

Changes to Evaluation System (May 2007)

[All-breed animal model](#) || [Genetic trend for daughter pregnancy rate](#) || [Genetic trends for calving ease and stillbirth](#) || [Revisions to herd variance adjustment](#) || [Sample population for expected future inbreeding](#)

All-breed animal model

By Paul VanRaden, Mel Tooker, George Wiggans, John Cole, and Jay Megonigal

Records from all breeds, including crossbreds, are now combined and analyzed together in one animal model. All relatives, regardless of breed composition, contribute to each animal's genetic evaluation, and more cows are compared within management group in herds containing multiple breeds and crossbreds. Previously, most crossbred cows were excluded unless they were part of breed-sponsored grading-up programs. Evaluations are calculated initially on an all-breed base and then are converted to traditional within-breed genetic bases for publication. The effect of heterosis is subtracted from each trait in the all-breed model, but when evaluations of crossbred animals are converted to the pure breed of evaluation, the heterosis expected when crossbreds are mated to purebreds is included in the predicted transmitting ability. Traits processed with the all-breed model are yield, productive life, somatic cell score, and daughter pregnancy rate. Multibreed models have been applied for U.S. goats since 1988 and for Holstein and Brown Swiss calving ease since 2005.

See "[All-Breed Evaluation](#)," [AIPL Research Report AB1](#), for detailed information.

Genetic trend for daughter pregnancy rate

By Paul VanRaden

The estimated genetic trend for daughter pregnancy rate is now more negative because the estimated repeatability for the trait was increased from 0.13 to 0.20.

See "[All-Breed Evaluation](#)," [AIPL Research Report AB1](#), for detailed information.

Genetic trends for calving ease and stillbirth

By John Cole, Frank Ross, and Dan Null

New graphs documenting genetic trend for calving ease (Brown Swiss and Holstein) and stillbirth (Holstein) are now available in the [genetic and phenotypic trends](#) section of the evaluations web page. Service-sire effects measure the direct effects of calves on calving traits. Daughter effects measure the effects of a particular cow (daughter) on calving traits through both maternal effects and the contribution of her genes to her calves.

Revisions to herd variance adjustment

By Paul VanRaden

Evaluations may change for cows with extreme yield deviations or in herds with unusually high or low variation because of two revisions to the adjustments for unequal herd variance. Adjustments are applied to all milk, fat, protein, and DPR records, but the estimated variance ratios are calculated only from complete records with a data collection rating of 92% or higher were used. The second revision is that herd variance ratios now are based on fat yield rather than milk yield.

See "[All-Breed Evaluation](#)," [AIPL Research Report AB1](#), for detailed information.

Sample population for expected future inbreeding

By Paul VanRaden

The population for calculation of expected future inbreeding was revised to be more current. The sample size increased from 600 to 1,000 animals and now includes both heifers and cows born during the latest 4 years instead of only 3-year-old cows.

See "[All-Breed Evaluation](#)," [AIPL Research Report AB1](#), for detailed information.