ServSafe now in Spanish language

Learning good food safety measures is easier if learners are taught in a language they speak. For that reason, University of Nebraska Cooperative Extension staff based in Omaha teach a modified version of the ServSafe food safety courses in Spanish.

Cindy Brison, extension educator, and Carmen Raber, extension Expanded Food and Nutrition Education Program adviser, teach ServSafe. The food-handlers' course is accredited through the National Restaurant Association, and co-sponsored by the Douglas County Health Department, Nebraska Beef Council and the Hospitality Educational Foundation.

ServSafe emphasizes the legal requirements relating to topics such as restaurant sanitation, personal hygiene, food storage, and cooking and cooling temperatures.

"We do try to add things that are very regional," Brison said, citing serving safe beef as an example. "In Nebraska, beef is pretty important."

ServSafe classes in Spanish are offered every three months. Thus far approximately 170 staff from about 40 restaurants in Dodge, Sarpy, Douglas, Cass, Washington and Saunders counties have taken ServSafe training in Spanish, Brison said. An additional 1,300 food service workers in the six counties have taken ServSafe classes in English since it began in 1991.

With ServSafe, restaurants have better-educated staff and hence, safer food.

"It's so easy to cause illness or even death by not following food safety rules," Brison said. "We just want people to stay healthy."

— **Barbara Rixstine**

*Brison can be contacted at (402) 444-7872.*

## Physical activity recognized at state games

University of Nebraska Cooperative Extension has teamed with the Cornhusker State Games to promote healthy lifestyles through competition.

More than 750 teams across Nebraska have formed to take part in N-Lighten Nebraska, a program launched in January and conducted by extension, the games and the Nebraska Health and Human Services System. The purpose of the teams, consisting of two to 10 people, is to increase physical activity, said Linda Boeckner, nutrition specialist at the Panhandle Research and Extension Center in Scottsbluff and project leader for the extension component.

The approximately 6,000 team members track how far they walk, run or bike, and log miles into a Web site, Boeckner said. Other activities such as weight-lifting also count and can be converted into miles. Gold, silver and bronze medals will be awarded at the games in July in three divisions: adult teams with the most physical activity, youth teams with the most activity, and

adult teams having lost the most collective weight.

Winning teams will be recognized at the games' opening ceremonies in Lincoln, where most of the sporting activities will be held. Team members need not be present to receive their medals.

"Some people really respond to the competitive nature of this," Boeckner said. "It has a lot of advantages for people who need extra incentive."

Many N-Lighten Nebraska teams are from community groups, businesses and companies statewide, said Scott Ash, competition director for the games. About 50 teams are made up of extension personnel.

Ash anticipates the program will have positive results.

"We expect that people will become more active," he said.

— **Lori McGinnis**

*Boeckner can be contacted at (308) 632-1256. Or visit [www.n-lightennebraska.com](http://www.n-lightennebraska.com).*

## HACCP meat safety education is ongoing

University of Nebraska Cooperative Extension helps teach federal meat safety procedures to small- and mid-size processors.

Processors must implement Hazard Analysis and Critical Control Point (HACCP) regulations, said Harshavardhan Thippareddi, food safety specialist. Since 1996, USDA has mandated implementation of HACCP in meat and poultry operations to assure safety of these products; failure to comply could lead to citations or shutdowns.

Since 1992, extension has and continues to hold four to five workshops annually to train food processors implementing HACCP programs. Extension also provides expert advice to processors developing their HACCP plans and helps them stay in business, Thippareddi said.

In 2003, extension also held two special workshops called Revisiting HACCP Plans for smaller processors to

meet newer USDA safety regulations regarding ground beef and ready-to-eat meats within the meat and poultry operations.

Thippareddi taught ways to improve sanitation and incorporate intervention methods to prevent, reduce or eliminate pathogens such as *Listeria monocytogenes*, *E. coli* O157:H7 and *Salmonella*. These can cause food-borne illness, death and costly meat recalls, he said.

About 15 Nebraska processors attended the special workshop at the University of Nebraska-Lincoln while about 25 Kansas processors attended one at Kansas State University. Participants said the workshops immensely helped them understand and comply with the regulations.

— **Lori McGinnis**

*Thippareddi can be contacted at (402) 472-3403.*



# Ag employers learn how to find and keep good help

Finding and keeping quality employees are ways businesses become and stay successful. However, many farmers and ranchers can be overwhelmed by the paperwork and time needed to make a long-term match with good employees, say University of Nebraska Cooperative Extension experts.

For the past two years, extension has offered a statewide, two-day Employee Management in Production Agriculture workshop to help producers find and keep valued employees.

Beef specialist and workshop co-coordinator Rick Rasby said participants learn such skills as finding employees in a tight market, hiring the right employee and firing the wrong one, communication, personality issues, compensation packages and more.

Guest presenters Sarah Fogleman of Kansas State University and Bernie Erven, now retired from Ohio State University, conduct the workshop, sponsored by extension and Nebraska Cattlemen.

"Sarah has a wealth of practical, anecdotal type of information on farms and ranches she's visited," said Dennis Bauer, extension educator based in Ainsworth and a workshop co-coordinator. "Bernie deals with issues involving problem-solving between employers and employees, and family operations, and is very experienced."

About 120 participants attended the first workshop in 2003, held in several locations. This year, the workshop was limited to one location and 36 participants attended.

This year's participants represented 500 employees at 36 operations managing 50,000 acres of farm and ranch land, 130,000 head of finished cattle, 8,000 head of beef cows, 50,000 finishing swine and 1,500 sows.

Brenda Masek of Bestol & Masek Ranch in Purdum described the workshop as "invaluable. I couldn't say enough good things about it." She and her husband both attended the workshop and said it moved her to make changes in

how she described the job, communicated and oriented a new employee a week later.

"I feel we would not have gotten off to such a good start if it wasn't for the workshop," Masek added.

Showing employees what they can expect upfront benefits both employer and employee, Rasby said, and taking time to better recruit and orient new employees is worth the effort.

Having tools such as a job description and employee handbook ready before hiring saves time and energy versus re-recruiting and rehiring if that employee doesn't work out, he said.

"It's imperative that you make good decisions when you hire because you don't always want to be in that job market," Rasby said.

Post-workshop surveys indicate a majority of attendees planned to make changes in their employee job descriptions, orientation programs and training of new managers; and that discipline techniques for new employees were very important,



Brian Williams (left), of Johnstown, was a participant in an Employee Management in Production Agriculture workshop, presented in part by Dennis Bauer, Cooperative Extension educator based in Ainsworth.

based on what they learned at the workshops.

"Participants have told us they like what we present because it's material they could implement tomorrow and it's well worth the time they spend away from their operation," Rasby said. "We've never had anybody go out the door disappointed."

— Barbara Rixstine

Rasby can be contacted at (402) 472-6477; Bauer at (402) 387-2213.

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# Knowing ventilation principles means healthier livestock, cost-savings

One of the most perplexing environmental aspects of animal confinement buildings is ventilation, said Mike Brumm, University of Nebraska Cooperative Extension swine specialist.

It's important, he noted, because when confined animals' environment is off-balance, so are they.

Brumm coordinates swine ventilation workshops in Nebraska that address the principles of airflow in livestock buildings that can house hundreds or even thousands of animals, but focus on swine. Extension also sponsors the workshops in Iowa, Minnesota and South Dakota.

Workshop topics cover drafts, cooling, heating, odors, consequences of improper control settings and more. Brumm said an imbalanced ventilation system increases operating costs and risks poorer pig performance because the pig must compensate for the environmental imbalance.

"If you make a mistake you could affect 2,000 pigs by that one decision," Brumm said.

Barrie Luers, assistant sales manager for Midwest Livestock Systems Inc. in Beatrice, appreciates the workshops. He said they provide educational, consistent and credible information.

The physics of airflow and ventilation can create many challenges in the industry, Luers said, noting a mobile ventilation laboratory that is part of the workshop greatly helped participants see and feel airflow differences. The mobile lab was funded by pork producer associations in the four states.

Luers, who works with his customers in addressing ventilation issues, said he encourages producers to also check with extension because "the credibility of the information is enhanced when reinforced by extension expertise."

Brumm said the approximately 35 multistate workshops have been well-received. The first 12 workshops were

attended by 335 participants, including producers, veterinarians, builders and electricians. Most producer participants filling out evaluation forms estimated the value of workshop information ranged from \$1,000 to \$5,000.

One workshop fact seemed to surprise many producers, Brumm said. Pigs cannot sweat, so they get cool as their skin dries after they are sprayed with water. Many participants were surprised that constantly spraying or misting pigs is less effective, he said.

Ron Brodersen, veterinarian for Whole Hog Health Center at Hartington, said he frequently troubleshoots ventilation problems in swine buildings. For him, the biggest benefit of attending the workshop was learning how to set and make adjustments to complicated control systems.

"It's a very unique opportunity for the purpose of demonstrating how ventilation systems work," Brodersen said.



Sheryl Colgan

*Mike Brumm, Cooperative Extension swine specialist, teaches livestock building ventilation workshops that include information on setting and making adjustments on airflow systems to improve livestock performance and reduce operating costs.*

The workshops expanded into Kansas and Missouri this past year, Brumm said.

— Cheryl Alberts

Brumm can be contacted at  
(402) 584-2816.

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