A sign on the door of Barry Steevens office quotes Albert Schweitzer: “There is no greater good, than human service.” Another sign sums up Steevens attitude on Extension service: “A desk is a poor location from which to watch the world.”

“In Extension,” said Steevens, “it is critical to get involved with people. Get to know them, work with them outside of your office.” Steevens believes that the development of one-on-one relationships leads to trust. “If you can establish trust, they will continue to call on you after the relationships leads to trust. “If you can establish trust, they will continue to call on you after the initial problem is solved,” Steevens explained. “Developing a sense of trust between agent and client should be one of Extension’s premiere goals.”

Steevens will retire after serving Missouri as State Extension Dairy Specialist for 32 years. This is his third attempt to retire. He was convinced to return several times by University of Missouri, Animal Science Center director, Rod Geisert.

Steevens was raised on a small family dairy farm in Wisconsin. At the Agriculture School of the University of Wisconsin, River Falls, where he earned his undergraduate degree, he was influenced by a psychology teacher who convinced his students that there was a much larger world “out there”, than his middle-income farm family students had imagined. That, and the prospect of being sent to the jungle in Viet Nam inspired Steevens to go on to graduate school to study animal nutrition.

After acquiring his PhD in 1971, Steevens reached a turning point in his ambitions. As much as he would have enjoyed dairying, he realized that by doing so, he would miss out on seeing the world. Jobs were scarce. He found part-time employment as a teacher at a vocational school set up for returning veterans. He then joined the University of Wisconsin Extension, working out-state, off-campus, as a county farm management agent in dairy. He knew then that he wanted to work with producers, rather than be a focused scientist.

“I met wonderful people and formed relationships with dairy farmers,” said Steevens. High moisture ear corn was the trend at that time; Steevens set up a field day with an audience of 500. It was so successful that he was inspired to create more interactive events.

His specialty was nutrition, so Steevens had to network to learn how to answer questions about other subjects such as ventilation and farm estate transfers. “Getting fathers and sons together with a neutral third party who could ask the questions that needed to be answered, was a worthy challenge,” said Steevens.

Early in his career with the University of Wisconsin, Steevens got a request for plans to build an outhouse—not in his area of expertise. It took some research (before Google) but he found plans at USDA, rather than send the client on to someone else.

In 1974 Steevens moved to Wyoming. Wyoming had only 23 counties and he formed close relationships with the dairy and the greater livestock community. “Extension became family”, said Steevens. While in Wyoming, he initiated a laboratory process for evaluating forage and balancing rations for beef, sheep, swine, and dairy. “We worked hard, and partied hard. Your hand shake was your word and people accepted you at face value.”

After four years in Wyoming, Steevens decided his work had become too general. He wanted to specialize in dairy again. Dr. Rex Rick- etts, University of Missouri Extension, State Dairy Specialist, and project leader of Dairy Extension, hired Steevens as the State Dairy Specialist with responsibility in milking management. Steevens began a 32 year involvement with the Missouri State Milk Board that will continue on past his retirement.

Despite the large title, Steevens continued to work directly with farmers. With industry support, he held milking schools. He filled the role of faculty support to the regional specialists, and in turn, found them very supportive.

In 1980, Steevens became involved with stray voltage in the dairy barns. The electricity upsets dairy cows. He helped encourage and guide the utility companies in developing better electrical systems with improved grounding.

Continued on page 6
USDA livestock grading standards
By Michelle Proctor, Senior Information Specialist

One of the highlights of the Beef Research and Teaching Farm Field Day, held September 16 at the University of Missouri’s South Farm near Columbia, was a presentation on how the USDA grades livestock.

The audience listened to a lecture by Corbitt Wall, Fed-State Supervisor of the Missouri Livestock and Grain Market News and Grading Services. Following Wall’s lecture, participants were invited to test their newly acquired knowledge by grading South Farm steers in a near-by corral.

Wall explained, “Cattle are graded to create a common language as a rule of law.” He emphasized that grading is different from judging. There are many factors used to evaluate cattle, and the USDA looks for different points of development, depending on whether they are grading feeder calves, finished cattle, or cull cows.

“By fat,” said Wall, “the most important factor in grading market steers and heifers is the amount of fat, looking at back-fat first. We look for fat in places that don’t work—for example, the brisket, cheeks and jowls, back and loin, pones, and flank. We also take stock of the depth of the body.”

Attributes such as marbling, color, firmness, texture, and the age of the animal are considered for each quality grade, although Wall showed participants how to make pre-finishing determinations. “How much fat determines the grade. Prime has about .8 inch around the rib-eye—the 12th rib. Choice has between .5 to .6 inch of fat at the rib-eye. Select will show .4 to .5 inch at the rib-eye. We don’t want to discuss Standard,” Wall joked.

Numerical yield grades are also part of the grading score. Yield grades (YG) number 1,2,3,4, and 5, and refer to muscle and cut-ability. “Choice and YG 2 is a good score,” said Wall. “Less than three percent of American cattle will grade Prime. Most Prime comes from Jersey cattle because they are light muscled.”

To help determine cattle musculature by sight, Wall used the geometric shapes of a circle: , inverse triangle: , and a square: . “When you look at cattle from behind, visualize these shapes,” he said. “If the silhouette resembles a circle, the animal is pretty heavy. A square indicates that the animal is fat. Look for an inverse triangle—that indicates lean.”

Following the lecture, Wall took his audience outside where a number of South Farm steers were penned. Participants were given USDA grading sheets and one at a time, students brought a steer before the group. Wall encouraged the audience to look at the areas he had referred to in the lecture, mark off grades on the sheets, and then come up with an overall quality and yield grade number for each steer.

The group was amazed at how often even experienced producers graded incorrectly. “Get to know and understand these grading points and you can take an unfinished calf to the place you want him to be by managing his feed or finishing him off on grain,” said Wall. Detailed grading regulations can be accessed at http://www.ams.usda.gov/AMSv1.0/Standards.

Perspectives on selection for improved feed efficiency
By Michelle Proctor, Senior Information Specialist

“Producers should consider all the aspects involved in achieving improvements in feed efficiency when making decisions—not just one or two,” advises Dr. Bob Weaber, University of Missouri Extension, beef geneticist. “From a cow-calf perspective, producers must decide whether to select for improved efficiency of feed utilization of individual animals; or select for reduced energy requirements; or if they should implement other technologies at the herd level that can change production efficiency.”

Dr. Weaber identifies cow-calf producer objectives as follows:

- Improving production efficiency as measured by the pounds of calf weaned per cow exposed to bulls
- Identifying breeding systems that match calves to the market place through sire selection and that utilize different sires to produce cows matched to the production environment, thereby improving production efficiency
- Becoming more sustainable through enhanced profitability and improved resource allocation and utilization
- Why is feed efficiency important? “Feed is the largest cost center for beef cow-calf producers,” Weaber answered. Citing the USDA-ERS, Weaber said that feed encompasses 63% of total operating costs for cow-calf operations in our region.

With current corn prices and projected feeder prices, efficient utilization of resources becomes an even larger factor related to profitability. “Two thirds of caloric intake in the beef production chain from cow-calf to harvest occurs at the cow/calf level, not at feed lots,” said Weaber. “Even so, a ten percent reduction in feed intake at the feed lot level with equivalent output can save producers more than one billion dollars per year.”

Weaber discussed various measurements of feed efficiency. He feels that the feed conversion ratio (feed:gain) or the reciprocal value feed efficiency (gain:feed) can be biased by differing proportions of lean and fat tissue deposition among individuals during testing. Feed intake (lb/head/day) is another method of measurement but tells producers little of true feed efficiency without incorporation of this data into a selection index.

Residual feed intake (RFI) or net feed intake (NFI) is a more reliable indicator of efficiency of feed utilization as it corrects for differences in the body weight and rate of gain of individuals during the test period. RFI describes the relative efficiency of an animal compared to its cohorts in the same contemporary group. “Negative RFI values indicate an animal consumed less feed than expected for a given amount of gain and is considered more favorable,” said Weaber.

Selection for improved efficiency during the growing phase of beef production is only a part of what can be achieved through a well constructed selection program Weaber said. To help illustrate the importance of efficiency at the cow level, Weaber cited Kleiber’s Law which states that animals with higher body weights (more mass:surface area) are more efficient at utilization of energy for maintenance of bodily function as larger animals tend to lose less heat to the environment than do smaller animals.

While the larger animals have overall higher feed intake requirements, the requirements don’t scale linearly with mass. “We continue to hear lots of anecdotal evidence that small cows are ‘more efficient.’ While in a given environment this may be true for production efficiency, it is not true for metabolic efficiency,” Weaber explained.

“In reality, to maximize maintenance energy efficiency (i.e. minimize heat loss) we should select for the largest animal our production environment will support without negatively impacting reproduction. The key is making sure that the energy requirements of our cows for maintenance, reproduction and lactation don’t exceed what our forage based production environment provides,” he said. “Either minimization of maintenance energy requirement or improved feed efficiency alone will not solve the problems if the cows’ intake dramatically exceeds availability.”

Producers should consider the order of energy partitioning: 1) Maintenance 2) Growth 3) Lactation, and 4) Reproduction. If beef cows don’t meet their energy intake needs and don’t have enough stored energy reserves (back fat) then production suffers with reproduction being sacrificed first, followed by lactation.

“So, the first thing to go, reproduction, turns out to be the single most important trait for cow-calf profitability,” said Weaber. “Production efficiency at the herd level can be enhanced in a number of ways including the implementation of a planned and disciplined crossbreeding system.”

Crossbreeding systems have been shown to improve production efficiency by as much as 23 to 30 percent in terms of pounds of calf weaned per cow exposed. Tools, like crossbreeding, that substantially alter the input-output ratio dramatically impact efficiency of feed utilization at the cow herd level. At the end of the day, it is production efficiency that determines farm level profitability, not individual animal feed efficiency. This is a subtle but important difference in perspective.

“From a cow-calf perspective,” Weaber concluded, “we should select for improved feed efficiency and animals that are fit for our environment in terms of mature size and lactation potential while simultaneously implementing breeding schemes and management systems that enhance production efficiency at the herd level.”
Dr. Jason Weirich joins Commercial Agriculture Program

By Michelle Proctor, Senior Information Specialist

Dr. Jason Weirich is the newest member of the University of Missouri Extension, Commercial Agriculture Program. He is based at the Delta Center in Portageville as an assistant professor of weed science. His position is 70% extension and 30% research in weed science.

Dr. Weirich will be responsible for developing and promoting a program of applied weed control with an emphasis on cotton, rice, soybeans, corn and other field crops produced in the Missouri Delta area.

His goal at the Delta Center is to develop effective weed control management programs based on producer needs and sound IPM principles. He will work with producers, consultants, other extension personnel, and industry representatives.

Weirich spoke at the 49th annual Delta Center Field Day in early September on how his research will tackle glyphosate resistant weeds. Weed control in Missouri has dramatically changed with the increased populations of glyphosate resistant Palmer amaranth.

“It’s not going to be easy,” said Weirich. “We need to use multiple modes of action, along with crop rotation and trait rotation to control Palmer amaranth. Populations of glyphosate resistant Johnson grass have been confirmed in Arkansas. We can only assume that it won’t be long until we will be facing this as well.”

Weirich believes that the use of tillage and/or lay-by or hooded applications of herbicides will become more frequent in the coming years. “The days of a single herbicide program are behind us,” he told the audience. “Glyphosate was a once in a lifetime herbicide which revolutionized crop production.”

Weirich completed his PhD in weed science at Mississippi State University, after earning his MS at Oklahoma State University. Both his MS thesis and PhD dissertation dealt with glyphosate resistant technology for cropping systems.

“My research will address current and potential problems relating to weed and herbicide management,” said Weirich. “I will focus on the development of sustainable, economical, effective, and safe weed control practices that affect major row crops in Missouri.”

Weather and Soil Conditions Favoring Urea Fertilizer Losses

By Regina LaRose, MidAmerica Farmer Grower

Dr. Gene Stevens

Dr. Gene Stevens, Extension Professor, Division of Plant Sciences, Delta Center Portageville, Missouri, spoke recently about how soil conditions will affect urea volatilization.

Soil bacteria that cause urea fertilizer losses as ammonia gas in fields are ubiquitous. Dr. Stevens said that scientists use “ubiquitous” as a fancy word for meaning that these bacteria are everywhere in the environment.

Urea fertilizer is an organic compound that contains carbon and nitrogen. In the soil, urease enzymes produced by bacteria break urea fertilizer down to ammonia gas (NH3). It then reacts with water to form ammonium ions (NH4+) which are more stable compounds. Danger occurs when urea fertilizer is broadcast on the surface and sits there for several days. Under the right weather and soil moisture conditions, ammonia will gas off. Growers need to stabilize the urea with an additive or push it into the soil with irrigation or tillage, to reduce volatilization.

According to Stevens, wet soil presents the greatest challenge. “We conducted tests at the Delta Center where we actually went out with a water wagon on a field with dry soil and applied different amounts of water on the soil. Next we broadcast the same rate of urea fertilizer on the plots. Later in the season, we measured the cotton to determine how much petiole nitrate we had in the tissue. We found where we put the highest rate of water on before urea was applied, petiole N levels were low and cotton yield was reduced.

“It can be confusing. Rainfall just before broadcasting urea is a bad thing because it melts the urea and promotes bacteria growth,” said Stevens. “Rainfall or irrigation after the urea is applied is a good thing if it pushes it into the soil where it forms more stable ammonium ions.”

In dry soil cotton plots, results were acceptable in the Delta Center test. “Where we had really dry soil and there was not enough moisture to dissolve the pellets, our yields were not hurt,” said Stevens.

Temperature is another factor affecting volatilization. “If you have a wheat field in the spring and broadcast urea in January when the ground is cold, there is not enough warmth for the bacteria to produce. In that situation, you really would not expect to have much volatilization,” Stevens explained. “But, by the time we come to green up, which is where most people put most of their nitrogen on, early to Mid-March, the soil temperature is warm enough to cause volatilization. The bacteria are there so you have the potential for loss.”

Stevens gave another illustration where volatilization can occur in rice fields. “Maybe you have one well over in the corner and you broadcast the pre-flood nitrogen. It takes the well several days to pump a field up. In the meantime the urea is sitting there on the soil. Suppose you had some rain the day before and the soil surface is moist, then you have the potential for loss.”

The best situation is to apply urea on dry soil in rice fields to prevent loss of urea, Stevens advised. Floodwater will push the urea several inches below the soil surface where it will be converted to the more stable ammonium ion form. “The worst case scenario will occur when the fields are already wet or you didn’t put any kind of stabilizer in your urea to prevent volatilization.”
Forming separate entities on a family farm has been commonplace for some time. However, the use of multiple business entities has been on the rise primarily because managers are realizing the many benefits of restructuring to the family, the farm and protection of assets.

Yet, the basic truth is that forming multiple entities, for example putting your land holdings in one LLC and the livestock in another, should be considered by carefully weighing the expected advantages and disadvantages for your particular farm business and family.

This evaluation should include looking at each enterprise separately and becoming comfortable that the business structure being considered will most likely meet the objectives for that enterprise as well as its contribution to the overall goals of the business.

Remember, the overall goals of the family should consider retirement income for the senior generation as well as some accounting for family members that are not actively engaged in the business, but the family determines still deserve some stake in the business’ success and viability.

Although there are likely as many possible ways to structure a farm business as there are farms, using some combination of the sole proprietorship, partnership, regularly-taxed corporation, S corporation, limited liability company, limited liability partnership and trust, two basic approaches are common on farms:

1. the single entity approach with all business assets held in a single organization
2. the dual or multiple entity arrangement like the livestock/land example mentioned above

Looking at this structure as an initial example, advantages include:

1. rental income from land leased to the production entity assures retirement income without affecting social security benefits
2. inter vivos (transfer of ownership rights to others while you are still alive) or transfer of ownership of the land holding company in your will to off-farm heirs can create an additional option to treat off-farm heirs equitably without requiring their involvement in the day-to-day management of the farm business, i.e. the livestock enterprise
3. reducing the required investment of on-farm heirs in gaining control of the production side of the business
4. where the production entity is a corporation, dissolution and liquidation of the corporation are likely to produce less income tax liability than if the land were also held by the corporation

We will be discussing business structure arrangements and the advantages and disadvantages of each in future columns. In preparation, consider spending some time with your family discussing the goals that each has for their own interest in the business as well as the overall interest of the farm. Selecting the right structure should ultimately be in consultation with your lawyer and accountant.
In late August, the University of Missouri and the Missouri Association of Meat Processors (MAMP) held the 2010 MU/MAMP Meat Academy in Columbia. The MU meat science department promoted the benefits of pre-rigor processing (prior to chilling), resulting in gains in yield, shelf life, and color development.

Dr. Bryon Wiegand, associate professor of meat science, University of Missouri, explained that the pre-rigor process starts with hogs that are slaughtered and hot boned. The shoulder and sometimes the ham, is taken pre-rigor. The rest of the carcass is allowed to chill and go through regular post-mortem aging. Salt and water are added before grinding.

Dr. Wiegand, quoted studies by Dr. Joe Sebranek, professor of meat science, Iowa State University, Ames, stating that pre-rigor pork has several advantages over post-rigor meat, including:

- Superior water-holding capacity, resulting in improved yields, and improved fat-binding ability
- Improved fresh-color development, giving better color and color life for fresh sausage products
- Longer shelf-life

The advantages of pre-rigor meat are derived from the high pH, typically about 6.4 to 7.0, that results when muscles are utilized quickly after slaughter, before the normal post-slaughter muscle bio-chemistry has enough time to generate the usual amount of lactic acid.

Post-rigor meat has a pH of about 5.4 to 5.8. This influences the ability of the meat to bind water. Pre-rigor meat needs to be cut from the carcass as soon as possible in order to achieve the pH advantage and then should be coarsely ground and chilled or salted.

Pre-rigor meat has a distinct advantage in that the meat color is brighter and lasts longer. The color stability, plus bacterial populations that are usually lower due to rapid chilling, lengthens the shelf-life of the product. Regarding fresh sausage, the use of pre-rigor meat is probably the most valuable contribution to finished product quality.

Dr. Wiegand said that while the high water holding capacity of pre-rigor meat improves the structure and yield of coarse ground fresh sausage, the reduced myoglobin state is of even greater value. Typically, the color of fresh sausages made from chilled meat fade from a red color to a brownish-grey color in a short time once exposed to light, salt, and oxygen. Fresh sausages manufactured with pre-rigor meat will maintain a red color in the presence of salt and light for up to 5 to 6 days of refrigerated storage and some weeks with frozen storage.

Processors can reduce the higher cost that comes with modified atmosphere packaging (MAP), which can be up to 25 cents a pound higher. MAP packaging is not necessary with pre-rigor pork, so there is a way to recoup some of the extra cost.

Several Missouri meat processors spoke to the group about adding value to red meats. Mario and Nick Fantasma of Paradise Locker Meats in Trimble, MO, talked about their preference for scalding over skinning. Scalding results in 80% hung weight over 60% with skinning—savings which can be passed along to consumers.

Paradise puts the farmer’s name on all local products, a trend that is impressing consumers in the U.S. and Europe. “Consumers want to buy locally and want to know from whom they are buying,” said Nick Fantasma. “Restaurants are putting local sources on their menus and our customers want to see the same on our products.”

Justin Rickard, MU Animal Sciences, PhD candidate, spoke to the Academy about adding value with drop credit products from beef. Rickard showed processors the average retail prices of such cuts as head meat, oxtails, edible tallow, tongue, cheek meet, scalded and honey comb tripe, bone and blood meals. He estimated that a processor could reap totals of $10.53 per head for meats normally not considered saleable.

Following a tour of MU’s retail meat prep rooms and shop, Warren Dawkins, CEO of International Collagen Resource LLC, in Labadie, Missouri, spoke to the group about high barrier (inedible) and collagen casings. He brought an assortment of novel meat ingredient products for participants to view and sample.

The MU/MAMP Meat Academy will be repeated in alternate years. For additional information, contact Bryon Wiegand at 573 882-3176 or wiegandb@missouri.edu.
In our previous article on SCC, we shared the ratio-
versity of Florida, looked at these early abortion rates
tend to abort more pregnancies. Dr. Jose Santos,
treated for mastitis have more days open, but they
Interestingly, not only do cows that have to be
have a clinical case of mastitis averaged 124 days open
ments will help the bottom line of the farm.
Similarly, a cow that experiences clinical mastitis
has more days open. Eight herds were analyzed, with
~ 7000 cows that had not experienced a case of mas-
itis and ~2200 cows that had. The cows that did not
were for cows that had a case of mastitis prior to first breeding.
In regard to specific bacteria, Dr. Dale Moore, Washington State
University, demonstrated that gram negative organisms could
cause altered heat lengths via decreased luteal phases. These gram
negative organisms are found in the environment, so cows’ cleanli-
ness and teat prep are vitally im-
portant to reduce the incidence.
This brings us to our final point in regard to milk quality. The FDA is developing more sen-
sitive tests that will detect drugs
at lower levels. When we say drugs, we do not mean antibiotics only. Likewise, anytime a farm has a viola-
tion on meat residues, the FDA will begin to scrutinize
the milk more closely. There is now a $53,000,000 case
against a farm for using an unapproved drug and con-
aminating a co-op’s milk that went to China.
Therefore, work with your veterinarian to establish
treatment protocols. First and foremost, use medica-
tions—not solely from treatment. Work with your
veterinarian’s permission, protocol, and extended withdraw-
al times. Lastly, if your veterinarian says a drug is NOT
for use in lactating cattle, do NOT use it!
To wrap up this topic, SCC changes are coming. In
the long run, it will be good for the industry—producing
a high quality product is in our best interest. Many
producers are already below the proposed standard
of quality. High milk quality is a product of manage-
ment—not solely from treatment. Work with your
farm advisors to implement strategies to improve SCC.
According to the FDA, the teat, prior to attachment,
is a “food contact surface”. Improved milk quality will
yield more milk and improved reproduction; both will
enlarge the producer’s bottom line.

In the Summer issue of the Commercial Ag News, Drs. Steevens and Poock discussed the current
recommendation for lowering the bulk tank somatic cell count (SCC) level from 750,000 to 400,000.

Steevens contributed to the pasture
driven dairy industry by helping convince
Dean Mitchell to build a milking barn at Mt. Vernon. “Developing this farm led to
showing producers how quality alter-
native forages can be utilized,” recalled Steevens.
“Our dairy specialists worked as a
team on many issues, i.e., trips across
the United States to show farmers how
to network with other farmers and solve
problems together,” Team work and camaraderie are
fond memories for Steevens. Trips to other states of-
fered an opportunity to observe and learn new tech-
nologies. “A meeting creates awareness. Adaption is a
one-on-one process,” he believes.
Steevens was involved with the National Mastitis Council and helped it forge a connection with the Vet-
erinary School. He worked on both management and
new construction as a faculty advisor for the Foremost Dairy. He felt a deep obligation to make that dairy vi-
able.
Steevens also worked with the Missouri Holstein Association. That association has led him to the Na-
tional Holstein Convention in 2012, where he will
serve as convention Chair. His Missouri State Fair con-
tributions helped with realizing a new dairy building
and ice cream parlor on the State Fairgrounds.
He has worked with and encouraged many forms of
dairy technology: computer feeders, low line milk-
ning systems, TMR mix wagons, sexed semen, PC Dart,
free-stalls, and computers for farms.
Steevens is grateful on many levels for his career in
Extension. His career enabled him to take his fam-
ily on several international ventures, and thus expose
them to the world. It also provided much more than
employment for him personally. “Somewhere along
the line, Extension became my family rather than just
my vocation,” said Steevens.
“I hope I’ve done somebody some good. I have
learned that a significant part of communication re-
quires, just listening. Letting your client talk, vent,
whatever he needs, before offering your opinion. Then
you can prioritize his problems and tackle them.”

He recalls one family who came to him for advice. The
wife, with her two young girls, was in tears. “You
must help us or we will lose our farm,” she implored.
They were slowly losing all their cows because of the
stray electricity. “A Mennonite farm dealt with signifi-
cant voltage problems—15 volts,” recalled Steevens.
He was able to identify the source. The utility company
discovered the source a half mile away in a neighbor’s
faulty water heater. “I think I made a contribution to
the state by helping individual farmers. That led to
helping the utility companies learn more
about the issue.”

Steevens retires, continued
MU unveils Swine Teaching Barn

By Michelle Proctor, Senior Information Specialist

Producers, industry leaders, students, and neighbors were invited to an Open House on September 29 as the University of Missouri, Columbia, unveiled their new swine barn. The high tech barn is dedicated to teaching. Guests were able to tour the entire facility and speak with Animal Science faculty and staff. Pork burgers, donated by the Missouri Pork Association were served by the Mizzou Swine Club.

The 110 by 48 building houses an exhibition room, a 24 sow breeding/gestation room with 12 stalls and 12 pens, and a farrowing room with 12 sow spaces. Next to the farrowing room is a 150 head, six pen nursery, and a finishing room that can house 150 market hogs.

A key feature of the Swine Teaching Barn is the observation hallway that runs along the north interior of the building. The hallway allows visitors to observe the pigrooms from a bio-secure area, i.e., without being in with the pigs.

The south hallway houses state of the art, high tech, monitoring and control technologies. Automatic temperature controls run four fans in each room, regulating heaters or cool cells. A minimum ventilation fan runs at all times. Computers also measure the amount of drinking water used by the pigs and turn on and off the lights according to seasonal requirements.

Both University of Missouri’s animal science program and the veterinary school will utilize the facility. Dr. Ross Cowart, MU associate professor of veterinary medicine and surgery, will use the barn to teach veterinary students hands-on disease diagnosis, in-barn procedures and surgeries.

Dr. Tim Safranski, MU associate professor and State Swine Breeding Specialist, outlined some of the innovations in teaching strategies that the new facility will afford. “The Swine Barn will allow us the opportunity to teach livestock production techniques, rather than just teaching about the animal in a normal classroom,” said Safranski.

“Students will learn by participation, Safranski explained. “Rather than being told in class how antibiotics in feed. Each week students will weigh the pigs and record growth and morbidity/mortality, a group of pigs can be housed together with alternate pens receiving or not receiving antibiotics in feed. Each week students will weigh the pigs and record growth and morbidity/mortality. They will understand the positives and negatives very differently by observing/experiencing them directly.

“In a similar way they will be able to observe sows and piglets in conventional farrowing areas as well as those where sows are allowed to turn around freely” continued Safranski. “They will also be able to observe interaction behaviors between pigs in pens.

“In addition to students, we will be able to train and educate industry and producers in this facility. We will offer hands-on training experiences without biosecurity risk to our research facility. We will offer hands-on training experiences without biosecurity risk to our research programs because we have this dedicated facility. We could also offer training where attendees are taught only through the observation windows, allowing observation of modern pork production practices without the need to be in contact with the animals.”

The University of Missouri, Commercial Agriculture Program’s annual Swine Institute has been scheduled for November 10. The 2010 Institute will examine the need to maintain efficient production on the farm as well as address off-farm issues.

Three major off-farm issues have the potential to significantly impact on-farm production practices. The first topic concerns animal welfare. The second topic concerns animal activism, including an update on Ohio. The third topic concerns animal activists, including an update on Ohio.

The Swine Institute will be held at the Court- yard by Marriott in Columbia on Wednesday, No- vember 10, from 11:00 AM until 8:30 PM. For reg- istration information, contact Erica Lovercamp at 573 882-9552 or lovercampe@missouri.edu. For additional details on event programming or other inquiries, contact Katrina Turner at 573 882-0378 or turnerk@missouri.edu.
MAESTRO Farm Energy Audits available

By Michelle Proctor, Senior Information Specialist

The Missouri Agricultural and Energy Saving Team’s MAESTRO program offers several options to assist Missouri livestock operators in saving energy and money. The MAESTRO program has developed energy audits, loans, and rebates to encourage producers to install energy-saving equipment for farm operations and residences.

Applicants will need a farm energy audit in order to access loan options. Lenders may make guaranteed loans up to $50,000 for a 10-year term or for the life of the equipment, whichever comes first. The program offers rebates on energy audit costs when equipment is installed, loan interest rate buy-downs to 3% or the equivalent in a cash down-payment. The MAESTRO program is open to all livestock producers who are not required to be permitted as a confined animal feeding operation (CAFO). Applicants must be legal Missouri residents and at least 18 years of age. They must be able to provide proof of citizenship or immigration status, identity, and residence. If the borrower employs laborers, he must also provide proof of enrollment and participation in the federal work authorization program.

To find out more and begin a farm energy audit, contact ENSAVE at 800-732-1399 to complete an initial assessment to determine whether an energy audit is appropriate for the farm. The audit cost is $500, with the cost reimbursed if the energy savings realized are greater than the total cost of the audit and implementation.

To review program application forms, and for more details about the loan and rebate process, visit http://mda.mo.gov/adb/financial/maestro.php.

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**Calender Events**

October

16 MO Chestnut Roast, Agroforestry Center, New Franklin

December

3-4 MO Livestock Symposium, Kirksville, MO
www.missourilivestock.com

7-8 MO Cattlemen’s Assoc Annual Meeting & Tradeshow, Columbia

January

5-7 MO-AG Convention, Lodge of Four Seasons, Lake Ozark

Show- Me Select Heifer Sales

November

19 Carthage - 7:00 PM
27 Kingsville - 11:00 AM

December

4 Fruitland - 1:00 PM
4 Green City - 1:00 PM
11 Palmyra - 12:30 PM
11 Mountain Grove - 1:00 PM
18 St. Joseph - 12:30 PM