

# Dairy Herd Reproductive Performance

## Back to Basics 1



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

### Many Factors Influence Reproductive Performance

Reproductive performance is determined by many factors, and the overall reproductive performance is determined by multiplying these factors together (not adding them). The four overall most important factors when dairy cattle are artificially inseminated are listed below.

- A = Cows accurately detected in heat and inseminated (%)
- B = Fertility level of the herd (%)
- C = Semen fertility level (%)
- D = Inseminator efficiency (%)

Multiplying these factors together yields the percentage of cows pregnant which is one important measure of reproductive performance. This equation is commonly referred to as the fertility equation.

Fertility Equation =  $A \times B \times C \times D = \% \text{ Pregnant}$

The fertility of a herd can never be better than the weakest link in the chain. For example, if the efficiency of A, B, and D is 95% (.95), and C is zero then no cows will become pregnant.

Example:  $.95 \times .95 \times .00 \times .95 = 0.00\%$

If the efficiency of all of the factors are low, the result is subpar fertility.

Example:  $.60 \times .80 \times .60 \times .60 = 17.3\%$

Example:  $.50 \times .75 \times .75 \times .95 = 26.7\%$

Efficiency must be high for all of the factors to result in good fertility.

Example:  $.80 \times .75 \times .90 \times .90 = 48.6\%$

Example:  $.80 \times .85 \times .90 \times .90 = 55.1\%$

Most herds which experience subpar reproductive performance are having small issues in several areas. We must maximize efficiency in all areas to achieve good reproductive performance.