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## 21<sup>ST</sup> CENTURY GENETICS: RISING TO THE CHALLENGE SOUTHERN STYLE

# Emerging Technology

by Troy Smith

**Incorporating validated gene marker technology with phenotypic information to calculate EPDs will require submission of all test results to respective breed associations.**

CHOCTAW, MISS. (April 20, 2006) — Discussion during the Emerging Technologies Committee meeting at the 38th annual Beef Improvement Federation (BIF) conference focused on validation of commercial gene marker tests. Features included a report by National Beef Cattle Evaluation Consortium (NBCEC) representative and Cornell University geneticist Dick Quass. Representatives of Igenity and Bovigen also discussed future genomic technologies under development.

Quass explained the NBCEC role in performing independent validation of DNA tests for the presence of genes related to beef tenderness or marbling. He noted success in replicating the original results, particularly for specific tenderness marker tests.

Quass said that while the validated tests for tenderness are effective, there presently is little economic return to producers. And while there is potential for huge economic return from quality and yield grade tests, those procedures appear to be only modestly effective.

It was reported that NBCEC favors incorporating successfully validated gene marker technology, with phenotypic information, for calculation of national EPDs. However, that will require submission of all test results to breeders' respective breed associations for central database entry.

More information on the consortium's validation process and a list of tests that have been validated is available on the organization's Web site at [www.nbcec.org/nbcec](http://www.nbcec.org/nbcec).

### Company view

Genomic test marketers predicted that a national animal identification system will enable application of the technologies to add value to cattle, as a result of beef product enhancement. They also expect greater use among commercial producers for parentage identification and development of in-herd EPDs.

Costs of specific tests have come down, but return on producer investment is expected as consumer demand creates market premiums for tenderness as well as quality and yield grade.

Assuming marker-assisted selection can be incorporated in an EPD format, purebred breeders should gain the ability to "fix" favorable genes in their cattle populations while eliminating less desirable genes, confirm parentage on all registered animals and execute breeding plans to achieve a desired genetic profile.

In commercial cow-calf herds and feedlots, new and enhanced tests for gene markers should allow commercial producers and feedlot managers to sort animals of different genetic profiles into management groups for targeted markets. 