

A.I. Sire Fertility

By: George Heersche, Jr., Ph.D.



Estimated Relative Conception Rate, or ERCR, is a measure of conception rate of a service sire relative to service sires of herdmates. ERCR is calculated from 70 day non-return rate for A.I. first services of Holstein and Jersey bulls reported in the most recent three years. ERCR is available for only service sires with data available on 300 or more first services. Since ERCR has been proven to be an accurate predictor of future fertility, it can be useful to a dairy producer when choosing service sires. Because ERCR is determined from many services in many different herds, it is believed to be more accurate in identifying high, average, and low fertility bulls than a single herd estimate.

ERCR is expressed as a percentage difference of conception rate from the average A.I. service sire of herdmates. So, a sire with a +4 ERCR is four percentage points higher than average and eight percentage points higher than a sire whose ERCR is -4.

Printed with ERCR is an estimation of reliability and the number of services that were used in the calculations. Just as reliability is used as an indication of accuracy for PTA milk, so should reliability and number of services be used when judging the accuracy of ERCR. A reliability of 99 indicates the most accurate ERCR.

Over the years, many researchers have proven that there are several factors which influence fertility of dairy cows, including herd, housing, level of production, age of cow, technician, service number and the interval between services. The proportion of conception rate that can be attributed to the A.I. service sire is small.

But, when an additional fertility advantage is needed, ERCR can identify low fertility bulls to avoid or high fertility bulls to select. ERCR should be a secondary trait of selection, after Net Merit, PTA milk, PTA fat, PTA dollars, PTA type and other traits which have more impact on the economic return from the dairy herd. But, when a choice is to be made between two sires of equal merit on the primary traits, the one with a superior ERCR should be chosen.

Researchers at Virginia Tech reported that, relative to average ERCR, a premium of \$2 could be paid per ERCR score. For example, if there is equal merit in the primary traits, \$6 more can be paid for semen from a bull with an ERCR that is three when compared to a bull whose ERCR is zero.

ERCR should not be used alone to try to improve general conception rate of the herd. To improve average conception rate within a herd, most attention should be given to improving the day-to-day reproductive herd management.

The USDA Animal Improvement Laboratory publishes ERCR information. ERCR information is available from the A.I. organizations and on the AIPL web site at this URL: <http://www.aipl.arsusda.gov/eval/summary/ercr.cfm>