

Meeting Consumer's Needs

Cattle Feeders Learn About Managing For A Satisfactory End Product

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NEW HOLLAND (Lancaster Co.) — A recent Beef Quality Symposium is one of a series of educational meetings that are part of Pennsylvania's Blueprint For Success program.

Conducted at Yoder's Restaurant, New Holland, the event drew about 50 attendees and addressed beef quality issues such as tenderness and palatability, besides producer topics such as implants and dark cutters.

Dr. Edward Mills, associate professor in the dairy and animal science department at Penn State, opened the day by addressing factors affecting beef palatability.

Beef, which is on 97 percent of menus in America, is served more than seven million times a year in restaurants — 56 percent of entrees ordered, he said.

"What is the main driving force for that choice?" asked Mills. "People buy beef products because they like the taste of beef, and that's what we have to focus on, to keep our eye on that goal throughout the production process."

The palatability of cooked beef is determined by flavor, juiciness,

and tenderness — each separate and very different components. "We have different opportunities to influence those with feeding, handling, and genetics," he said.

Factors that influence tenderness are the protein components of the muscle, the fat component, and the amount of connective tissue, which surrounds every muscle fiber. Tenderness can be measured by the Warner-Bratzler Shear Force test, which measures the force needed to shear through the meat, and Texture Profile Analysis, which crushes the sample.

In addition, pH has an effect on tenderness. Living muscles have a pH of about seven. This number will drop to below six, which is important in determining the characteristics of the meat.

"By day 10, most of the tenderization has already occurred," he said.

Dark cutters have a high pH — above six — which actually increases the meat's water-holding capacity.

"The challenging in marketing live animals is communicating the things that have been done," such as genetic selection for tenderness, he said. "You want to

get paid for all that."

Dr. Robbi Pritchard, department of Animal and Range Sciences, South Dakota State University, addressed influences on marbling.

"Marbling is a tricky deal," he said. "You can't see it happen."

Pritchard highlighted energy demands in cattle. For instance, an animal's priorities for the energy they have consumed is bone, then muscle, then fat. "When they are born, a bull calf is four percent body fat," he said. "When a steer grades Choice, it is 28 percent body fat."

With this in mind, he addressed proper timing and use of implants.

"Implanting cranks up frame size. That means they're bigger when you get done, but it also means more groceries while they are growing," he said. A producer will have to "feed harder for fat deposition."

It is not that larger-framed animals may be genetically unable to marble — "it may be because there is not enough time to get up to target fat content," he said. "We need to change the energy level of the diets for the bigger-framed and implanted cattle."

Genetics are a set point in



Speakers at a recent Beef Quality Assurance Symposium included, from left, Dr. John Scanga, Colorado State University; Dr. Edward Mills, Penn State; Dr. John Comerford, Penn State; and Dr. Robbi Pritchard, South Dakota State University.

marbling. "We can't enhance it, all we can do it screw it up," he said.

Over implanting "will make them grow faster but will create an even bigger disparity between the lean gain potential and what they actually get" at the feed-bunk, he said.

Marbling is not put on simply at the end of the time in the feedlot, noted Pritchard. "Things start happening early." After conducting his own research, he "realized that the difference in marbling happened on the front end. This told me that the difference in quality gained happened in the first two months on feed rather than the last two months on feed. Marbling starts much earlier than is generally recognized."

To test his ideas, Pritchard split his fall feeder calves in three groups. He didn't implant one group, implanted one group right away, and waited until February to implant the last group. "If we waited and let marbling get into the cattle, we got ride of the downside" (lowered marbling expression) of implanting.

One key to marbling is to match caloric intake with genetics. "it isn't just caloric intake, it's caloric intake for this animal," he said.

Implants need to be matched with cattle and calories. "Find combinations that work. Maximize caloric intake on the finishing diet before they get that big implant."

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