

# Pinpointing Optimal Milk Levels

Interactive module available online helps identify economical ranges of milk EPDs for commercial cattlemen.

by *Shauna Rose Hermel*

The industry has given a lot of lip service to matching cows to the environment according to cow type, size and milking ability. But while producers have had expected progeny differences (EPDs) for milk and mature cow size to help make directional change, they have had few indicators of what the ideal is for a given environment.

"We know milking ability is a trait to be optimized — not maximized or minimized," says Bill Bowman, American Angus Association director of performance programs. "We also know that what's optimal is going to vary from one operation to another based on the resources available and the cost of those resources."

Giving commercial producers a tool to

help pinpoint what's ideal for their given scenarios was the goal of the Angus Optimal Milk Module approved by the Association's Board of Directors in February and now available online at [www.angus.org](http://www.angus.org).

The average milk EPD in the Angus breed increased from 6 pounds (lb.) in 1990 to 18 lb. in 2003, says Sally Northcutt, Association director of genetic research. Keep in mind, the milk EPD does not refer to the volume of milk produced, but rather to the expected difference, expressed in pounds of calf weaned, of a sire's daughters due to milk and mothering ability when compared to daughters of other sires.

Within the breed, milk EPDs range from -38 to +45 in the spring 2005 National Cattle

Evaluation (NCE), Northcutt notes. "That gives commercial producers a lot of options from which to choose, but how do you know what's best for your herd?"

Guessing can be costly, she adds. Too little milk can result in underutilization of resources, fat cows and a smaller paycheck for weaned calves. Too much milk can create problems of lower reproduction rates, higher feed costs and resource depletion.

## Simple three-step process

The Angus Optimal Milk Module helps cattlemen establish a range of milk EPDs to target when selecting herd sires that would be most desirable for their individual herds based on current herd characteristics. Available via the Internet, the interactive decision tool walks producers through a series of questions to describe their herds. Help screens available throughout the module provide insight as to the inputs and thought processes behind the module.

**Step 1:** Estimate average cow weight and general milk level of the current herd (see Fig. 1). The U.S. average for cow weights by age, based on Association records for Angus females with an average body condition score (BCS) of 5.5-6.0 on a 9-point scale, is available for reference via a help screen. Another graph shows the age distribution of a typical herd.

While commercial customers are asked to provide their herds' current average levels of milking ability in general terms (low, medium-low, medium, medium-high or high), a help screen is available to put those milking levels into an Angus EPD context based on the Angus sires of the producing females in the herd. The help screen guides commercial producers to select a milking ability level that represents the average milk EPD genetics of sires that influence the herd,

Fig. 1

Fig. 2

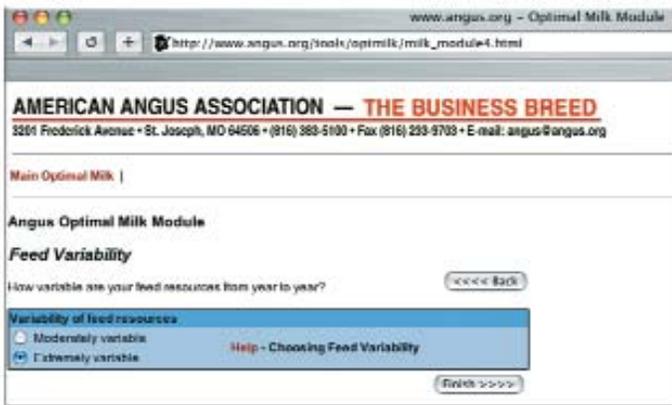


Fig. 3

with a midpoint of +18 considered medium, while +10 would be considered low and +27 would be high.

**Step 2:** Estimate average pasture and feed costs per cow (see Fig. 2). If a producer doesn't know his or her own pasture and feed costs, a help screen is available to show average costs for several areas of the country based on university and Standardized Performance Analysis (SPA) databases.

**Step 3:** Indicate the variability of available resources (see Fig. 3), which affects the riskiness of higher-milk-EPD and larger cows. If a producer lives in a drought-prone region, his or her feed resources may be highly variable, Northcutt explains. Volatile hay prices can result in large changes in annual feed costs from year to year; whereas, areas such as Missouri have relatively stable hay prices, indicating a more reliable feed supply and moderately variable pasture and feed costs.

With the estimates in place, the module provides a range of optimal milk EPDs that a bull buyer can keep in mind as he or she selects sires for the herd (see Fig. 4), assuming the herd retains its own replacement females.

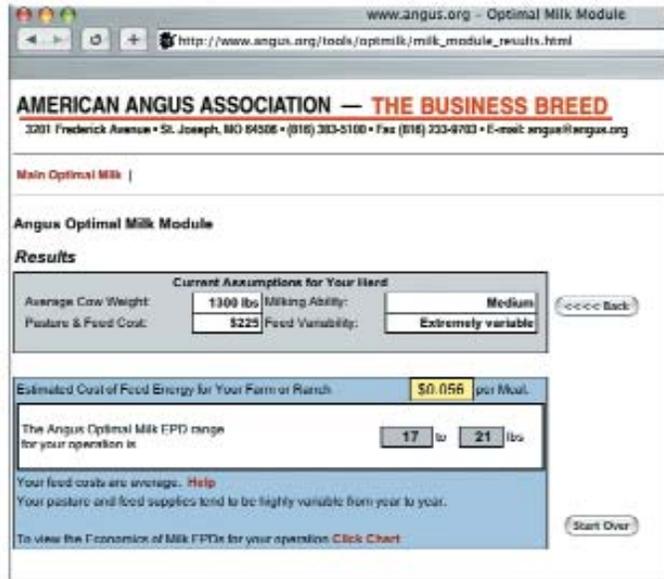


Fig. 4

This screen also shows all of the herd descriptions a cattleman has selected and the resulting cost per megacalorie (Mcal.) for the herd.

With another click of a button, the module plots a graph to show the anticipated net income per head across a range of milk EPDs (see Fig. 5). The resulting curve shows the economic incentive for increasing milk EPDs from what they were in 1990.

However, the curve also demonstrates the law of diminishing returns: The economic benefit for each incremental increase in milk EPD decreases as higher levels of milk EPD are attained, so the payback lessens for each additional pound of milk EPD. In fact, after a while, the costs of adding extra milk begin to exceed returns, and the curve begins to head back downward.

A herd's optimal milk level is at the top of the curve or plateau area (shown in green in Fig. 5). Performance programs staff members recommend remaining to the left of the optimum box, especially for those in a more variable feed cost environment. The limited increase in economic gain may

not be worth the risks involved with higher-milk cows.

The Angus Optimal Milk Module is intended to help commercial producers choose from the wide variety of milk EPDs available within the Angus breed what is most economically feasible for their circumstances. As Fig. 6 indicates, the optimal milk level will vary considerably from one herd to the next. Ranch B, having lower unit pasture and feed costs, will have a higher optimal milk level than Ranch A, which provides an example curve for a higher-feed-cost herd.

Though the module is designed for use by commercial producers, seedstock producers may find it helpful in their own herds and as a practical customer service tool.

The module is available online via [www.angus.org](http://www.angus.org). For more information contact the Association Performance Programs Department at (816) 383-5100 or [snorthcutt@angus.org](mailto:snorthcutt@angus.org).

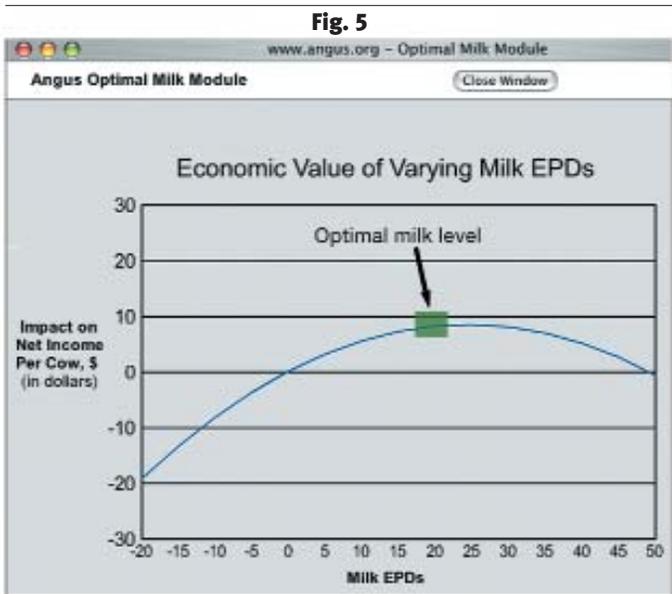


Fig. 5

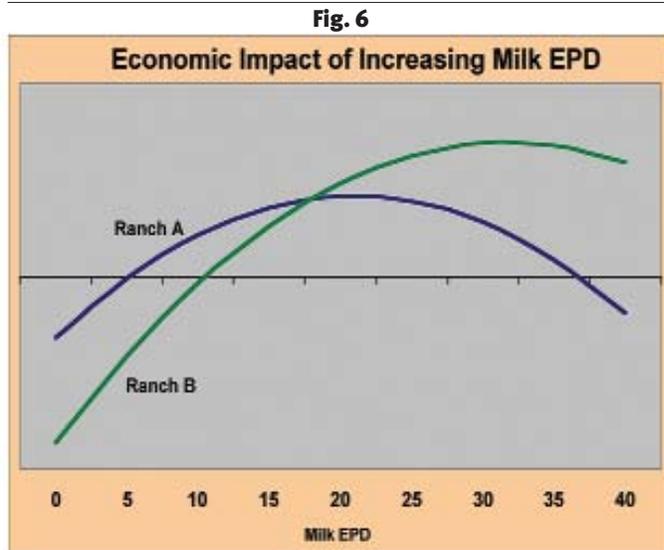


Fig. 6