



By the Numbers

► by Heather Bradford, Angus Genetics Inc.

Do my cows milk too much?

Many beef producers ask that very question. It can be difficult to determine the milking ability of the cow herd, and even more difficult to determine if that level of production fits the environment. The American Angus Association's solution to this question is the Angus Optimal Milk Module, a decision aid available at www.angus.org under Data Searches/Tools.

Calf growth vs. rebreeding

The Angus Optimal Milk Module has recently been updated to better reflect current market conditions and industry trends. This tool can help both seedstock and commercial producers identify the optimal milking ability for their herd, or could be helpful for seedstock producers to evaluate the needs of their commercial customers. It is important for beef producers to match mature cow size and milking ability with their environment and feed resources.

Cows with greater milk-production potential have greater nutrient requirements and are less productive when feed resources

are limited, variable or of low quality. As a result, these cows can have longer postpartum intervals, lower body condition scores and decreased pregnancy rates. Cows with less milking ability can produce fewer pounds of calf and can potentially become fat when feed resources are plentiful. Thus, milk production is a trait that should be optimized to best combine two important economic traits — calf growth and cow reproductive success.

The milk expected progeny difference

Advance planning is always a benefit when selecting maternal performance of replacement heifers.

(EPD) represents the expected difference in pounds of calf weaned from a sire's daughters. This future difference in calf growth results from differences in the daughters' genetic merit for milking and mothering ability.

The average Angus milk EPD has increased genetically by more than 20 pounds (lb.) in the past 20 years, meaning there has been considerable genetic selection pressure for this trait.

Using the module

To use the Angus Optimal Milk Module, producers need to know a few different measures about their cow herd. These include average cow weight, milking ability, annual feed cost and feed variability. Figs. 1 and 2 are samples of the screenshots in the module. Each component has a help link with more description about selecting the appropriate value for a herd.

Determining the milking ability of the herd can be difficult; so a table is provided in the help link to compare milking ability to the milk EPD. Seedstock producers can use the average milk EPD in their herd to help choose the milking ability of their cows. Commercial producers can use the average milk EPD of the Angus bulls that sired their females to help evaluate the milking ability of their herd.

The next screen asks for an annual pasture and feed cost per cow. When combined with cow size and milking ability, the module determines if the feed cost is estimated to be above or below industry average. The final question refers to the variability of feed prices from year to year. A drought-prone region where prices fluctuate greatly depending on the availability of feed resources is highly variable. However, an area with relatively abundant feedstuffs at stable prices is moderately variable.

Once all the questions are answered, the results include a suggested milk EPD range. In the example in Fig. 3, the optimal range for the milk EPD is 18 lb. to 22 lb. Seedstock producers should compare the average milk EPD in their herd to the optimal range. Commercial producers can use the table comparing milking ability to milk EPDs to help determine if their herd is aligned with the optimal range.

Fig. 1: Producers describe their cow herd in the Angus Optimal Milk Module

COW WEIGHT AND MILK

Enter the estimated average cow weight and current milking ability of your cow herd.

Average cow weight*	Milking ability
<input type="radio"/> 1100 lbs or less <input type="radio"/> 1150 lbs <input type="radio"/> 1250 lbs <input checked="" type="radio"/> 1300 lbs Help - Cow Weight <input type="radio"/> 1350 lbs <input type="radio"/> 1450 lbs <input type="radio"/> 1500 lbs or more	<input type="radio"/> Low milking ability <input type="radio"/> Medium-low <input checked="" type="radio"/> Medium Help - Milking Level <input type="radio"/> Medium-high <input type="radio"/> High milking ability

*Average weight of all cows in your herd two years of age and older.

Fig. 2: Producers estimate annual feed costs in the Angus Optimal Milk Module

FEED COSTS

Enter your annual pasture and feed cost per cow below.

Total pasture and feed cost per cow per year *	Help - Selecting Feed Costs
<input type="radio"/> \$310 <input type="radio"/> \$325 Low <input type="radio"/> \$340 <input type="radio"/> \$355 <input type="radio"/> \$370 <input checked="" type="radio"/> \$385 Average <input type="radio"/> \$400 <input type="radio"/> \$415 <input type="radio"/> \$430 <input type="radio"/> \$445 High <input type="radio"/> \$460	<p>*Dollars you spend in a typical year to meet all the nutritional requirements of your cows. Include all pasture and other forage costs such as hay, silage and other harvested feeds as well as purchased feedstuffs.</p> <p>Include all grain and protein supplement costs. Include applicable harvest and equipment costs. Include salt and mineral costs.</p> <p>In addition to cash (direct out-of-pocket) expenditures, be sure to include opportunity costs on land you own that is used to support your cows (equivalent pasture lease rate).</p>

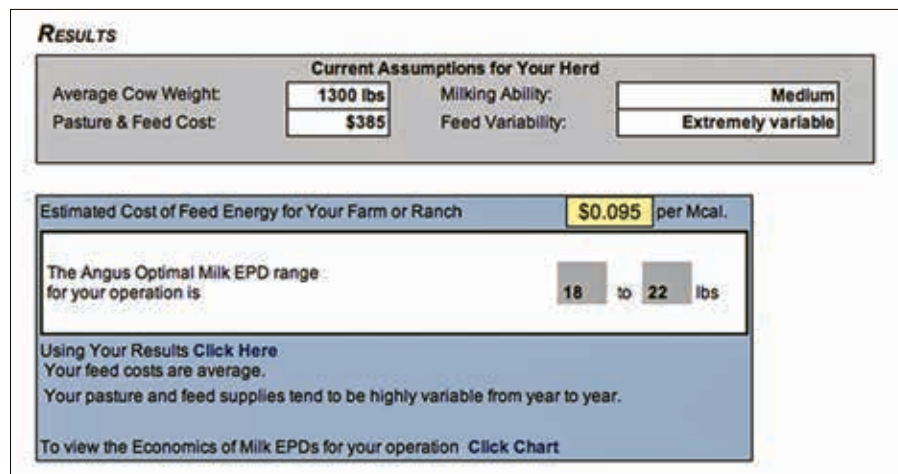
If the herd average EPD is close to the optimal range, then the herd has targeted an appropriate genetic potential for milking ability given their estimated costs and environment. In this case, bulls with milk EPDs within the given range should be considered to sire replacement heifers.

If the herd average milk EPD is lower than the optimal range, this means feed resources are relatively inexpensive. The extra revenue from increasing milking ability and subsequent calf growth should outweigh additional cow feed costs. Selecting bulls with milk EPDs greater than optimal will help increase the cow herd's genetic potential for milking ability. Then, in subsequent generations, bulls with milk EPDs within the optimal range should be selected to maintain milking ability at that level.

Advance planning is always a benefit when selecting maternal performance of replacement heifers. It's easier to start with conservative milk EPD selection on sires than to make corrections after investing in potentially high-milking-ability females with greater nutrient requirements. These monetary and time investments in future years can be costly to the bottom line.

If the herd average milk EPD is greater than the optimal range and feed resources are expensive, reducing milking ability

Fig. 3: Based on producer inputs, the Angus Optimal Milk Module suggests an optimal milk EPD range for the herd



is one way to decrease feed costs. The decrease in feed cost should outweigh the slight reduction in calf growth that can be associated with decreased milking ability. Producers first should select bulls with milk EPDs lower than optimal, and then in later generations consider bulls within the optimal range.

The Angus Optimal Milk Module is a tool for producers to determine the ideal milking ability for their cow herd's

production environment. By optimizing milk production, producers can better match cow nutrient requirements to feed resources while targeting the desired calf growth. The Angus Optimal Milk Module is available at: www.angus.org/Performance/OptimalMilk/OptimalMilkMain.aspx.



Editor's Note: Heather Bradford is the summer intern for AGI.