

# A IPL Changes to Evaluation System - February 2002

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## Productive life for embryo donors

*By George Wiggans and Paul VanRaden*

Productive life (PL) is difficult to measure for elite cows used as embryo donors. The transfer of embryos delays the donor dam's own pregnancy and her future lactations, resulting in fewer months of PL. Some elite cows have spent years as embryo donors but received no PL credit after 10 months of lactation. In the past, permanent embryo donors were treated as if they had been culled. Because the very best cows may be kept for embryo income rather than milk income, culling decisions and longevity differ from normal commercial cows.

To avoid biases, embryo donors will receive projected PL instead of actual PL beginning with February 2002 evaluations. The PL records of donor dams will be truncated after a maximum of 10 months of credit in the lactation when embryo transfer began and the cow's PL will be projected after that lactation. Thus, an embryo donor will receive the same PL credit as a normal live cow whose future PL has not been observed and is projected instead. If the donor cow was less than 36 months of age at the truncation point, her PL record will not be used. The change in PL credit for donor cows is similar to a change implemented in November 2001 for herds that discontinued testing.

Changes in predicted transmitting ability (PTA) for PL were small. Because heritability is low, cow PTA depend mainly on sire and maternal grandsire PTA and on correlated traits with higher heritability. Sire and maternal grandsire PL changed little because most daughters of each bull are not embryo donors. Reliability of PL decreased slightly for many young or newly proven bulls because many of their dams are embryo donors whose PL records now are excluded or projected at an early lactation. Any cow that has at least one progeny by embryo transfer is defined to be an embryo donor. Some delay may occur before cows are added to the list of donors if progeny are not registered promptly or if embryos are frozen, but this change in data should make PL evaluations slightly more stable and accurate.

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