Extension Effort in Beef Cattle Breeding & Selection

The beef cattle industry faces challenges that include, but are not limited to, increasing competition from other meats, product variability, and rising costs associated with production. These problems, however, do have a genetic basis. Genetic change is more difficult to achieve in the beef cattle industry than in the corn or poultry industries. In the latter industries, mating decisions are controlled by companies. In the beef cattle industry, each producer is directly involved in genetic decisions, such as sire selection, mating system, and culling practices.

How important is genetics to the beef cattle industry? It is the animal's genetic makeup that determines its potential for feed efficiency, product quality and acceptability, longevity, disease resistance, fertility, calving difficulty, etc. The environment including that created by management practices in which the animal is raised determines how much of its genetic potential is realized. Therefore, it is important for each producer to become aware of methods and opportunities to affect change and the direction in which change should occur to improve efficiency and/or product desirability.

West Virginia University Extension Service, in cooperation with other private and public agencies, offers several programs to beef producers that can help them make better and more informed management and genetic decisions. These are the West Virginia Bull Evaluation Program (Wardensville and Southern Tests), the West Virginia Feedlot and Product Information Program, and other ongoing performance testing and educational programs.

Until recently, the only way to evaluate the end product was to kill an animal, take the hide off, and rib the carcass. USDA graders routinely evaluate carcasses for both quality and yield in this fashion. This procedure creates several problems for an individual who desires to make genetic change. First, when an animal is killed, its genetics are eliminated from the population. Second, USDA graders have been hired by packers to help them package the product for merchandising and carcass evaluation information typically has not been fed back to others involved in the production process (primarily the cattle feeder and the cow-calf producer). Additionally, cow-calf producers historically have sold calves to cattle feeders/back grounders and frequently do not know where these cattle are being fed. Usually, they have not even cared. The sad truth is that once cow-calf producers sell their calves, they seldom take interest in how those cattle perform for the cattle feeder or whether they produce a product of acceptable quality and yield. Unfortunately, most producers assume they produce good beef even though they have no basis for reaching that conclusion.

The West Virginia Feedlot and Product Information Program provides producers an opportunity to retain ownership of a few cattle, feed them to slaughter weight in a commercial feed yard, and collect carcass data on those cattle. Data collected includes USDA quality and yield grades, rib eye area, carcass weight, marbling, and fat thickness. Producers who gather this information can better determine if their cattle can meet the industry targets for quality, yield grade, and portion size. However, because cattle from several producers are mixed in this program, feed conversion information is of little value to individual producers. In an alliance with Southern
States, Inc., the West Virginia Cattlemen's Association, and WVU Extension Service, four breeding programs will be able to evaluate their herd's genetic merit for feed conversion this year in a feedlot in Lexington, Illinois. Although individual feed efficiency information cannot be gathered, producers can assess the average merit of their herds, because each producer's cattle will be fed in a separate pen. Some may describe this as baseline information.

More recently, the beef cattle industry has begun to use ultrasound technology to evaluate fat thickness, rib eye area, and intramuscular fat in live animals. Ultrasound equipment is expensive, and measuring live animals is both time-consuming and less than perfectly accurate. However, it does offer an opportunity to collect information for use in genetic decision making at the producer level. Ultrasound information is being collected in both bull evaluation programs. The WVU Extension Service, in cooperation with the Animal and Veterinary Science Division at WVU and the West Virginia Cattlemen's Association, has trained and equipped Jim Pritchard, Pocahontas County WVU Extension agent, to collect ultrasound images on beef cattle. Training in this area is a continual process and will require annual retraining and evaluation to ensure accuracy. Although Jim will not be available to collect ultrasound images for all producers, the technology will be available to those seedstock producers who are willing to pay for the service.

Since most producers have a limited understanding of animal breeding and genetic principles, education is a continual and challenging process. For producers desiring to produce the best they can, opportunities do exist, through WVU Extension Service programs such as those previously defined, plus educational meetings and tours are available to assist them. In addition, other programs offered by breed associations and the National Cattlemen's Beef Association can be useful. The beef industry has been slow to adopt value-based marketing, but the amount of beef merchandised on the basis of value has increased and this trend should continue.