

Animal and Food Sciences

Extension Report and Directory



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Animal and Food Sciences Extension Programs

Beef

Integrated Resource Management

Les Anderson, Darrh Bullock, Roy Burris, Michelle Arnold, Gregg Rentfrow, Kenny Burdine, Ray Smith, Steve Higgins, Kevin Laurent, Land Dale, Blair Knight, Gary Carter, Darrell Simpson, and Doug Shepherd

The goal of Kentucky Beef IRM is to increase the profitability of beef operations in Kentucky by using intense educational programming that will result in producers' adopting proven money-making practices. Current programs that have been developed and implemented through the IRM committee are:

- Master Cattlemen program
- Cow College
- Applied Master Cattleman program
- Master Grazer program
- Master Stocker program
- Master Marketer program
- Agent Certification in Beef Production
- Beef Cattle Handling and Welfare Certification program
- Professional Cattleman program
- MAG-60 Program

For more information on beef IRM, visit our Web site at www.uky.edu/Projects/beefirm or beef in general at <http://www.uky.edu/Ag/AnimalSciences/beef/beefinfo.html>.

Master Cattleman

Roy Burris, Lori Porter, Blair Knight, Les Anderson, Michelle Arnold, Darrh Bullock, Kenny Burdine, Steve Higgins, Garry Lacefield, Kevin Laurent, Jack McAllister, Gregg Rentfrow, Ray Smith

The Master Cattleman program began as an effort of the Integrated Resource Management committee in 2000 with one program in the Mammoth Cave area. Since that time, the program has expanded with numerous multi-county groups participating across the state. It is currently funded by the Ag. Development Board through the Kentucky Beef Network.

Programming is based on the calendar year and consists of ten sessions of four hours each, with in-depth material on a specific subject area in beef production. An optional hands-on component is also included where participants can learn more about visual selection, artificial insemination, pregnancy palpation, cattle handling, and vaccination techniques among other topics.

To date, nearly 3,300 Kentucky producers have been certified by the Kentucky Master Cattlemen Program. Participants must attend at least 8 of the 10 sessions and be BQA certified to complete the program. Producers who complete the program receive a personalized farm gate sign.

Cow College

Les Anderson, Darrh Bullock, Roy Burris, Patty Scharko, Gregg Rentfrow, Kenny Burdine, Lee Meyer, Ray Smith, Charlene Jacobs, Gary Carter, Darrell Simpson, and Doug Shepherd

Cow College is an intense training session conducted by the University of Kentucky Extension Service for beef cattle producers who desire in-depth knowledge on beef management procedures. The goal of Cow College is to teach every aspect of the beef industry to the participants and to provide the students with enough information and tools to succeed in beef production. Cow College consists of five different training sessions that focus on beef cattle nutrition, health and beef cattle facilities, economics, beef cattle genetics and reproduction, and end product.

The session on beef cattle nutrition includes lectures on topics such as basic beef cattle nutrition, characterization of feedstuffs, forages, forage management, body condition scoring, and planning a cow-calf nutrition program. Producers are also trained to interpret forage analyses, to interpret feed and mineral bag tags, and to balance rations. Students receive and are trained to use a computer program to balance rations. In the session on health and beef cattle facilities, lecture material includes the principles of immunity and establishing a herd health and parasite control program. Discussions are also focused on cattle psychology and corral design. Producers are trained on the proper techniques for cattle vaccination, implanting, dehorning, and various methods of castration. The session on economics includes lectures pertaining to farm business management, financial statement analysis, marketing systems, and the futures market. To help incorporate the lectures into production situations, students are given case studies and are asked to make decisions based on certain production scenarios. Record keeping is a major focus of this session. Participants are given the CHAPS program and taught how to use it. Economic analysis using the SPA program is discussed in detail. The session devoted to beef cattle genetics and reproduction includes lecture material on beef breeds, breeding systems, use and interpretation of EPDs, heifer development, estrus synchronization, reproductive management, and bull management. Students are trained to perform examinations of pelvic areas, reproductive tract scores, artificial insemination, pregnancy diagnosis, and animal evaluation. They are also trained to make selection decisions. The final session of Cow College discusses end product and includes discussions on yield and quality grading, cuts of beef, harvesting methodology, live animal evaluation, and carcass grading. Students evaluate live cattle and estimated yield and quality grade. These cattle are then harvested and the carcasses graded by the students. Additionally, strip steaks from the worst and best quality steers are served for lunch, and the students perform a taste-test of the cuts from the different carcasses.

Applied Master Cattleman Program

The Applied Master Cattleman program is designed for producers who want a level of education above the Master Cattleman curriculum. The goal of Applied Master Cattleman is to move these producers to the next level of beef production. Producers should learn how to apply what they have learned in Master Cattleman, and put those concepts into practice in their beef operation. The intent of this program is to actually change producer behavior rather than just provide information.

In general, Applied Master Cattleman sessions are more in depth, and also include “hands-on” type sessions. The topics covered in Applied Master Cattleman are driven by local county needs. Each multi-county Applied Master Cattleman group choose topics that are

needed most in their area. Therefore, the topics covered in each area are not necessarily the same.

The difference between Applied Master Cattleman and Master Cattleman is that the Applied program has evolved into a “customizable” program to fit each county group’s needs. An example of this is how one county group came together with an idea of pooling calves together with similar genetics, thus creating a better product to sell. During this process, producers have learned the value of estrous synchronization and artificial insemination. This is just one way that the Applied Master Cattleman Program has made a great impact in counties across the state.

Master Grazer Education Program

Donna Amaral-Phillips, Jeff Lehmkuhler, and Ray Smith (in collaboration with other specialists in the departments of Plant and Soil Science, Agricultural Economics, and Veterinary Science)

This program educates beef, dairy, sheep, and goat producers on ways to improve the utilization and quality of forages grazed. Components of the Master Grazer Educational program were conducted across the state of Kentucky. These educational programs included Kentucky Grazing Schools, an Advanced Grazing School, regional grazing networks, and timely written information regarding management of grazing systems.

Kentucky Grazing School is a two-day program consisting of classroom education and hands-on education and demonstrations. This program is intended for farmers wanting a more in-depth discussion on topics needed to establish and/or modify a rotational grazing system. Usually, this program is held twice yearly during the spring and summer or fall growing seasons. Farmers, NRCS personnel and county agents have and are welcome to attend this program.

Advanced KY Grazing School, a one-day program, begun in July 2012, is designed to expand on the concepts presented at the KY Grazing Schools and share on-going grazing research being done at the University of KY.

Regional Grazing Networks consist of multiple educational programs held in the field which illustrate the implementation of grazing practices and are designed to increase networking amongst producers.

University of Kentucky Grazing News is a 4-page newsletter published monthly during the grazing season. This newsletter is mailed to those who do not have access to the web and is distributed electronically to all county extension agents for use locally and individuals on a dedicated grazing listserv. In addition, a DVD has been produced for those unable to attend a grazing school.

Website for Master Grazer Educational Materials has been developed and resides at <http://www2.ca.uky.edu/grazer> which contains all previous and current newsletter articles, listing and information of upcoming events, important contacts, and links to other useful websites.

Master Stocker Program

The Kentucky Master Stocker program was initiated during the fall/winter of 2010-2011. This program was modeled after the successful Master Cattleman program, but focused on the Stocker and Backgrounding segments of the industry. This program is solely aimed at the growing calf and is independent of the other beef educational programs. Sessions in this program include Health, Nutrition, Forages, Facilities, Animal Welfare, Environmental Compliance, Purchasing and Marketing, Enterprise Budgeting and Economic Risk

Management. Sessions are 1.5-2.5 hours in length and are hosted on a regional basis with multiple counties meeting at centralized locations. This program demonstrates the beef groups' continued effort to develop new educational programs to meet the needs of the industry.

UK Master Marketer Program

Kenny Burdine, Greg Halich, Kevin Laurent and Blair Knight

Marketing skills are often cited as a key challenge for Kentucky beef cattle producers and those skills are becoming an increasingly important aspect of beef cattle production. Beef producers continue to deal with rising costs of production, challenges presented by weather, and extremely volatile markets for both inputs and outputs. Educational programming on marketing strategies, emerging market opportunities, and advanced price risk management are extremely valuable in today's dynamic cattle market environment. Based on recent feedback, this is also considered to be a high priority for county agriculture extension agents and beef industry stakeholders.

The purpose the new Master Marketer program is to provide Kentucky's beef producers with a greater knowledge base of beef cattle marketing, better enabling them to compete and be successful in today's market environment. The program builds upon marketing, management, and risk management components from Master Cattleman and Master Stocker. Producers are instructed in the effective use of price risk management tools, emerging market opportunities, marketing strategies, marketing implications of management practices, decision making, etc. Producers completing the program: have a good understanding of the various marketing options they have for the feeder cattle produce; have a comfortable grasp of the futures market as a source of market information as well as a price risk management tool; are knowledgeable of practices they can employ to improve the marketability of the cattle they sell; are knowledgeable about budgeting and decision making with implications for profitability.

Extension Agent Principles in Beef Cattle Production Certification

Jeff Lehmkuhler, Darrh Bullock, Les Anderson, Roy Burris, Kenny Burdine, Ray Smith, Gregg Rentfrow, Greg Halich, Michelle Arnold and Steve Higgins

The purpose of this education series is to increase the knowledge base of county agents with respect to beef cattle production. This training will increase agents' confidence and ability to answer routine beef production related questions as well as develop local educational series to better serve their clientele in the future. A secondary benefit of the program will be to provide an opportunity for Agents within UK CES to advance in their career ladder. This educational series is designed to meet the requirements as proposed in the 12-18-08 guidelines for Level IV advancement. The program will fulfill the professional development requirement as listed under these guidelines or may serve as in-service training.

The core courses will involve 5 sessions which are two days in length providing approximately 80 hours of instruction. These sessions are largely in-class instruction, however, there are hands-on opportunities built within many of the topic areas. The agents would come to Lexington for 2 days for each of the core topic areas for instruction and must attend all five sessions: Economics/Management; Nutrition & Forages; Herd Health; Genetics & Reproduction; End Product / Developing Local Programs

Specialization - Upon completion of the sessions, a qualification exam must be taken and a score of 70% or higher is necessary to pass. Once an agent has completed the core curriculum and passed the exam then they will choose which area they would like to specialize

in. This portion of the curriculum will involve direct agent-specialist interaction; the agent will work with the specialists to develop various forms of educational materials which could include: writing a factsheet, writing popular press/newsletter articles and developing/presenting a producer presentation. This project will be worked out between the agent and specialists prior to the onset of the certification. Once completed the agent would be certified in a specific area of beef cattle production (i.e. Health). We foresee agents in a particular area being certified in different production areas to complement each other. Certification in more than one area will be possible. If a certified agent would like to have the opportunity to teach a Master Cattleman session in their certification area they would need to go through specific training to acquire Instructor status. This would involve direct involvement with the specialist(s) specific to the Master Cattleman presentation.

Cattle Handling and Welfare Certification Program

Darrh Bullock, Roy Burris, Jeff Lehmkuhler, Kevin Laurent, Land Dale and Doug Shepherd

At the recent Beef Industry Leadership Conference conducted by the University of Kentucky and Kentucky Beef Network, Kentucky's beef leaders identified improved welfare of cattle as one of the primary areas of focus for the future. For moral, production and economic reasons, the practice of sound animal husbandry has always been a major emphasis of the beef industry, but the state's leadership felt there is always room for improvement. Compliance with basic cattle handling and welfare practices does not currently lead to improved marketing opportunities, but the leadership felt this may be the case in the near future and they would like for Kentucky's beef farmers to be positioned to take advantage of any potential value added opportunities.

Practices that compromise the wellbeing of cattle are usually done out of ignorance and not malice, therefore, a major educational program is being developed and will be implemented to raise the awareness of practices that insure the proper handling and welfare of cattle while keeping farmers safe and continue to supply healthy beef to consumers.

This program will inform producers of the best management practices for handling cattle and providing for their general wellbeing. The program will be offered to farmers in a classroom setting utilizing video and live presentations, as well as, through online courses. The foundation for the educational materials for the Cattle Handling and Welfare Certification Program will be those available through the National Cattlemen's Beef Association's Beef Quality Audit program. Additional materials and a course evaluation exam will be developed by the UK beef Extension group. Upon completion of the course materials and scoring a qualifying score on the exam a farmer will become Certified in Cattle Handling and Care.

Graduates of the program will receive a certificate suitable for framing, a metal gate/barn sign and a Handling/Welfare checklist to post next to their working facilities.

To ensure compliance graduates will be required to sign a "Document of Compliance" every two years stating they are adhering to the Handling/Welfare guidelines. Additionally, graduates will be required to take a refresher course every four years and pass a comprehensive exam. A random, limited third-party audit will be explored to determine if a low cost, effective procedure can be developed and implemented in collaboration with the Kentucky Department of Agriculture.

Kentucky Professional Cattlemen Program

Les Anderson and Land Dale

At the recent Beef Industry Leadership Conference conducted by the University of Kentucky, the Kentucky Beef Network, and the Kentucky Agricultural Development Board, Kentucky's beef leaders identified improved communication with the general public as a primary area of focus for the future. Often Cattlemen are asked to represent the industry in local, state, and national events. Unfortunately, most of our ranchers are not adequately prepared to interact with either media or the public as they represent the beef industry in many hot-button topics. Also, the industry does not educate the public on "why we do what we do". The vision of this program is to train a group of cattlemen to professionally discuss the beef industry with the media, the public, and our legislature. Our goal is to train at least 2 cattlemen in 70-80% of counties in Kentucky. We will train participants in methods to successfully interact with the media, the reasoning behind our basic production practices or "why we do what we do", and to logically and professionally discuss hot-topic issues in the beef industry. As a result of this program Kentucky's beef industry will have many highly-trained cattlemen across the state that can professionally represent the industry.

To become a Kentucky Professional Cattlemen (KPC), a rancher must have first completed either Master Cattleman or Master Stocker AND either Master Grazer or have attended Grazing Schools. Next, each KPC member will have to complete the NCBA on-line course called Master of Beef Advocacy (MBA) and be Cattle Handling and Care (CHC) certified. The MBA program is a self-directed on-line training program designed to equip beef producers and industry allies with the information they need to be everyday advocates for the beef industry. MBA candidates are required to complete six courses in beef advocacy, including:

- Modern Beef Production – Sharing the many benefits of modern, efficient U.S. beef production
- Animal Care – Explaining our commitment to raising healthy animals
- Beef Safety – Communicating why producing safe food for consumers is a top priority
- Beef Nutrition – Explaining how great-tasting beef strengthens and sustains our bodies
- Environmental Stewardship – Sharing how we're protecting the environment for future generations
- The Beef Checkoff – Communicating the value of your investment in growing demand for beef

Finally, each participant will participate in a one-day media training program. This training will be lead by the Kentucky Beef Council and focuses on how to write a press release, how to prepare for an interview, and how to present yourself and the industry during an interview with the media. We will also train participants in debate and how to present and defend an argument. A rancher will become a KPC after completing each of these trainings and will receive a picture identification card that indicates their graduation.

The MAG-60 Program

To enhance the value of our feeder calves, UK and KBN has launched the MAG (Management And Genetics) - 60 (60-day post weaning) program. In this program, KBN has partnered with beef producers to synchronize estrus in their beef females for timed insemination. Females are time-inseminated to reduce the labor costs associated with AI. Producers AI their females to a small, select group of sires that are proven in their ability to sire

productive, profitable calves. The sires used were selected by a committee that consists of UK Beef Extension Specialists, representatives of the semen supply companies, KBN, and producers. The same sires will be used for the entire project (3 breeding seasons).

Steers sired by AI will be managed according to CPH health requirements and will be backgrounded for a minimum of 60 days post weaning. The calves will be age and source verified and will be subjected to ultrasound to determine potential carcass merit. Thus, we will be marketing feeder steers that are age, source, and genetically verified for superior performance. According to our previous data (see above), these calves are \$150 more valuable at harvest than steers from the same herds that are sired by non-proven natural service sires. Marketing agents in Kentucky have predicted that feeder calves that are age, source, and genetically verified are likely worth \$7-10 more per hundred than a normal CPH-45 feeder if sold in load lots. Feeders produced in this program will be co-mingled by our marketing agents and marketed either in CPH-like feeder calf sales, internet video sales, or directly to feedlots.

The heifers from the MAG-60 program will also greatly enhance the ability of our producers to increase profits. First, since all calves will be subjected to carcass ultrasonography, our cooperators herds can retain heifers with the genetic potential to excel in carcass traits. Second, heifers not retained will be developed and sold in a premium bred-heifer sale. This heifer sale(s) should also increase the cooperator's opportunity to diversify their marketing options and increase the profit potential.

Marketing data indicates that numerous loads of like cattle are needed to optimize market value. To obtain at least 1,000 steers for market, we must AI about 4,000 cows (50-60% conception rate and 50% of each sex). Thus, our goal is to AI at least 4,000 females each breeding season to ensure that 1,000-1,100 steers will be available to market.

Allied Inputs and Marketing: The AIM Program

Les Anderson, Jeff Lehmkuhler, Darrh Bullock and Roy Burris

Like most states in the Southeast, most (86 percent) of the beef farms in Kentucky contain fewer than 50 head of cows. These producers face unique production and marketing challenges that hinder their ability to profit. Cost of production is higher for small and medium-sized beef producers. These producers are normally unable to negotiate costs of various inputs and generally are forced to pay retail for items such as vaccines, dewormers, minerals, and preconditioning feed. Costs of supplemental feeds are also higher because small producers are unable to purchase and store large enough quantities to enable them to purchase the commodities at prices offered to larger producers. Small producers are also at a marketing disadvantage. Currently, only 4 percent of all beef producers in Kentucky are large enough to market calves in load lots. These large producers are able to capture the added value of vaccination and backgrounding programs. Small producers often are unable to capture the added value of their calves because their marketing opportunities are more limited. With these inequities in mind, the University of Kentucky Beef Team developed a program to aid small and medium-sized producers to better compete in the marketplace.

The purpose of the Allied Inputs and Marketing (AIM) program is to encourage the formation of local alliances or cooperatives to enable producers to lower input costs of production and create a greater demand for their product. Our goal is to provide producers with information to help them organize and develop collective production and marketing plans. Producers in each alliance or cooperative work together to develop a production plan that would hopefully include breeding, nutrition, health, and marketing plans. Producers would then begin

to produce and market beef. Two main advantages can be obtained by cooperation among producers:

- Bulk purchasing: producers can take advantage of the economies of size by purchasing feed, minerals, vaccinations, etc. in bulk, thereby reducing production costs, and
- Mass marketing: producers can more readily obtain true market value for their calves because they can sell in larger, more uniform truckload lots.

Over the last several years, numerous AIM alliances have functioned in Kentucky. The first began in Washington County, and the second alliance was formed in Hardin County. At one time, these alliances together encompassed over 150 producers who more than 10,000 cows. Herd sizes ranged from four to 427. Each alliance established independent goals, and each functions differently. The purchasing programs have resulted in tremendous immediate savings. Purchased costs of products (minerals, dewormers, vaccinations, etc.) were from 20 to 30 percent lower than products available over the counter. Cooperative marketing efforts have also been successful. The Washington County Alliance conducts an annual feeder calf sale that has generated a \$5 to \$12/cwt. premium over other cattle sold in Kentucky that same day. Although the exact economic impact of the alliances is difficult to determine, net return per cow likely increased \$40 to \$50 in the Washington County Alliance.

Kentucky Heifer Development Program

Les Anderson

The expense necessary to develop replacement females is one of the greatest investments a beef producer makes. Kentucky's beef producers have made tremendous strides in recent years in the production of properly managed yearling heifers. The Elite Heifer Program was developed not only to educate producers on heifer development but also to serve as a supply of high quality replacement females. The Elite Heifer Sale in Bourbon County was the first successful program and several heifer development sales are currently being conducted.

In addition to these sales, a center for heifer development has been established in Kentucky. Most small producers have neither the time nor the separate handling facilities to properly develop heifers; therefore, participation in these heifer sales by small producers has been limited. The heifer development center was designed to give both large and small beef producers the opportunity to develop their heifers. Utilizing this center, producers have the opportunity to consign their heifers for development at the center. Producers deliver the heifers to the center either at or near weaning. The center then professionally develops all heifers according to strict guidelines. The heifer development center grows the heifers to their target weight, performs pelvic area measurements and reproductive tract scores, and prepares the heifers for estrus synchronization and artificial insemination. All heifers are subjected to estrus synchronization and are inseminated to a single, proven calving-ease bull. After pregnancy diagnosis, producers can select which heifers to retain for their cowherd. Heifers not selected can be marketed through a sale similar to the Elite Heifer Program.

The first heifer developed was the Eastern Kentucky Heifer Development Center (EKHDC) in Perry County. The heifer sales from the EKHDC's sales have been successful. Profit margins for the producers were estimated to be between \$150 and \$200 per heifer, however, many of the heifers go back to the origin farm as replacements.

Beef Cattle Genetic Improvement Program

Darrh Bullock (in cooperation with Kentucky Ag Development Board)

The Beef Cattle Genetic Improvement Program is a County Agricultural Investment Program (CAIP) of the Ag Development Board. Through this program producers are able to get cost-share dollars for up to half the purchase of a bull or semen, as long as the bull meets certain requirements. The requirements for the program include educational activities on proper bull selection, breeding soundness exams and production requirements based on Expected Progeny Differences (EPDs). Producers must decide the type of bull that would best fit their operation, prior purchasing the bull, from the following sire types: Heifer Acceptable; Balanced Trait; Terminal Sire; Low Maintenance; High Productivity; or Carcass Merit. Within each sire type the bull must meet certain production criteria based on his computed EPDs.

Beef Quality Assurance (BQA)

Kevin Laurent, Jeff Lehmkuhler, Donna Amaral-Phillips, Gregg Rentfrow, and Roy Burris (in cooperation with Kentucky Beef Council, Alison Smith, and Kentucky Beef Network)

The Kentucky Beef Quality Assurance (BQA) program was developed utilizing standard national guidelines from the National Cattlemen's Beef Association with cooperation and input from Kentucky Department of Agriculture, Kentucky Veterinary Medical Association, Kentucky Cattlemen's Association, and Kentucky Beef Network.

BQA is designed to teach and certify Kentucky beef producers and veterinarians to analyze their operations for practices that may cause defects in the end product and to address them with management recommendations. The program seeks to address any management practice or procedure that may impact end product quality. It goes further to address the need for expanded record systems on Kentucky beef operations to track use of drugs, vaccines, chemicals, feed additives, and the movement of cattle on and off the operations.

The certification process is accomplished through Extension publication Kentucky Beef Quality Assurance Program (ID-140), the use of a one-hour videotape or live presentation, and a post-test. Producer certification is effective for three years. A database of certified producers is maintained by the Kentucky Beef Network.

Certified Preconditioned for Health (CPH-45)

The CPH 45 program is a premium feeder calf management program developed and administered through collaboration between the University of Kentucky, Kentucky Cattlemen's Association, Kentucky Beef Network and the Kentucky Department of Agriculture. To qualify for the program, cattle must be managed according to specific guidelines and identified with an official CPH tag. Cattle are graded and sorted according to weight, breed and sex to insure uniform groups are sold.

Benefit to the producer:

- Opportunity to market cattle in large uniform lots
- Small Producers benefit from all numbers in the system
- Builds the reputation and ultimate value of Kentucky Cattle
- Simplified access to premium market
- Cattle marketed on true merit
- Access to premiums for better management

- Additional weight gain during the weaning period
- A national advertising campaign

Benefit to the buyer:

- Uniform health program
- Decreased pull rates
- Decreased death loss
- Increased performance
- Consistency in size and type of cattle
- Ability to track cattle
- Working relationship with cow/calf producers to develop a more uniform product
- \$200 guarantee (no bulls or bred heifers)
- All consignor Beef Quality Assurance certified

Health Management Requirements:

- Owned by seller at least 60 days
- Weaned a minimum of 45 days
- Eating from a bunk
- Drinking from a trough
- Mineral requirements must be followed. (Consult CPH 45 form for specifications.)
- Dehorned and healed
- Castrated and healed (knife castration strongly recommended)
- Treated for grubs and lice (according to seasonal recommendations)
- Dewormed no more than 60 days prior to the sale with an endectocide. (Consult your county agent or KBN facilitator for clarification.)
- Vaccinated for clostridia(7-way) subcutaneously in the neck
- Vaccinated & boosted for IBR, BVD, PI3 and BRSV (booster shot required to be modified live)
- Vaccinated for manheimia hemolytica (pastuerella)

** All vaccines must be given no more than 90 days and at least 14 day before the sale.

Sorting Restrictions:

- NO VISIBLE horns or scurs
- No rat tails
- No Dairy cattle
- No shorts
- No pinkeye or severe scars
- No severe structural defects
- No defects or conditions that detract from appearance of cattle

In addition to the stated requirements, sales have the option of adding additional health and verification requirements. Refer to www.cph45.com for a list of specific requirements for each sale as well as schedules, forms and contact information.

Beef Youth Activities

Darrh Bullock, Jeff Lehmkuhler, Les Anderson, and Roy Burris

The Livestock Youth Program is coordinated by Richard Coffee, and the beef Extension group is involved in several beef youth activities on both state and national levels. These activities include:

- assisting state 4-H livestock judging contest
- assisting national 4-H, junior college, and collegiate livestock judging contest
- assisting NAILE breeding and steer shows

Dairy

Kentucky Dairy Notes

Dairy Extension Production Team

Kentucky Dairy Notes is a monthly newsletter published by the UK Dairy Extension Group that contains articles on timely dairy production topics. This resource is provided to county Extension agents in a portable document format (PDF) where copies can be mailed directly to dairy farmers in their county as well as easily incorporated into county newsletters or newspaper articles. Issues are also published on the UK Dairy Extension web site and links to articles emailed to a listserv.

DAIReXNET – National Dairy Web Resource

Donna Amaral-Phillips

DAIReXNET is a national, Extension-driven web resource designed to meet the educational and decision-making needs of dairy producers, allied industry partners, Extension educators, dairy undergraduates, and consumers. The DAIReXNET web site is located at <http://www.extension.org/dairy+cattle>. This web site contains:

- Current in-depth, peer-reviewed articles covering various topics in dairy production. Currently, resources are provided in the areas of business management and farm labor, calf and heifer management, facilities, food safety, genetics, health and diseases, mastitis and milking management, milk marketing, nutrient management, nutrition of milking and dry cows, and reproduction. Several of these materials are available in Spanish for Spanish-speaking farm workers.
- Webinars on timely issues in the dairy industry. These are presented live and are archived for later viewing.
- Answers to frequently asked questions (FAQs) and user-submitted queries on various aspects of dairy cattle production.
- Access to top experts in the dairy profession when answers are not available in the FAQs or resource material.
- State-specific news and articles in searchable newsletters from all available states and the latest news releases and highlighted news stories from across the country.
- Links to land-grant-supported Web sites that pertain to the dairy industry.
- Consumer information that includes reviewed consumer links about the dairy industry and its products.

UK Dairy Web Resources

Dairy Extension Production Team

Articles on a variety of topics on nutrition, reproduction, genetics, facilities, DHIA, and financial management as well as articles from previous Kentucky Dairy Conferences are provided at the following link: <http://www2.ca.uky.edu/afsdairy/extension> .

Sustainable Dairy Systems Manual

Dairy Extension Production Team

This manual is a 12-chapter publication with spreadsheets to calculate the cost of production for a dairy system for farmers considering expanding or changing their facilities or feeding and management programs. Example systems are given for 50 to 800 cow dairies. In 2013, the manual will be updated and converted to a web-based program as part of the Kentucky FarmStart program.

Resource for Herds Relocating to Kentucky

A notebook is available with information about relocating dairies to Kentucky. This resource is available through Eunice Schlappi (Eunice.Schlappi@ky.gov, 502.564.0260) at the Kentucky Department of Agriculture.

Kentucky Dairy Partners Annual Meeting

Dairy Extension Production Team

In 2008, the first joint annual meeting between the Kentucky Dairy Development Council, American Dairy Association of Kentucky, and the Kentucky Dairy Conference was held. This program is a continuation of the Kentucky Dairy Conference begun by the UK Dairy Extension Team in 1980. This educational program provides cutting-edge and timely topics related to the dairy industry. Typically, this program is held the last Wednesday in February at the Bowling Green Convention Center.

Kentucky Dairy Farmers – Helping Farmers Adapt to New Challenges and Opportunities

Dairy Extension Production Team

These programs deal with changes that farmers are encountering, such as higher feed costs, low milk prices, lowering of milk quality standards, weather conditions, animal well-being, and environmental management. In addition, these programs look at opportunities in management of replacement heifers, dry and fresh cows, new technologies, and hoof care. The programs are supported through materials presented at local meetings, articles through various avenues (such as “Farmer’s Pride”, “Kentucky Dairy Notes”, or the KY Dairy Industry (KDDC) newsletter), and a web-based collection of written resources on the UK Dairy Extension site.

Compost Bedded Pack Barn Project in Kentucky

Jeffrey Bewley, Joseph Taraba, and George Day

Compost bedded pack barns are a relatively new facility option for dairy producers. When managed properly, these facilities provide an economical, animal-friendly environment for dairy cows. We have worked together to provide information and technical support to producers

managing these facilities to assist in barn construction and management. During the winter of 2010/2011, we conducted an extensive field research project to characterize and describe 43 compost bedded pack barns in Kentucky including animal, compost, and building design factors. During these visits, we were also able to provide personalized advice based on our current knowledge. In 2012, we will be a part of a three state effort (with Ohio and Tennessee) to conduct extension programs on compost bedded pack barn management. We have been able to assist many producers in improving the performance of their compost bedded pack barns and consulted with additional Kentucky producers in designing new facilities.

Dairy Advancement Institute- Western KY Dairy Programming

Dairy Extension Production Team

The Western KY farmer-driven group, located mainly in Christian, Trigg and Todd Co, has designed a multi-faceted educational program with an additional goal of training their children, the next generation of farmers, alongside their parents. In 2011, the Dairy Advancement Institute was initiated and consisted of three separate programs held in two local communities. These programs addressed plant nutrient management, forage production, and feeding management. In addition, three pasture walks to address grazing management practices (part of the Master Grazer Educational Program) have been incorporated into this educational effort. The highlight of this educational program is the summer educational event for the Amish and Mennonite families. This educational event incorporates educational programs for the adults, children, and children and parents together. For the children activities, the dairy extension group is able to teach the science behind dairy husbandry.

Dairy Feeding and Management Clinics

Donna Amaral-Phillips

Implementing sound nutrition programs and evaluating the effectiveness of these programs are key steps to a profitable dairy operation. These one-on-one clinics help farmers critically evaluate feeding and management programs as they relate to forage quality, body condition of cows and heifers, and nutritional adequacy of diets actually consumed.

Freestall Barn Cow Comfort Modernization

Jeffrey Bewley

This program focuses on providing direct assistance to dairy producers looking to improve the cow's physical environment through facility construction or renovation. Kentucky lags behind much of the country in providing cows with a comfortable place to rest and in helping them deal with heat stress using fans and sprinklers. Today's freestall barns provide a more desirable environment for dairy cows than those that were constructed 20, 30, or 40 years ago. Nevertheless, dairy producers still housing their cows in these older facilities could observe dramatic improvements in cow comfort by making some minor, relatively simple changes or more significant structural changes to existing freestalls. We have worked to educate producers on the production, profitability, and animal well-being benefits observed with improved cow comfort. A presentation entitled "Flip that Freestall: Modifying Freestalls for Improved Cow Comfort" has been developed to present to dairy producers along with an accompanying factsheet.

M.I.L.K. Counts

Jeffrey Bewley and Michelle Arnold

We have implemented a multi-faceted approach to extension programming for SCC reduction. These programming efforts have included traditional delivery methods (workshops and on-farm visits) and electronic tools (YouTube videos and a decision dashboard). A series of SCC reduction workshops have been developed. Additionally, YouTube videos were developed (<http://www.youtube.com/user/UKAgriculture>) to demonstrate recommended milking procedures and to provide virtual tours of farms that consistently maintain low SCC.

The University of Kentucky Dairy Extension team works closely with the Kentucky Dairy Development Council in a farm-based program entitled M.I.L.K. Counts. The intent of the program is to provide direct, on-farm technical assistance to producers struggling with SCC through evaluation of DHIA records, milking procedures, management protocols, animal hygiene and housing, and dry cow treatment and handling. A simple dashboard tool has been developed to examine the economic opportunities associated with lowering somatic cell count (<http://www2.ca.uky.edu/afsdairy/MilkQualityCalculator>).

Local Dairy Meetings Planned by Dairy Farmers

Dairy Extension Production Team

In 2003, Green, Taylor, and Adair counties started their dairy management short course, and each winter they continue to have interactive educational sessions. Each year, a group of farmers with the help of their county Extension agents plan their three winter meeting series on timely topics and an early spring visit to a neighboring dairy facility. Each of these meetings is centered around a single topic presented in a discussion format. The discussions during these meetings are excellent, with farmers learning not only from the presenters but also from each another. In the fall, a field day on a local farm is held to complement the educational programs held during the winter.

Using Production Records to Make Management Decisions

Donna Amaral-Phillips

With the retirement of one dairy extension colleague whose position was not refilled, Dr. Amaral-Phillips has assumed the formal responsibility to develop educational programs on the use of production records to make management decisions. Herds on these programs need educational materials to help them better understand how to use this resource to manage their herds. The first series of written articles explained how to utilize herd milk production data to better manage their feeding and herd replacement programs. In the future, additional articles will cover other aspects of management. A series of articles are planned to help new herds understand how to better utilize their records.

Kentucky Dairy Development Council (KY Dairy Producer Organization) Barn Meetings

Dairy Extension Production Team

Dairy specialists have made presentations for the educational component of these programs.

Kentuckiana Dairy Exchange

Jeffrey Bewley, Larissa Tucker, Donna Amaral-Phillips, George Heersche

The Kentuckiana Dairy Exchange is a joint program between the UK and Purdue Dairy Extension Teams and is supported by many industry sponsors including the Kentucky Dairy Development Council and the Indiana Professional Dairy Producers. The Kentuckiana Dairy Exchange is designed as a forum for exchange of ideas and information between producers within and across Kentucky and Indiana. The program alternates between Kentucky and Purdue. Local farm tours are conducted by the host state and the visiting state's extension specialists provide informational presentations. This format provides dairy producers in both states with access to dairy farms and extension specialists they would not normally have the opportunity to learn from.

Master Grazer Education Program

Donna Amaral-Phillips, Jeff Lehmkuhler, and Ray Smith (in collaboration with other specialists in the departments of Plant and Soil Science, Agricultural Economics, and Veterinary Science)

This program educates beef, dairy, sheep, and goat producers on ways to improve the utilization and quality of forages grazed. Components of the Master Grazer Educational program were conducted across the state of Kentucky. These educational programs included Kentucky Grazing Schools, an Advanced Grazing School, regional grazing networks, and timely written information regarding management of grazing systems.

Kentucky Grazing School is a two-day program consisting of classroom education and hands-on education and demonstrations. This program is intended for farmers wanting a more in-depth discussion on topics needed to establish and/or modify a rotational grazing system. Usually, this program is held twice yearly during the spring and summer or fall growing seasons. Farmers, NRCS personnel and county agents have and are welcome to attend this program.

Advanced KY Grazing School, a one-day program, begun in July 2012, is designed to expand on the concepts presented at the KY Grazing Schools and share on-going grazing research being done at the University of KY.

Regional Grazing Networks consist of multiple educational programs held in the field which illustrate the implementation of grazing practices and are designed to increase networking amongst producers.

University of Kentucky Grazing News is a 4-page newsletter published monthly during the grazing season. This newsletter is mailed to those who do not have access to the web and is distributed electronically to all county extension agents for use locally and individuals on a dedicated grazing listserv. In addition, a DVD has been produced for those unable to attend a grazing school.

Website for Master Grazer Educational Materials has been developed and resides at <http://www2.ca.uky.edu/grazer> which contains all previous and current newsletter articles, listing and information of upcoming events, important contacts, and links to other useful websites.

4-H Dairy Events and Awards

George Heersche and Larissa Tucker

State Dairy Jeopardy: Junior and senior individuals are asked questions about the dairy industry in a series of one-on-one contests. The Kentucky Dairy Jeopardy contest is

usually held in May. The top four seniors are chosen to represent Kentucky at the North American Invitational Dairy Quiz Bowl in November.

Dairy Cow Camp: This is a statewide event for dairy cattle judging training and fellowship usually held on a Saturday in April.

Dairy Skillathon: This event encourages youth to learn the practical and scientific aspects of dairy cattle husbandry and dairy food nutrition and safety. It is held on the Wednesday night before the opening of the Kentucky State Fair.

Kentucky 4-H Non-Ownership Dairy Animal Project: The purpose of the 4-H Non-Ownership Dairy Animal Project is to provide an opportunity for 4-H youth who do not live on a farm to care for and show a registered dairy animal without the animal being transferred into the youth's name.

State Dairy Judging Contest: This contest is held in Lexington during June and is open to junior and senior members.

District 4-H Dairy Shows: These shows, held in June and early July, are conducted by the Cooperative Extension Service and the Division of Shows and Fairs. Youth can show registered or grade animals of the five major dairy breeds. The show locations are Shelbyville, Bowling Green, Edmonton, Harrodsburg, Liberty and Tollesboro.

Advanced Judging Workshop: Additional training is offered for youth who are the top senior individuals at the state judging contest in July or August. First, second, and third teams are selected based on scores from the state contest and the advanced workshop.

Kentucky State Fair 4-H/FFA Junior Dairy Show: This event is held Thursday and Friday at the start of the Kentucky State Fair.

Pennsylvania All-American Judging Contest: This contest is held in Harrisburg, Pennsylvania, during September. Participants are the top Kentucky 4-H dairy judging team.

National 4-H Dairy Cattle Judging Contest: This contest is held in Madison, Wisconsin, during late September or early October. The trip lasts for about one week. Participants are the top Kentucky 4-H dairy judging team.

National 4-H Dairy Conference: This super conference is held in and around Madison, Wisconsin, during the last week of September or first week of October. Kentucky participants are selected from youth nominated by county Extension agents and leaders.

Dare to Dairy: This event is in cooperation with the University of Kentucky Dairy Club. It is designed to give youth the opportunity to experience some of the science behind animal agriculture while highlighting dairy farming. It is held at the University of Kentucky Coldstream Dairy on a Saturday in October. Garland M. Bastin Dairy Scholarship Award: This award is given annually to the 4-H youth who has exhibited enthusiasm, ability, and exceptional personal character while judging dairy cattle. A scholarship is awarded if the youth attends the University of Kentucky and majors in a dairy-related field.

North American Invitational Dairy Quiz Bowl: This event is held at the Kentucky Fair and Exposition Center in Louisville on the first Friday and Saturday of the North American International Livestock Exposition. The senior winning team from the state Dairy Quiz Bowl Contest represents Kentucky.

North American Invitational Youth Dairy Cattle Judging Contest: This contest was held for the first time in 1982 in conjunction with the North American International Livestock Exposition in Louisville. A team selected from the top senior dairy judges represents Kentucky.

Equine

State of the Equine Industry

In 2012 the first comprehensive study of Kentucky's Equine Industry was completed. The survey looked at the population of horses in the state plus the values of equine assets plus issues related to the industry.

The survey reported that there are 242,000 horses in the state with Thoroughbreds being the largest breed with 54,000 horses. Quarter Horses are second at 42,000 while Tennessee walking horses were at 36,000. Of the survey respondents it was noted there are Quarter Horses in 88 counties while Tennessee Walking Horses were reported to be in 89 counties.

The primary use of horses in Kentucky is for trail or pleasure riding. This was followed by a large number of horses kept as broodmares. The strong recreation use numbers indicate that as in the past sport and recreation is the primary use of horses in the state.

Economically the survey noted sales and income from horse related activities to exceed \$1 billion dollars. This was made up of sales and services for the industry. Sales represented \$521 million while breeding and services (such as training, boarding, lessons, etc.) contributed an additional \$491 million.

Total expenditures related to the industry were 1.2 billion. Of this number \$839 million was related to operating expenses with 77% of operating dollars spent in Kentucky. In 2006, a Breeders Incentive Fund for non-race horse breeds was developed by the state legislature. This fund, derived from the state sales tax on stallion service fees, has been used to establish breeder incentives for non-race breeds in Kentucky. As of 2012 there are 11 non-race breeds with approved incentive programs supporting their breed activities. The result has been increased equine activity and economic development across the state.

In addition to the economic value of the horse industry, there is a significant social value. Many horse owners are turning to the horse as a means of family recreation. The youth activities in the state include a very active horse program. Currently more than 5,000 youth are enrolled in the 4-H Horse Program.

While the horse industry has had many challenges in the past due to the economy and cost of horse ownership people are still purchasing horses for use in sport and recreation activities. Many of these horse owners have limited experience with horses and are often from a non-agricultural background. This group seeks basic non-technical information on nutrition, health care, facilities, basic training, and riding so they can enjoy their horses in recreational activities. To meet this need for information, the Extension specialists and associates coordinate and deliver a wide variety of educational programs across the state for both youth and adult audiences. Providing information to those involved in the 4-H program is more direct, but it is somewhat difficult in targeting the adult horse owner. As mentioned, many of these people are new to the horse industry and may not belong to any equine-related association. Nor do many of these people routinely consult their county Extension agent. The biggest challenge is finding the most appropriate method of providing information to these new horse owners.

Educational Activities

Bob Coleman, Fernanda Camargo, Amy Lawyer

Educational activities are provided for both youth and adult horse owners. In the youth program, there are educational opportunities for the youth through camps, clinics, and seminars and the State Horse Show and Horse Contests. For the adults and volunteer leaders, activities include information on the state program and horse-related information.

Adult Education

Bob Coleman

Horse College: The primary educational activity for adult horse owners is Horse College. This program is aimed at the non-racehorse owner and provides an educational opportunity for horse owners ranging from very new to those who have owned horses for many years. The basic program is delivered as four evening seminars with the specific curriculum developed between the Equine Extension specialist and the county agents hosting the program. The program is offered as a multi-county activity. Topics covered are taking from the following list of nutrition and feed management, health care, breeding management, equine behavior, facility design, tack and equipment, information, hoof care, pasture establishment and management. Since the program started it has been offered to over 90 counties and 1500 horse owners. The Centra System was used to provide greater access to the program while reduce travel with modern resources. In the future, the Lync meeting system will be tested as a method to deliver Horse College across the state. Using new technologies will aid in delivering the educational material in a timely manner with reduced travel for all involved.

In 2012 an Advanced Horse Program is being delivered with the first program scheduled for Boyle County.

Horse Owners Grazing School: Based on the Master Grazer Program, the Horse Owners Grazing School has been offered. The program was started as horse owners who had attended the Master Grazer Program wanted more specific horse-related pasture management topics to supplement what was learned at Master Grazer. This program has been given four times to over 150 horse owners in over 15 counties.

Pastures Please: Working with county agents to develop directed horse programs has resulted in a pasture-oriented evening seminar. What started in central Kentucky to deal with pasture issues related to the 2007 drought “Pasture Please” has been offered for the past four years in central Kentucky has reached over 500 horse owners from all segments of the horse industry.

Farm and Facility Expo

UK Ag Equine Programs Forage Working Group

Within the Equine Programs of the College of Agriculture there is an active group—the Forage Working group. This group is made up of agents, specialists and researchers have developed a Farm Expo Program for horse owners. The focus of the program has been on pasture management focusing on the smaller acreages. The Field Day Program has been offered on three farms in Central Kentucky with over 700 people attending. In 2012, the format was done in Western Kentucky with over 155 horse owners from across the region attending.

4-H Horse Program

Fernanda Camargo and Amy Lawyer

The horse program in Kentucky is very active with current enrollment at more than 5,000 youth. Participation in all areas of the program is strong.

State Show: The State Horse Show is held in Louisville during the first part of July. This eight-day activity offers more than 120 classes for all horse breeds. Participation at the show has been around 600 4-H'ers and more than 800 horses each year. This translates to more than 3,000 entries over the seven-day show.

State Horse Contests: In addition to participating in activities with their horses, the 4-H'ers in Kentucky also participate in non-horse events. The Horse Contest event includes horse judging, horse bowl, hippology, public speaking, presentations (individual and team), photography, and crafts. 4-H'ers from ages nine to 18 participate in this two-day activity. In general over 300 4-H members participate in the State Horse Contests.

State Judging Contest: The judging contest happens in June. We have between 8 and 10 horse classes (in hand and performance) to start the contest followed by oral reasons. Approximately 120 youth participate in the State Judging Contest.

Horsemanship Clinic: This is a day-long training clinic in which a horse trainer demonstrates and teaches live the basics of horse training and problem solving. Senior 4-H'ers can apply to have their horse participate in this program and learn training tips directly from the trainer on how to solve those problems. This program happens in March/April.

Horse Volunteer Certification Program and other Horse Leaders' Training Opportunities

Fernanda Camargo and Amy Lawyer

The Horse Volunteer Certification Program (HVC) was implemented in the fall of 2010. The HVC program is a resource to horse volunteers across the state so they can more capably teach and lead the youth in the Kentucky 4-H Horse Program. Every horse volunteer, to be allowed to be the leader of a 4-H horse club, needs to attend and pass the certification training. The training workshop is offered two or three times a year in different areas of the state. Up until the summer of 2012, we have offered 5 workshop trainings across the state, and have certified 226 leaders from 85 counties.

The Kentucky 4-H Volunteer Forum is a biannual event sponsored by the State 4-H Office. This event is held to provide 4-H Youth Extension Agents and Volunteer Leaders with educational workshops on various youth programs. When there are 7 presentations on one subject, a "track" is formed. The Horse Track consists of workshops and presentations designed to provide updates and training to agents and leaders on the 4-H Horse Program. The Forum is an excellent opportunity for certified leaders to receive more subject matter training.

We also offer subject matter training opportunities year-round in conjunction with county agents.

Multi-State Horse Judges' School

Amy Lawyer

Within the horse industry, there is a great demand for trained people to judge open and 4-H horse shows. To meet this need in Kentucky, a judges' school was started in 1997. The program was run for two years before it evolved into a multi-state judges' school. Currently, the program is coordinated and administered by 4-H Extension personnel from six states (Kentucky, Indiana, Illinois, Ohio, Michigan, and Pennsylvania). The school is hosted by a different state each year. The attendees, while primarily from the organizing states, represent a broad cross

section of the horse industry in the Northeast region. Attendance is open to all, and the attendance at the judges' school has averaged 180 people since it started in 1999. In 2001 and 2005, the school was held in Kentucky and received a Barnhart grant of \$1,000, which allowed the organizer to add live judging to the program.

This school provides an excellent opportunity for those who wish to learn more about judging while also giving the participating states the opportunity to identify people who can officiate at open and 4-H horse shows. The availability of trained people who officiate at horse activities will increase the participation at these activities, thus helping the whole horse industry.

Publications: The following materials listed are all available electronically at www.ca.uky.edu:

- 4AF-03RE 4-H Horse Project Record for Kentucky 4-H Horse Club Members
- ASC-188 Help! My Horse is Too Thin!
- ASC-187 Help! My Horse is Too Fat!
- ASC-184 Preventing Barn Fire: Tips for Horse Owners
- ASC-183 Horses and Rain
- ASC-181 Equine Infectious Anemia
- ASC-180 Anthrax in Horses
- ASC-176 Core Vaccination Program and Infectious Disease Control for Horses
- ASC-173 Botulism: A Deadly Disease That Can Affect Your Horse
- ASC-172 Heaves in Horses
- ASC-146 Methods of Identification for Horses
- ASC-128 Colic in Horses
- ASC-125 Rabies in Horses
- ID-197 Equine Viral Arteritis
- ID-196 Equine Initiative Calendar, 2012-13
- ID-183 Trail Riding Etiquette for Horse Enthusiasts
- ID-182 Wobbler Syndrome in Horses
- ID-179 Evaluating the Health of Your Horse
- ID-173 Equine Emergency and Disaster Preparedness
- ASC-157 Teasing Mares
- ASC-143 Equine Feeding Management
- ASC-118 Horse Judging Manual
- ASC-117 The Stallion: Breeding Soundness Examination and Reproductive Anatomy
- ASC-116 The Mare: Breeding Soundness Examination and Reproductive Anatomy
- ASC-115 Formulation: Rations for Horses
- ASC-114 Basic Horse Nutrition
- ASC-113 Nutrition of the Performance Horse
- ASC-112 Nutrition of the Broodmare
- ASC-111 Feeding Young and Growing Horses
- ID-164 High Traffic Area Pads for Horses
- ID-161 Pervious Concrete as a Flooring Material for Horse Handling Areas
- ID-147 Establishing Horse Pastures

ID-143	Rotational Grazing
ID-146	Choosing Hay for Horses
ID-145	Alfalfa Cubes for Horses
ID-144	Understanding Endophyte-Infected Tall Fescue and Its Effects on Broodmares
ID-158	Managing Steep Terrain for Livestock Forage Production
ID-165	Temporary Fencing for Horse Pastures
AEC 2006-03 Using Agricultural Economics Equine Enterprise Budgets	

Food Science

University of Kentucky Meat Cutting School

Gregg Rentfrow

In the past, meat cutting schools dotted the landscape with the most famous school located in Toledo, OH. Students at these schools would spend several weeks gaining hands-on experience harvesting animals and fabricating carcasses, along with learning about the meats and livestock industries. The introduction of boxed meats in the 1970's ushered the meats industry into a new era. Boxed meats are easier to cut and do not require a prior knowledge of carcass anatomy. Meat cutting schools closed as skilled cutters were no longer needed. The responsibility of training and teaching new meat cutters fell upon the senior meat cutters. However, over the years knowledgeable, properly trained meat cutters became fewer and fewer in numbers.

The UK Meat Cutting School offered a two or three day workshop designed for retail meat cutters. The participants learned about the meats and livestock industries in the morning classes and participated in cutting demonstrations in the afternoon. Furthermore, the retail cutters observed an animal (beef or pork) being harvested, which was a first for the majority of the students. Over 500 retail meat cutters from five states participated in the class and the grocery stores indicated a reduced turnover of meat cutters along with improved customer service.

The UK Meat Cutting School works one-on-one with Kentucky's meat processors. There are very few skilled meat cutters; therefore meat processors are hiring unskilled employees. In addition, meat processors want to add-value to their operations by offering the new beef cuts like the Flat Iron Steak, the Shoulder Tender Medallion, the Denver Cut, and the Ranch Cut. The UK Meat Cutting School works with meat processors to train new meat cutters and demonstrate how to fabricate the new beef cuts.

Consumers and farmers are becoming more interested in how meat is fabricated as well as learning more about the new beef cuts. The UK Meat Cutting School has performed meat cutting demonstrations in several Kentucky counties (22 counties) as well as demonstrations and trainings in other states (North Carolina 2, Tennessee 2, New York 1; California 1). The cutting demonstrations have become very popular and have raised awareness of the new beef cuts and provided audience a chance to ask questions about the meats and livestock industries.

The UK Meat Cutting School is poised to expand services in the future. Restaurant chefs are becoming more interested in processing their own carcasses and turning the trimmings into dry-cured sausages (charcuterie) or dry-cured, prosciutto-style hams. Future workshops are planned to train chefs on proper charcuterie techniques to produce wholesome,

safe, high-quality dry-cured meat products. Furthermore, the majority of the Commonwealth's meat processors offer very little or no further processed meats such as Summer Sausage, flavored bacons, or boneless hams. The UK Meat Cutting School will be offering more processed meats workshops which will allow processors to expand services to survive through a struggling economy.

Food Systems Innovation Center

Gregg Rentfrow, Joe O'Leary, Melissa Newman, Tim Woods, Wuyang Hu, and Angela Anandappa

Locally produced foods are increasing in popularity. The Kentucky Proud program promotes foods raised, grown, and/or produced within the Commonwealth. The majority of these foods are marketed at local farmer's markets and some have become popular and/or have gained the attention of larger markets. When this happens, these entrepreneurs have question about increasing/up-scaling production, nutrition labels and analysis, determining a shelf-life, and/or marketing. The Food Systems Innovation Center (FSIC) is a multi-discipline program designed to aid Kentucky's food entrepreneur's answer these questions.

The FSIC is a collaborative effort between the Department of Animal and Food Science and Agricultural Economics, with associate members in the Department of Dietetics and Human Nutrition and the Department of Biosystems and Agricultural Engineering. The FSIC offers a variety of services such as shelf-life determination, microbial analysis and challenge studies, nutritional label analysis, sensory evaluation, and help with marking. All with the goal of aiding Kentucky's food entrepreneurs produce safe, wholesome, legal food products. Clients are vetted through Ms. Angela Anandappa, FSIC Coordinator, to determine their needs and then are directed to the appropriate faculty members with in the FSIC. Currently, the FSIC has helped over 200 clients and over 100 products reach the marketplace. Although the FSIC is designed to aid Kentuckians, it has helped food marketers in Ohio, Tennessee, Indiana, California, and Nevada.

Education is an important part of the Food Systems Innovation Center. Agricultural Economics offers the Market Ready workshop, which outlines the steps needed to introduce a product into the marketplace. In addition, the FSIS regularly offers Hazard Analysis and Critical Control Points (HACCP) classes, along with Food and Drug Administration (FDA) Better Process Control Schools. These food safety workshops/trainings are mandatory for the production of FDA and USDA foods. The educational programs offered by the FSIC have reached over 700 people from four different states.

Farm to Campus

Gregg Rentfrow, Ryan Chaplin, Zlatan Prosovic, and Scott Kohn

The University of Kentucky Executive Chef Scott Kohn strives to source as much local foods to feed the over 28,000 students on campus, as possible. In 2006, Chef Kohn purchased approximately \$20,000 of locally grown/produced foods; during the 2011-12 academic years UK purchased over \$750,000 of locally grown/produced foods. Some foods such as fruits and vegetables are easy to purchase; however, due to USDA inspection, local meats involves unique challenges. To overcome these challenges the UK Dining Services and the UK Meats Laboratory have team-up to provide local meats to the UK community.

Recently, the UK dining services began to purchase locally raised beef and pork. The live animals are harvested by a local meat processor and then vacuum packaged wholesale cuts are delivered to the dining service kitchens for fabrication into retail cuts. Chef Prosovic has

been experimenting with making various charcuterie (dry-cured meat products) items from the trimmings generated from the retail cut fabrication. USDA inspection is required for the sale of these charcuterie items. Therefore, the charcuterie items, including the initial fabrication of the wholesale cuts will occur under USDA inspection at the UK Meat Science Laboratory.

The collaboration will give UK students an opportunity to gain valuable hands-on experience making dry-cured sausages that would normally only be discussed in theory or demonstrated in class. In addition, this program will help make UK more sustainable. This is the only collaboration between a university meats laboratory and a dining service in the country.

4-H Country Ham Project

Gregg Rentfrow

Country hams are as much a part of Kentucky's heritage as horses, Bluegrass, and bourbon. The 4-H Country Ham Project began in 1997 with 35 4-Hers and has grown to over 700 4-Hers in 2012 representing 58 counties in Kentucky. Students begin the project during the cold winter months with two fresh hams, and gain valuable hands-on experience curing, caring for, and preparing a country ham to show at the state fair. In addition, 4-Hers must give a three to five minute speech about the project at the state fair in August. The student will get to keep the two hams they cured at the completion of the project, which are valued at over \$80 each. More importantly, the 4-Hers learn about their Kentucky heritage, where their food comes from, and how to foods were preserved before the invention and development of mechanical refrigeration.

Poultry

Applied Research Activities

Anthony J. Pescatore, Austin Cantor, Mike Ford and Jacquie Jacob

Applied research activities focus on issues of critical importance to the poultry industry and poultry producers. Areas of interest include manure and nutrient management, feeding and nutritional strategies, alternative feed ingredients, and environmental nutrition.

Projects have included:

- Use of algae products to change nutrient composition of eggs
- Effect of early nutrition of poultry on productivity
- Effect of selenium source on bird growth and productivity
- Use of organic minerals to improve bird performance and reduce environmental impact
- Use of distiller's dried grains with soluble (DDGS) in poultry diets
- Use of heritage breeds of chickens in small flock poultry production systems

4-H Poultry Activities

Anthony J. Pescatore, Jacquie Jacob, Mike Ford and Austin Cantor (in cooperation with the Kentucky Poultry Federation and the Kentucky Fair and Exhibition Board)

4-H poultry activities provide leadership skills and serve as a resource for the poultry and embryology 4-H programs. The incubation and embryology project is one of the largest programs in animal science providing the participants the opportunity to learn about the

development of an embryo and the life cycle. 4-H conducts five state contests in project areas including poultry judging, avian bowl, egg preparation demonstration, chicken barbecue demonstration and turkey barbecue demonstration. Training is also offered for the state representatives to the national 4-H contests. In-service training is provided to county extension agents, volunteers and youth on a variety of different poultry programs.

Multi-State Poultry Extension Program

Anthony J. Pescatore and Austin Cantor (in cooperation with the University of Illinois, Purdue University, Ohio State University, Michigan State University and various corporate sponsors)

The multi-state poultry extension program is a cooperative effort among Illinois, Indiana, Kentucky, Ohio and Michigan. Through this program, the Multi-State Pet Bird Conference, the Multi-State Poultry Health and Management Conference, and the Multi-State Ergonomic Workshop have been conducted. This program has successfully provided high-quality education programs to the poultry industry in the five-state area. Since the beginning of this multi-state effort, 32 conferences have been conducted with more than 6,000 participants.

Producer Consultation Activities

Anthony J. Pescatore and Jacquie Jacob

The variety of different types of poultry operations from large companies to small poultry flocks results in personal consultation and are an integral component of the poultry extension program. Producers, county extension agents, and support industry personnel require personal contact with individuals who have the technical expertise and resources to assist them in the decision-making and problem-solving process. Personal consultations are used to address all areas of poultry production and would include management, health and disease, environmental sustainability and troubleshooting. Internet resources have been developed to assist commercial poultry producers (www.poultryprofitability.com) as well as small and backyard poultry flocks (www.smallflocks.com). The University of Kentucky has also played a major role in the development of a poultry presence on the new only extension program including the development of a new website at www.eXtension.com/poultry.

Publications

- 4AJ-02PO – Kentucky 4-H chicken and turkey barbecue contests
- 4AJ-03PO – Kentucky 4-H Poultry: Barbecue contests
- 4AJ-04PO – Kentucky 4-H Poultry: Poultry judging contests
- 4AJ-05PO – Kentucky 4-H Poultry: Grading Eggs
- 4AJ-06PO – Kentucky 4-H Poultry: Grading ready-to-cook poultry
- 4AJ-07PO – Kentucky 4-H Poultry: Evaluating egg-laying hens
- 4AJ-08PO – Kentucky 4-H Poultry: Giving oral reasons
- 4AJ-09PO – Kentucky 4-H Poultry: Egg preparation demonstration
- ASC-189 – Making a Hoop Pen for Pasture Poultry
- ASC-190 – Selecting the Right Chicken Breed
- ASC-191 – How Much Will My Chickens Eat?
- ASC-192 – Why Have My Hens Stopped Laying?
- ASC-193 – Poultry Producer Liability
- ASC-194 – Poultry Production Troubleshooting
- ASC-195 – Development of the Chick

- ASC-196 – Selecting the right breed of goose
- ASC-197 – Selecting the right turkey variety
- ASC-198 – Selecting the right breed of duck
- ASC-199 – Avian male reproductive system
- ASC-200 – Avian respiratory system
- ASC-201 – Avian female reproductive system
- ASC-202 – Avian skeletal system
- ASC-203 – Avian digestive system
- ASC-204 – Avian muscular system
- ASC-206 – Common external parasites of poultry
- ASC-209 – Raising guinea fowl
- ASC-201 – Processing chicken

Extramural Funding

Anthony J. Pescatore, Jacquie Jacob, Gregg Rentfrow and Austin Cantor

- Use of natural strategies to alleviate enteric pathogens in organic poultry

This research and extension project is a cooperation among several universities including the University of Kentucky, University of Arkansas, USDA-ARS, University of Connecticut, Pennsylvania State University, University of Tennessee and Appalachian State University.

Using combinations of natural plant compounds and management approaches customized for organic production; our objective is to develop comprehensive strategies to eliminate enteric diseases (necrotic enteritis) and foodborne bacterial contamination (Salmonella and Campylobacter) in organically raised poultry.

- Profitable and sustainable poultry production on small- and medium-sized farms

This multi-disciplinary project is a collaboration between the University of Kentucky and Kentucky State University and includes research in the areas of poultry production, insect identification, food quality, marketing and economics. The overall objective of the project is to use animal husbandry and marketing research components to develop a model that can be used to make economic and agribusiness management projections regarding alternative poultry production on small- and medium-sized farms. Heritage chicken breeds provide characteristics that make them more suitable for alternative management systems and are being investigated for production in small- and medium-sized poultry flocks.

- Establishment of a new poultry-related Community of Practice on eXtension

The new CoP targets the needs of poultry owners with small- to medium-sized production flocks as well as those with backyard flocks. This includes urbanites with a handful of chickens to small production flocks of 500 to 20,000 per year. For the former, poultry are kept mainly as pets while for the latter they are kept as a source of income.

- Farming for cash: An apprenticeship program for Kentucky's beginning limited-resource and small-scale farmers.

The project with Kentucky State University mentors beginning farmers to begin profitable farming in a very short time. Farmers undergo a one-year program involving

workshops in whole-farm management, alternative enterprises, resource management, financial and risk management, local marketing, farm loans and USDA services. The target audience is limited-resource, small, and socially disadvantaged farmers, Hispanic farm workers, and refugees in Kentucky. Agricultural products to be considered include fresh vegetables, chickens and egg, meat goats and value-added, processed foods.

Swine

Producer Consultation Activities

Richard Coffey

Due to the enormous variety in the makeup of different operations, personal consultations are an integral component of the swine Extension program. Pork producers, agents, and support industry personnel require personal contact with an individual who has the technical expertise and resources to assist them in the decision-making and problem-solving process, particularly where a large investment is required. Personal consultations are used to address all areas of pork production, including production flow, production efficiency, management, nutrition, reproduction, health and disease, environmental sustainability, marketing, pork quality, facility construction or remodeling, and trouble-shooting.

On-Farm Applied Research/Demonstration Activities

Richard Coffey

Applied research and demonstration activities focus on issues of critical importance to swine production. Areas of interest include manure and nutrient management, feeding and nutritional strategies, production and housing systems, and reproductive management. Current and past projects include:

- Evaluation of the effectiveness of liquid-solid separation of swine manure in removing manure nutrients.
- Evaluation of composting separated manure solids to generate a nutrient dense fertilizer and soil amendment.
- Evaluation of a “high-rise” swine finishing barn to determine the effectiveness of composting swine manure within the production facility.
- Development of an automated bio-fermentation reactor to enhance microbial activity and reduce odors in lagoons.
- Evaluation of high pressuring cooling as means of reducing heat stress in swine.
- Development of management techniques for swine housed in large groups.
- Evaluation of an auto-sort scale for use with swine housed in large groups.
- Developing farm specific feeding strategies for swine.

Producer Cooperative Activities

Richard Coffey

The dynamic changes that have occurred over the past decade in the swine industry have led to many changes for producers. In an effort to remain sustainable and economically viable many producers have joined with others to form various producer cooperatives. Activities of these cooperatives have typically included group purchasing of inputs (i.e. feed ingredients,

equipment, pharmaceutical supplies, etc.), group marketing of animals, and the sharing of ideas and production practices. More recently, these types of cooperatives have looked at ways to retain ownership of their pork products further up the consumer chain. Educational programs pertaining to nutritional strategies, breeding herd management, marketing alternatives, herd health, production systems, manure and nutrient management, and other vital topics have been and continue to be developed for these groups.

Pork Quality Assurance (PQA) Plus Program

Richard Coffey

Consumers are increasingly demanding that the foods they consume be safe and free of harmful drug residues, and that livestock caretakers provide the best possible care for their animals. The PQA Plus Program has three significant components that helps producers demonstrate their commitment to providing the highest quality, safest product possible while caring for animal well-being.

The first component is an educational program that details 10 “Good Production Practices” which producers can implement on their farm to produce safe and wholesome pork and provide the best possible care possible for their animals. The 10 “Good Production Practices” covered in this educational program include:

- Establish and Implement an Efficient and Effective Herd Health Management Plan
- Use an Appropriate Veterinarian/Client/Patient Relationship [VCPR] as the Basis for Medication Decision-Making
- Use Antibiotics Responsibly
- Identify and Track All Treated Animals
- Maintain Medication and Treatment Records
- Properly Store, Label, and Account for All Drug Products and Medicated Feeds
- Educate All Animal Caretakers on Proper Administration Techniques, Needle-Use Procedures, Observance of Withdrawal Times and Methods to Avoid Marketing Adulterated Products for Human Food
- Follow Appropriate On-Farm Feed and Commercial Feed Processor Procedures
- Develop, Implement and Document an Animal Caretaker Training Program
- Provide Proper Swine Care to Improve Swine Well-Being

The second component of the PQA Plus Program involves voluntary, on-farm educational site assessment (conducted by a trained PQA Plus Advisor) to objectively assess the well-being of a producer’s pigs. The voluntary site assessment involves an evaluation of both animals and facilities. The third component of the PQA Plus Program involves an independent audit by a third party auditor (PAACO certified) to assure consumers of compliance.

Youth Swine Activities

Richard Coffey and Jason P’Pool (in cooperation with Kentucky Pork Producers Association and Kentucky Department of Agriculture)

Youth swine activities are an important component of the swine Extension program. Activities of active involvement include Livestock Judging Clinics and Contests, Swine On-Foot and Carcass Shows, and Youth Agriculture Field Days. Educational programs are developed and presented on various aspects of pork and livestock production, as well as various careers

that are available in animal agriculture. Various educational resources are developed for use by agents and volunteer leaders working with youth in their counties.

Publications: The following publications are available electronically at www.ca.uky.edu:

ASC-158	Assessing Sow Body Condition
ASC-153	Boar Selection - Using Expected Progeny Differences (EPDs)
ASC-152	Manipulation of the Estrous Cycle in Swine
ASC-149	Feeding and Managing the Weanling Pig
ASC-148	Management of Swine Mating
ASC-147	Feeding Growing-Finishing Pigs to Maximize Lean Growth Rate
ID-148	Sampling Animal Manure
IP-56	Assessment of the Potential for Livestock and Poultry Manure to Provide the Nutrients Removed by Crops and Forages in Kentucky
IP-57	Potential for Livestock and Poultry Manure to Provide the Nutrients Removed by Crops and Forages in Kentucky

Youth

Youth Livestock Projects

Richard Coffey and Jason P'Pool

Youth livestock projects provide youth with opportunities to expand their knowledge of livestock production and, more importantly, develop the life skills that are needed to be positive contributors to society. Through these projects youth will learn about selection and evaluation, nutrition and feeding, health and daily care, reproduction, marketing, and much more. Youth learn to accept responsibility, to value hard work, think critically, make decisions, and communicate. In addition, there are several livestock shows that youth can participate in to put on exhibition their animal project. Livestock shows provide a great avenue to meet and develop friendships with other youth and leaders from across the state. Young people are also able to connect with supportive adults (who serve as mentors), demonstrate a commitment to learning, develop social competencies and gain exposure to career opportunities.

For the meat animal species, livestock projects are available for beef cattle, goats, sheep, and swine. Within each species, youth can choose to participate in either (or both) market or breeding animal projects.

Youth Livestock Judging

Richard Coffey and Jason P'Pool

The livestock judging program is an important youth program offered in the Animal and Food Sciences area. While the program is primarily designed to teach youth the basics of visually evaluating livestock, the skills the youth develop by participating in Livestock Judging are ones they will use throughout their lives. The Livestock Judging Clinics and Livestock Judging Contests that make up this program provide youth with opportunities to learn to make decisions and to defend their reasoning for their decisions. The specific goals of this program

are to (1) teach youth the criteria to consider when evaluating different species of livestock, (2) instill in youth the confidence to objectively compare animals, (3) teach youth the proper method for giving an oral presentation of their reasoning for a class placing, and (4) develop in youth a high level of confidence in their ability to orally communicate the reasoning for their decisions.

Youth Livestock Skillathon

Richard Coffey and Jason P'Pool

The livestock skillathon program provides a valuable educational experience for youth. This program provides a framework for youth to learn a variety of topics related to the production and management of beef cattle, meat goats, sheep, and swine. Participants in this program will learn about different breeds of livestock, external parts of livestock, feedstuffs used in livestock diets, equipment used in raising and showing livestock and in processing meat, wholesale and retail cuts of meat derived from livestock, expected progeny differences (EPDs), quality assurance, common calculations used to measure animal performance and profitability, judging hay, judging meats, and judging performance classes of livestock.

Kentucky 4-H Livestock Volunteer Certification Program

Richard Coffey and Jason P'Pool (in coordination with the State 4-H Office)

The Kentucky 4-H Livestock Volunteer Certification (KLVC) program encapsulates into one collection the entire curriculum, projects, learning activities, and educational resources that collectively encompass the Kentucky 4-H Livestock program. The goals of the program include (1) ensuring that all youth and Volunteer Leaders have access to high quality, comprehensive materials, regardless of county resources, (2) ensuring a sound and well-rounded educational experience for youth enrolled in livestock and livestock-related projects, and (3) empowering Volunteer Leaders to successfully lead a club in a fun, interactive environment.

Resources developed for use with the program include a comprehensive curriculum with over 100 individual lesson plans (complete with learning objectives, learning activities, evaluation tools, and teaching resources for the project areas of swine, beef, sheep, goats, dairy, country hams, end products, livestock judging, livestock skillathons) and a resource kit (includes resource handbooks, 60 laminated breed posters, 35 laminated retail meat cut photos, laminated posters for each species' wholesale cuts, laminated posters for each species' external parts, laminated posters for each species' skeletal anatomy, two DVD's containing educational video programs on ethics and quality assurance, judging manuals, 20 sets of laminated feed tags, feed kit with 30 feed samples, laminated injection site posters for each species, Livestock Discovery CD, and much more). The Targeting Life Skills model was used in development of the lesson plans, and the KERA Competencies addressed in each lesson plan are identified.

Training workshops, each a length of 1-½ days, are conducted to demonstrate and describe the use of the curriculum and resource kit, to provide Volunteer Leaders with instruction on teaching methods that create a fun, interactive learning environment for youth, and to certify Volunteer Leaders in the KLVC program. To become a Certified Volunteer Leader, an individual must attend a KLVC Workshop and complete a teaching practicum. To remain a

Certified Volunteer Leader, individuals are recertified to complete at least two (2) hours of approved continuing education annually.

Youth Market Animal Project Validation Program

Richard Coffey and Jason P'Pool (in coordination with Kentucky Department of Agriculture)

With over 1,400 youth (both 4-H and FFA) participating annually in market animal projects, this program area is one of the largest offered by the Department of Animal and Food Sciences. To ensure the integrity of the market animal program, the Market Animal Validation Program was initiated in 2003. The goal of the program is to document ownership and youth participation by tagging all market steers, market lambs, market goats, and market swine with Kentucky Uniform Identification Program (K.U.I.P.) tags and taking hair and (or) wool samples from each tagged animal for DNA identification. All market steers, market lambs, market goats, and market swine that will be exhibited at Kentucky Department of Agriculture (KDA) shows and (or) the Kentucky State Fair must go through the validation process.

Approximately 30 validation sites (approximately 10 for market steers and approximately 20 for market lambs, market goats, and market swine) located at various locations across the state are held each year. Validations for market steers are held during the month of March, and those for market lambs, market goats, and market swine are held during the month of May. At each validation site, a validation form is filled out for each exhibitor, and their project market animals are tagged with K.U.I.P. tags and a tissue sample is collected for DNA analysis. The information from the validation form is compiled into an electronic database and is used at the various market animal shows to ensure proper ownership of market animals is maintained.

Youth Livestock Camps

Richard Coffey and Jason P'Pool (in cooperation with Kentucky Department of Agriculture, Murray State University, and Morehead State University)

These day-long camps are designed to provide education and hands-on training specific to a youth's individual livestock project species (beef cattle, dairy cattle, sheep, swine, and goats). Specific hands-on training included project animal selection, animal health, equipment and usage, exercise programs, Skillathon training, livestock hauling and bedding, nutrition, fitting and grooming, and showmanship. Youth bring their own project animals to the camp for use in the trainings offered in fitting and grooming and showmanship. Because camp participants range from beginners to those that are more advanced, for some presentations and trainings the camp participants are divided into groups based on their age and (or) level of competency so that training can be tailored to their needs and level of understanding. Participants receive a detailed resource manual that contains a variety of fact sheets and informational resources on the topics covered during the camp.

Youth Pork Quality Assurance (PQA) Plus Program

Richard Coffey and Jason P'Pool

The Youth PQA Plus Program demonstrates the dedication of youth pork producers and their Advisors to assuring consumers that they are purchasing pork that is safe, of high quality and produced in a responsible manner. This educational program outlines for youth 10 "Good Production Practices" they can implement to ensure their project pigs receive the best care

possible, and when harvested they provide safe and wholesome pork. The 10 “Good Production Practices” covered in this educational program include:

- Establish and Implement an Efficient and Effective Herd Health Management Plan
- Use an Appropriate Veterinarian/Client/Patient Relationship [VCPR] as the Basis for Medication Decision-Making
- Use Antibiotics Responsibly
- Identify and Track All Treated Animals
- Maintain Medication and Treatment Records
- Properly Store, Label, and Account for All Drug Products and Medicated Feeds
- Educate All Animal Caretakers on Proper Administration Techniques, Needle-Use Procedures, Observance of Withdrawal Times and Methods to Avoid Marketing Adulterated Products for Human Food
- Follow Appropriate On-Farm Feed and Commercial Feed Processor Procedures
- Develop, Implement and Document an Animal Caretaker Training Program
- Provide Proper Swine Care to Improve Swine Well-Being

Youth Livestock Judging/Oral Reasons Boot Camp

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The Youth Livestock Judging /Oral Reasons Boot Camp is a 1-½ day clinic (typically a Friday evening and Saturday) with a major focus on taking notes, preparing and presenting oral reasons. The Boot Camp is for Intermediate and Senior age 4-H and FFA members (basically those 12 and older), and for any interested livestock judging coaches, parents, leaders, Extension Agents, and Vo-Ag Teachers. The Boot Camp involves both classroom instruction and hands-on activities including judging classes, preparing and giving oral reasons, and review of classes after reasons have been given.