The Net Merit (NM$) formula has been updated for the third time since it was first introduced by USDA in 1994. The August 2006 revision updates economic values and correlations between traits, accounts for a revised definition of productive life (PL), and is influenced by two new genetic traits: service sire stillbirth (SSB) and daughter stillbirth (DSB) as part of a calving ability composite (CA$).

What are the changes to NM$?
NM$ is defined as the difference in expected lifetime profit as compared with the average genetic merit of cows within that breed born in 2000. The history of relative weights for NM$ is shown in Table 1. Emphasis on production traits has been reduced over time and has made room for additional fitness traits.

The production traits (fat and protein) now account for 46 percent of the index, PL accounts for 17 percent, together, somatic cell score and udder composite account for 15 percent. Reproduction (daughter pregnancy rate (DPR) and CA$ accounts for 15 percent. Body size and feet-and-legs composite accounts for 4 percent, respectively.

How much are bulls going to rerank?
The correlation between NM$ 2003 and NM$ 2006 is 0.975. In other words, the Net Merit formula caused only small changes in NM$ for most A.I. bulls. However, bulls that are excellent for PL, DPR, and CA$ may have gone up considerably in the rankings, more closely reflecting their daughters’ economic merit.

What about specific traits?
Productive life (PL):
Previously, cows received no credit after the first 10 months of each lactation or after 7 years of age. Beginning this August, cows continue to get PL credit as long as cows continue to get PL credit as long as they are producing milk in the herd. PL credits are now based on standard lactation curves with no credit after the first 10 months of each lactation. The production traits (fat and protein) now account for 46 percent of the index, PL accounts for 17 percent, together, somatic cell score and udder composite account for 15 percent. Reproduction (daughter pregnancy rate (DPR) and CA$ accounts for 15 percent. Body size and feet-and-legs composite accounts for 4 percent, respectively.

How to use NM$...
When selecting bulls, start from the top of the list of bulls ranked by NM$. Availability and semen price definitely need to be taken into account. Many producers will feel more confident in selecting bulls that have more daughters distributed in many herds. Avoid bulls with high SC$ for use on heifers. Male selected bulls to individual cows to minimize inbreeding by pedigree inspection within breed or by crossbreeding.

Avoid the following:
1. Minimum standards for individual traits, such as specifying that selected bulls need to be +1,000 pounds for milk, +1.50 for udder composite, and +1.00 for daughter pregnancy rate. The traits included in NM$ are already properly weighted. A high NM$ bull that is low for one trait compensates by being higher for other traits.
2. Selection for economically important traits. For example, PTA type is not in NM$ because research has shown that, after accounting for udder and feet-and-legs composites, PTA type adds no value. In fact, high PTA type bulls tend to sire daughters that are too tall, too flat in the rump, and way too sharp for optimal milk production, health, and longevity.