

Changes to Evaluation System (February 2007)

Fertility evaluations from Interbull

By Paul VanRaden and George Wiggans

Evaluations of daughter pregnancy rate (**DPR**) for foreign Holstein bulls became available from Interbull. The Interbull evaluations are official and used in the [lifetime merit indexes](#) for bulls that have foreign daughters unless the bull has a domestic DPR evaluation with higher reliability that was not included in the Interbull evaluation. Another exception is that Interbull DPR is not used if reliability is <40%; correlated information from other Interbull traits is used instead to obtain higher reliability. The DPR usability code is in byte 293 of [format 38](#):

- 0 = Domestic DPR.
- 1 = Correlated traits from Interbull substituted because DPR was not reported or not used.
- 2 = Interbull DPR.

Countries besides the United States that provided measures of overall fertility similar to DPR (such as days open or calving interval) included Belgium, Great Britain, Ireland, Italy, the Netherlands, and Spain. Genetic correlations of U.S. DPR with overall fertility for those six populations averaged 0.84. Three other countries (Israel, New Zealand, and Switzerland) provided only individual fertility traits (such as cow conception rate or days to first insemination) that are not as highly correlated with DPR, and thus reliabilities of converted evaluations are lower for bulls from those countries. Evaluation methodology was reported by Jorjani ([2005, Interbull Bulletin 33:34](#); [2006, Interbull Bulletin 35:42](#)); correlations of female fertility traits in each country with other traits were reported by VanRaden ([2006, Interbull Bulletin 34:53](#)). Although Interbull fertility evaluations are available now for Holsteins, research has just begun on fertility evaluations for other breeds. More complete reporting of individual inseminations within the U.S. Dairy Herd Improvement system in recent years may allow evaluation of fertility traits that more closely match those of other countries in the future.

Elimination of duplicate evaluations for Red-and-White bulls and related format-38 changes

By George Wiggans and Paul VanRaden

Bulls that have both Red and White Dairy Cattle Association (**RWDCA**) and Holstein registration numbers have had two records with the same evaluation in the [format-38](#) bull evaluation files since 1989. Because having two records can be confusing and because both associations now use the same American ID number, the format-38 files no longer contain duplicate evaluation records. Instead, columns 530–546 report the RWDCA identification (**ID**) number to indicate dual-registered bulls.

A few bulls with more than one breed of evaluation still are included in evaluation files because they have daughters reported for more than one breed. However, such bulls will have only one evaluation that includes all relatives when an all-breed evaluation is implemented (planned for May 2007). To allow future calculation of all-breed evaluations, heterosis coefficients were added to [format 38](#) (columns 371–373).

Foreign sires and maternal grandsires previously had been reported with either a U.S. or foreign ID number, depending on whether the bull had a domestic or Interbull evaluation. The U.S. preferred ID now is reported consistently for bulls, sires, and maternal grandsires in [format-38](#) evaluation files.