

New DNA Test Tells If An Animal Will Yield Tough Or Tender Beef

WOOSTER, Ohio — Order filet mignon, prime rib or even a strip steak at a restaurant and the waiter or waitress predictably asks, "How is your steak?"

Unfortunately for the beef industry, the answer may vary from tender to tough. But that's about to change.

Two scientists at the Ohio Agricultural Research and Development Center have found a genetic marker for potential tenderness in beef cattle. The technology may hold the key to elimination of most tough beef from the marketplace within 10 years — as long as animals with this potential are managed correctly. The researchers must now study the heritability of the marker genes.

Francis Fluharty, feedlot nutritionist, and Daral Jackwood, molecular biologist, have developed a DNA test to determine genetic potential of beef cattle. With funding from the Certified Angus Beef Program, Fluharty and Jackwood have designed a method that identifies tenderness and marbling potential of cattle and aims to prevent variations in the quality of beef products. After four years of studies, the test has proven to be more than 99 percent accurate. A U.S. patent application has been filed to protect their find.

"Quality differences in beef can't always be corrected with dietary adjustments," Fluharty said. "Some cattle simply have the potential to produce high-quality, tender beef and others do not."

The new test will determine a beef animal's potential for high marbling or very little marbling

at an estimated cost of less than \$10 per head — and it may save producers \$40-\$50 per head in feed costs.

For example, total feed and yardage costs can amount to \$1.85 per head per day, or \$43.50 per month. If cattle don't hit their target weight in a set amount of time, money spent to feed the animal is wasted. The DNA test will help producers prevent this from happening.

"Producers will be able to collect a blood sample when convenient — at birth, branding or weaning — and mail it to the laboratory for sorting," Fluharty said. "The test results will provide information necessary to pen and feed calves according to their known carcass potential."

Many beef producers cannot get carcass information on their cattle, Fluharty said.

Ultrasound can forecast the future, but it can't go back to the calf and predict marbling and tenderness potential. With this technology, beef producers will be able to manage cattle in outcome groups — according to their potential for tenderness, marbling and growth.

"If a bull had all the indications of potential for both tenderness and marbling ability, he would be worth more than bull with only some of that potential," Fluharty said. "Widespread use of this technology could eliminate non-tender genetics over a 10-year period, because no registered breeder would sell cattle that flunk the test for tenderness potential."

The researchers will conduct additional field trials over the

next one to two years with support from the American Angus Association and the Certified Angus Beef Program. Soon after, the technology should be available to beef producers everywhere.

"We recognize there is still a lot of research to be done," said Jim Riemann, executive director of the Certified Angus Beef Program, "but we're excited about the potential for applying this new DNA technology. Consumers want high-quality products and are willing to pay for them. The technology should help with identification of beef that meets CAB standards. Currently the demand is greater than the supply."

The next step for researchers is to predict the heritability of DNA-marker traits.

Ron Bolze, director of progeny tests for carcass merit at the CAB Program, will assist Ohio State researchers with field trial coordination.

Fluharty said because OARDC is part of Ohio State, the university will own the rights to the patent on carcass-predicting technology, and the Certified Angus Beef Program plans to license the test.

"This technology will result in huge changes," Fluharty said. "We won't be in a commodity industry any more. A commercially available test for tenderness and marbling potential would have profound effects across the beef cattle industry. For the first time, producers would be able to market animals that would consistently meet consumer satisfaction."

And consumers would have

the luxury of stopping at the meat case and choosing any cut

of beef — knowing that it's tender, juicy, and delicious.

Grazing Meeting, Pasture Walk May 31

SHIPPENVILLE (Clarion Co.) — The Clarion County Extension Office announces a grazing meeting and pasture walk Wednesday, May 31 at 7 p.m. at the Larry and Angel Stone farm located near Rimersburg.

The Stones have no-tilled some cropland and pastures in the past two years, as well as adding more fencing to their operation to accommodate a rotational pasture system for the mixed dairy herd. They graze the cattle on a pasture system of mixed grasses and legumes. The Stones are planning on adding more pastures to their rotational system as time permits.

The meeting will also include information on a pasture research project that the Stones will be cooperating in with Penn

State on dry matter intake and pasture growth.

The public is invited to join the Stones on May 31 as they show the improvements they have made to the farm to improve pasture quality. The farm is located near Rimersburg. Take Rt. 68 west from Rimersburg to the New Athens Church. Turn right onto S.R. 3004 and go approximately 3.6 miles through Kissinger Mills to the Stones' farm. Signs will be posted. This event will be held rain or shine, so prepare for inclement weather if necessary.

For more information, contact the Clarion County extension office, phone (814) 782-0033, or e-mail CLARIONEXT@PSU.EDU.



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