

Changes to Evaluation System - May 2005

Calving ease edits

By George Wiggans, Curt Van Tassell, and Laura Thornton

Data from herd years with abnormal distributions of calving ease scores are now excluded from evaluations. A goodness of fit (GOF) statistic for the multinomial score distribution was defined with lower GOF indicating greater deviation from the expected multinomial distribution of scores. Two thresholds for the goodness of fit (GOF) statistic were established. All herd years with GOF below both thresholds are excluded. Adjacent herd years with GOF below the secondary (higher) threshold are also excluded to minimize the instances of year-to-year change in the use of a herd's data. Based on preliminary research, thresholds were set to exclude 1.5% of the calving data. Further research is underway to determine the optimum level of exclusion, and to insure that similar percentages are excluded across herd sizes. An [abstract](#) and [presentation](#) from the 2004 American Dairy Science Association annual meeting describes the research supporting these edits. This research was funded by the National Association of Animal Breeders.

Interbull daughter calving ease

By George Wiggans and Paul VanRaden

Calving ease evaluations from Interbull now also include daughter calving ease (DCE). In February, missing DCE was estimated from available sire calving ease (SCE) evaluation or a DCE pedigree index was used. Interbull SCE or DCE will be official when it is the only evaluation, includes data from the US and at least one other country, or has higher reliability than the US reliability. Interbull SCE and official DCE will be used in computing Net Merit. Countries in addition to the United States expected to have data included in the May Interbull DCE evaluation are Canada, Denmark, Finland, France, Israel, Italy, Netherlands, Sweden, and Switzerland. Australia has data included in SCE evaluations only. An Interbull test run of Brown Swiss calving ease currently is planned for September.

The distribution file now includes calving ease evaluations for all Holstein bulls that have NAAB codes or Interbull yield evaluations. Where only an SCE or DCE is available, the missing trait evaluation is calculated from the available trait using the estimated genetic correlation between the traits (0.40). These evaluations receive a source code of "C" indicating that they are obtained from the correlated trait. Pedigree index is calculated from the evaluations of the sire and maternal grandsire and also includes 1/4 of the average calving ease evaluation by birth year. Evaluations that are pedigree index have a source code of "P" (evaluations including direct information have source codes "D" for domestic or "I" for Interbull).

Calving ease evaluations will be distributed in May and November as well as February and August, and the additional May and November distributions will include updated Interbull evaluations with the previous domestic evaluations. Officiality may be changed by the addition of foreign information in the Interbull evaluation.

Herd-by-sire interaction variance

By Paul VanRaden and Mel Tooker

Herd-by-sire interaction variance was reduced to 7% for yield traits. This compares to previously used values of 10% or 8% (for Jersey and Brown Swiss). This change supports inclusion of more daughters per herd in progeny test programs with large cooperating herds and reliability of bull and cow evaluations is improved slightly. However, the lower variance provides somewhat less protection against chance or fraud when sampling is limited to very few herds. The herd-by-sire interaction variance used for daughter pregnancy rate (DPR) was 1% but was increased to 4% for May to make daughter weights more consistent across traits. Further information is provided in a [supplemental report](#) and in an [abstract](#) by VanRaden and Tooker, 2005.
