







Academic



Angus

Angus herds and genetics play an important role in teaching, research and beef production at universities across the country.

In part V of our series, we feature the beef programs of Ohio State University, University of Nebraska and Western Kentucky University.

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established in 1873 as the Ohio Agricultural and Mechanical College, the Buckeye State's land-grant university was located centrally in Columbus.

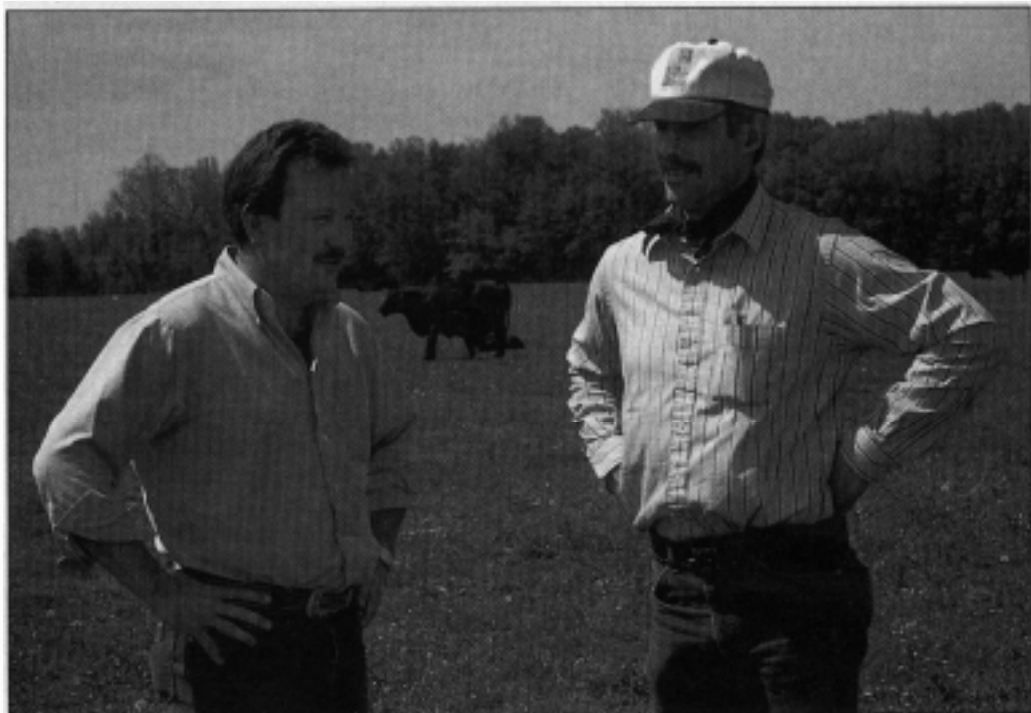
Known today as Ohio State University (OSU), the school has an impressive enrollment of 48,000 students, with 1,200 enrolled in the College of Food and Agricultural Environmental Sciences.

Although the OSU Angus herd doesn't date back to the opening of the school, it has been around for half a century. It bears the distinction of being named a historic herd by the American Angus Association, meaning the school has been registering cattle for more than 50 years.

In the January 1947 issue of the *Aberdeen Angus Journal*, D.J. Kays, head of the animal husbandry department, dates the purebred herd to the 1930s. In the article Kays writes about the University purchasing a purebred Angus bull in 1938 and another in 1942. He credited these two purebred Angus bulls, The Elite and The Duke, and two cows, Stroop's Queen Harrison, calved in 1929, and Ohio's Enchantress Lady, calved in 1937, as being the base of what he termed, "the right kind of Angus cattle."

During the 1950s into the 1980s the OSU herd gained in reputation with cattle like O. Bardolier Mere, a bull that became well-known for helping to curb dwarfism in the Angus breed and gained in prominence with the able guidance and help of people like Herman Purdy and George Wilson.

In recalling the history of the herd before he came to the University in 1985, Mike Day, coordinator of the OSU Beef Center, says he would have to credit George Wilson with



Angus are the backbone of the Ohio State University herd. Located in Columbus, the University herd is managed by Mike Day and George Hibbert.

building the base of the present Angus herd.

"I succeeded George Wilson as coordinator when he retired, and I know he supervised the development of all the purebred herds, but he especially made great strides in the Angus herd.

"I would have to say that the Angus breed has always been the backbone of the cattle program here at the University, even when we had six breeds of cattle when I first came to the University. After the decision was made to keep only one British breed and one continental breed, the herd was cut to Angus and Simmental cattle."

Day teaches beef production and heads research projects in cattle reproduction at the OSU Livestock Center near Dublin, about eight miles northwest of the main campus in Columbus.

Although the area is basically rural, heavy traffic from a nearby Interstate and shopping area often makes getting to the Center a challenge for students and faculty. Adding to the congestion is an airport just beyond the University's pasture

fences, however, the herds of cattle and sheep grazing there seem to take little notice of the steady procession of small planes and helicopters flying at low altitudes.

Coming to work at the University in 1991 as beef herd manager, George Hibbert is the only full-time employee at the Center. With the help of four students who work and live at the barns, he maintains the facility, which he describes as being a regular cow-calf operation.

"We try to run the Center as economically as possible," he explains. "We don't waste money, and the operation has to show a return, which is kind of unique in university herds. We are basically educational and a support system supplying cattle for the teaching, research and Extension service of the University."

For this purpose, the University maintains a herd of about 130 cows, including 50 registered Angus and Simmentals. The remainder are commercial crossbred cattle

using both breeds, with the first cross usually Angus/Simmental.

Beef production labs held at the Center utilize the cattle to teach students the basics of vaccination programs, show the different types and methods of worming, feed programs, freeze branding, tattooing and the cost of the various programs and the importance of knowing the overall management of cattle.

"All are part of the total education involved in learning about breeding and calving cattle," Hibbert explains. "Students learn the day-to-day practices, which are fairly simple and could be used anywhere in Ohio and surrounding states. Overall, it really is a great program."

In the research projects at the Center, reproduction studies have been an ongoing project for Day since the late 1980s. He feels many cattle breeders experience misconceptions about puberty.

"They aren't sure when it occurs, if the cattle are continuing to cycle right up to

the breeding season, and what it takes to get them pregnant," Day says. "Our work is to help breeders understand puberty and to assure them that it will occur early enough so animals are ready for the breeding season. Many breeders have trouble getting their animals pregnant at 14 months of age."

Heat synchronization, a problem experienced by many beef operations using artificial insemination (AI), is another part of the research project headed by Day. "We have got to be able to have some way to narrow the AI system down to a few days," he says. "For anyone who heat checks for 45 to 60 days, they usually are not as effective at the end of that time period as at the beginning. In our research, I feel we are at the edge of having efficient synchronization in the next couple of years that should get 60 percent of a herd bred in a couple of days."

The bottomline in the OSU breeding program is trying to breed predictability into the cattle. Close attention is paid to genetics by using expected progeny differences (EPDs) as a tool.

"We use bulls that come from operations that have a history of longevity and have stood the test of time," Hibbert explains. "We also use young unproven sires if we know the genetic history of their sire. The perfect EPDs we look for are birth weight of about +3.0 to +3.5. We don't worry about weaning weight, but like the milk in upper teens and yearling weight of +50 to +65. Good udder development and economic traits are also important, and we want frame scores aiming for 6 to 6.5 in both the Angus and Simmentals."

Females are usually bred by AI twice and then turned out with the cleanup bull, which is usually the top-indexing bull from the OSU herd. Semen is supplied by Wehrmann Angus from Virginia and Select Sires, located just 20 miles from the Center.

Calving season is twice a year, with the purebreds calving during November to February in the barns where they can be used as teaching labs.

Commercial cattle calve outdoors from March to May.

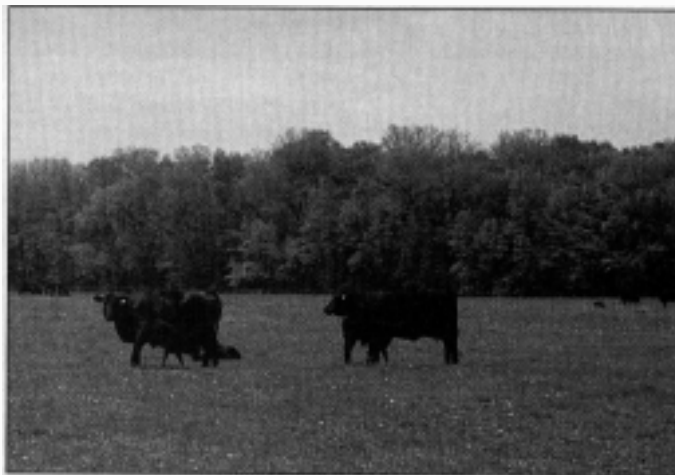
"We don't shoot for light birthweights, but we don't accept the higher birthweights and large frame," Day says. "Our Angus calves average about 80 pounds, and the Simmental calves about 90 pounds, but it's not unheard of to have a calf down in the 70 pound range or up around 100 pounds. Naturally our crosses are sometimes larger than those average weights. We call our cattle wide bodies. To me, femininity is a big belly and wide pelvis."

Forty to 50 replacement heifers are always kept for use in research, with the remainder being fed-out at the Center and slaughtered in Columbus. In May, 18 commercial heifers were slaughtered, with an average weight of 1,060 pounds and ribeye of 10.5 to 11 inches.

"We try to prove our own purebred bulls," Hibbert says. "For those that don't meet our expectations, we steer them along with the bulls from the commercial herd. All of our steers are sent to a feedlot in Wooster and slaughtered, giving us important feedback of valuable carcass information. The goal behind our program is to wean a calf, put it on feed and have it hit the Choice grade at 12 to 13 months."

Eighty to 85 calves were sent to the Wooster feedlot this past year, of this group most graded Choice and a couple Prime. Hibbert says the average ribeye measurement was 12 to 13 inches.

For those cattle fed-out at the OSU Beef Center, the feed ration consists of 12 percent protein, hay, corn and soybeans with spent grain obtained from a beer brewery in Columbus making up about a fifth of the ration. Minerals are also an important part of the ration, which Hibbert says are often lacking in many other programs.



Breeding predictability into cattle is the goal of Ohio State University. The staff uses expected progeny differences (EPDs) as a selection and culling tool.

Since alfalfa is used as a protein source, it and other varieties of hay are the only crops grown on the 400-acre farm. The fields are fertilized intensely to get top production, and everything is double-cropped by grazing the cattle after the hay is cut. Pasture rotation is done by putting 50 head of purebred cattle on 50 acres of grass and moving them every day.

"We really have only about 300 acres that are usable since some of our land is woods," Hibbert says. "We also have about 100 acres of our summer hay on the airport. When I first came to the University, silage was used, but it wasn't long before we went to all grass because it's the simplest method. We have new equipment and I can bale 150 bales a day by myself. We do a total of 1,200 bales in a year, both round and square bales."

In addition to the good haying equipment kept by the Center, Hibbert credits other modern tools like the computer for being a tremendous help in the management of the herd. "So much information from the American Angus Association and other programs available to breeders is a tremendous help," he remarks. "This was unheard of when I started in the cow business. We also use ultrasound to measure ribeyes, backfat and marbling on the bulls. In reproduction work we use it to

pregnancy check females at 30 days and sex them at 60 days."

Most seedstock from the herd is sold through two state sales and some of the purebred bulls are sold by private treaty. Most of the heifers are kept as replacements.

"We actually do very little to advertise our cattle," Hibbert says. "We don't want to compete with the people who are trying to make a living breeding beef cattle. Our main function is to educate the students, advise those who are already in the business and try to be an asset generally to the beef industry."

Have breeding goals for the University been realized after 60 years in the cattle business? "I don't think anybody has hit the perfect animal yet," Day says. "Our breeding program would probably be described as conservative by some since we use only proven bulls and stack the pedigrees to build uniformity. The type of cattle we are raising is not perfect, but it's what we are looking for in the type of program we are running. On a grass program, you have to match the right type of cattle to the program, and if we are making money they must be right."

"We will keep trying to be as visionary as possible, look for the market and target toward the future."

-Janet Mayer

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he University of Nebraska is not only home to a sensational "Big Red" football team, but also a high-quality Angus herd. Situated on the great plains in

Lincoln, the University of Nebraska-Lincoln (UNL) has long been a member of the American Angus Association.

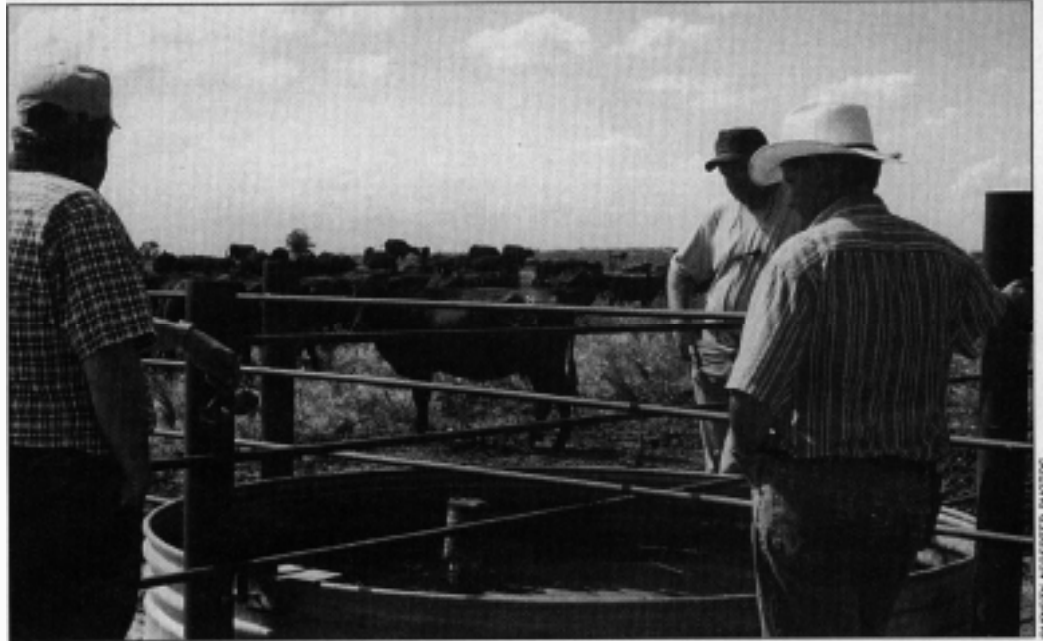
The UNL was founded in 1869 as a land-grant university. The College of Agriculture came into existence three years later in 1872. And 1903, UNL became a member of the American Angus Association.

Currently, the University has an enrollment of 17,600 students — 1,500 of which are students in the College of Agricultural Sciences and Natural Resources (CASNR). The animal science department with 228 students has the largest enrollment within CASNR.

Livestock courses have been taught at the University since 1896, two years before the animal husbandry department was established. In 1964 the animal husbandry department was renamed the animal science department because of the change of emphasis from livestock production to sciences in course curriculums.

The animal science department is housed in a state-of-the-art facility built in 1986. The \$19 million complex houses classrooms, a full-size arena with seating, numerous livestock working facilities, student living quarters and a complete meat processing unit and laboratory.

Not only does the University have this wonderful facility, but it also has a 9,000-acre farm located 30 miles north of Lincoln near Mead, Neb. Every department within CASNR has acreage on the farm at its



Carl Moline cow-calf manager left, Bob Browleit, research technician, and Jim Gosey admire and discuss this year's successful calf crop.

disposal. Students and faculty are able to perform different types of research on the farm that they cannot do in the classroom or the lab.

The farm includes a 150-æ head feedlot dairy, swine and sheep units, a feed mill and a host of other facilities to be used by the departments. This area of land was once used as an ammunition storage facility during World War II. Approximately 200 of the actual bunkers still exist on the three by four mile area of land. The University aquired possession of the property in 1965.

Two groups of cattle graze on the more than 2,200 acres of dryland pastures. One is the research herd, which is made up of Red Angus and Gelbvieh crossbred cattle and the other is the teaching herd, which is black Angus and crossbred.

Veterinary science also has their own herd at the facility. These cattle are bred to produce disease-free calves used for veterinary science research and are housed and taken care of separately from the teaching and research herds.

The teaching herd is used throughout the year in the classroom. The livestock judging team also uses it for many of their workout sessions during the year. Young heifers and bulls are used each year for the state FFA livestock judging contest.

"It's easier to move the livestock than it is to move the students. There are just too many students," says Jim Gosey, professor of animal science.

The University has not had an active show herd since the late 1940s. Taking cattle into the show ring is not a necessary step in the Angus program at UNL, according to Gosey. "I like to tell people that we show our cattle any day of the year to anyone who drives on the place," he explains.

The University of Nebraska is said to have been breeding Angus cattle since the turn of the century. The foundation of the present Angus cow herd was established after World War I with the purchase of cattle from a Nebraska breeder. The herd has grown to about 80 head of purebred Angus cows. Among

the herd is four cows that have been recognized as Pathfinders by the American Angus Association.

"We have not sold any females or cow-calf pairs for the last nine years. We are trying to build up a foundation of young females. There have also been no females purchased since the 1920s," Gosey says.

There are three full-time employees who take care of the day-to-day management of the cow herd. Gosey is in charge of the breeding program.

"We try and use three major bulls in each calf crop. We try to use these bulls two to three consecutive years," Gosey explains.

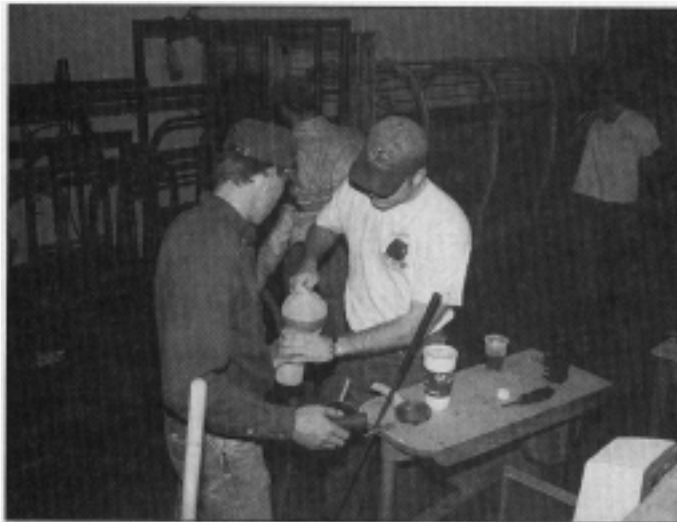
This year's Angus calf crop was sired by RR Regal 1459, SAF Fame and GAR Traveler 1489, and two sons of N Bar Emulation EXT were used as clean-up bulls. The University also uses embryo transfer (ET) as a management tool. Each year the University places at least 12 embryos.

UNL tries to calve all cows in the spring. Usually, calving begins in early March and goes

through the month of April. The University staff likes to begin the breeding season around the first of June. Cows are artificially inseminated (AI) for about 30 days and then they are natural serviced for 25 to 30 days. AI is used on 85 to 90 percent of the Angus cows. Like many purebred breeders, the University is very strict about culling all open cows.

Gosey also teaches the cow-calf management class and beef cattle merchandising class. The beef cattle merchandising class has been offered for the last four years. The purpose of the class is to give students the opportunity to learn more about beef cattle seedstock merchandising. The students are responsible for all aspects of planning for a bull sale. Some of which include advertising, photographs, data collection and preparation, design and layout of the catalog, pen setup, food arrangements and all of the work on the day of the sale.

"A successful day for us is not



Beef cattle merchandising students prepare bulls for the University of Nebraska bull sale.

based on the sale average, but on the longer term gain from the growth that takes place in our students," Gosey said. "It helps the students realize that there is more than one right way to run a livestock sale."

The beef cattle merchandising class uses a silent auction to sell bulls. This method is used rather than a typical sale, not for

financial purposes, but rather to force students to think of every possible way to merchandise cattle.

When selecting cattle for the sale, expected progeny differences (EPDs) are heavily relied upon to select bulls that will accommodate a typical breeder's herd.

"Our selection goal remains

moderate-size, optimum-milk fertile, functional cows that calve unassisted as heifers and raise growthy calves that ultimately produce lean and tasty beef at a profit," Gosey says. "National Cattle Evaluation Programs/National Sire Evaluation Programs are at the heart of our efforts to identify sires who have documented performance, not just great potential. In a relatively small Angus herd such as ours, we can't afford many errors so we rely on older, proven bulls and sample younger bulls very sparingly."

The beef cattle merchandising class has been extremely successful with their sales. This year the 30 young bulls consigned averaged \$2,126. In the past, with the private treaty sales, they would have only sold five to 10 bulls.

From the turn of the century to the present, the University of Nebraska is striving to produce functional cattle and quality "Big Red Beef."

— Christy Aegerter



Champion
Angus steer

1924 International
Livestock
Exposition —
Chicago

College Kenyon 1st
sired by
Kenyon 3rd

At 15 months
weighed
1,050 pounds

Exhibited by
Univeristy of
Nebraska

Teaching with a hands on approach, Western Kentucky University faculty use Angus cattle as an instructional tool. Also known as Western or WKU, the four-year

university was founded in 1875 and is located in Bowling Green.

The Western Kentucky University Farm, located just five miles from campus on a 783 acre spread, has been in production for 60 years. Western manages 116 cows, including 86 purebred Angus and 24 replacement heifers.

Although the beef cattle are the major focus of Western's farm, they also raise corn, silage, soybeans, alfalfa, summer annuals and share the land with equine, dairy and swine units. Western is a non-land grant university, therefore, the cattle are used for production and profit as well as to provide students with practical, management experience.

"Research conducted here is applied or what we term practical research. We usually don't do anything to affect normal production," says Brian Bolt, farm manager. "Primarily the Angus herd is a teaching herd and secondly it's a revenue producing unit that attempts to be a demonstration for the community."

Western became a member of the American Angus Association in February 1970, this was the year Gordon Jones joined the faculty at Western. Jones is a professor of animal science and has assisted with the Western farm for many years.

The Angus herd was established prior to 1970 with the French Broad Angus herd as foundation females. Originally located on the French Broad River near Newport, Tenn., the French Broad Farm moved to Bowling Green after the



Students attending Western Kentucky University, Bowling Green, benefit from working with the University's Angus herd. Students enrolled in the livestock management class visit the farm every Thursday gaining practical beef cattle management experiences, Supervising the students are staff members (l to r): Brian Bolt, farm manager nevil Speer, assistant professor, and Curtis Mitchell, assistant farm manager.

Tennessee Valley Authority (TVA) development. The French Broad Farm was owned by Dr. J. D. Huggins and his son, Dorman. The Huggins family showed cattle extensively and were well-known breeders in the 1930s, '40s and '50s.

When Jones started at Western, the University was leasing the pastureland the French Broad Angus herd grazed. Western was paying \$10,000 a year plus giving 45 percent of the gross returns to Huggins and in return Western was only getting 45 percent of the returns with 10 percent going into a scholarship fund.

In the Fall of 1971, the Angus herd was dispersed to divide the partnership and ceased the production agreement between Western and Huggins

Foundation females of the present herd were purchased in the Spring of 1972. Joe Bill Meng and Jones traveled to Texas, Oklahoma and Kansas and purchased new bloodlines

for the University herd.

Jones too had a small herd of the same genetically based cows. When he dispersed his herd in 1974, the University acquired five head. These animals were the last females introduced into Western's herd.

The original farm was located on campus. The on-campus location was maintained until the late 1950s even though the cattle had been moved to the current farm. The original breeding program was developed as a Hereford operation. They converted to Angus in 1968.

The University farm is an excellent tool for recruiting new students, this fall Western will have the largest agriculture freshman class ever. Students enjoy attending a university that is active both in the classroom and out.

"Just having a farm and livestock is very important. We have more and more students

who have a non-farm background, therefore, the University farm has an increasingly important role," says Jones.

The University plans to expand it's beef herd to 250 head. A new beef teaching center barn is in the plans to be built for use as a multiple purpose building. The Angus cattle are used for WKU Block and Bridle Club's Little North American. Block and Bridle at Western was established in 1977, the same year of their first Little North American. The event is held the first Saturday in April. Throughout the week different events take place. Students break, feed and take care of the animals until show time.

Western has used artificial insemination (AI) since the new herd was established in 1972. With AI they run two calving seasons, spring and fall. The herd starts calving March 1 and Sept. 1. Western has not

implemented an embryo transfer (ET) program, although, it's an area that is being investigated.

Using synchronization programs, they've decreased their calving season from a 120 to 45 days each. Bolt would like to see the number of days calving decrease even more.

"Forty-five days is a workable goal but we'd like to think we could get it done in 30 days," says Bolt.

The University gives females one cycle of AI, then they have 23 days before turning the bull in. After only a year as farm manager, Bolt has done a lot of sorting and culling. He has allowed every cow one chance to prove herself before culling. Bolt has also moved from a multiple sire group down to three bulls.

Students do a majority of the work on Western's farm.

Twenty-four students work on the farm, with six strictly at the beef unit. Ideally, students would start on the farm as freshmen then by the time they were seniors, they would be supervising at the unit. This gives students experience not only on the farm, but also with different degrees of responsibility and management.

Four students live in houses provided on the farm. They take care of the feeding, heat detecting, checking, calving and are starting to do some of the AI breeding if they are certified.

"I like to keep a supervisor's role, I want them to learn," says Bolt.

Western has been reporting performance data to the Angus Herd Improvement Records (AHIR) ever since the herd was established in 1972. They also use the Angus Herd Management Systems (AHMS) software program.

When marketing animals, Western explores different avenues. Each year the University keeps eight to 10



Western, like most other Kentucky farms, is a forage-based operation. The University manages its cow herd on fescue supplementing them as economic conditions dictate. Ideally Bolt would like to have a 365-day grazing season.

bulls and sells them to local producers. They also market a few purebred cows and heifers private treaty.

This year to demonstrate to students other possibilities, such as retaining ownership, Western shipped 41 of their fall calves to Kansas to be finished. Bolt believes in taking a pro-active approach to marketing.

"We were looking for some alternative marketing options for our cattle other than just the local sale barn. Retaining ownership seems to be a role we'd like to fulfill," Bolt says. Previously they had finished out just a few steers on corn every

year for classroom and judging team purposes.

Bolt would also like to enter some bulls in a bull test station. They are considering entering a few heifers in the Kentucky Sweepstakes, a show and sale held in Louisville.

Western will soon offer its first livestock marketing class. Students will have the opportunity to learn about marketing while planning a production sale. The first sale is planned for fall of 1998 or the spring of 1999 and will feature both commercial and purebred cows.

In the future Western plans to expand its involvement in the beef industry, including more applied research projects for undergraduates and offer even more work experience opportunities and lab applications.

Currently, the hands-on opportunities students have are as simple as learning how to move cattle, put cattle through a chute and give vaccinations. After learning the basic cattle management skills, students then begin to learn more advanced practices such as calving and reproduction.

As the University continues to retain ownership and evaluate carcass data, the feedback will be used in refining the genetics and management of the herd. As the herd progresses and continues to grow, Bolt wants Western to become known as a resource center for beef cattle, especially in the Southeast. Western may not promote Angus cattle to the students directly, but they do promote Angus through the student's on-farm experience.

— Suzanne Berry



University Enrollment — 16,000 students
College of Agriculture — 400 students
Animal science majors — 225 students

