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**“Beef Production Strategies” article**

**Balancing Milk Levels in Beef Herds**

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One of the challenges in beef cattle selection and culling involves finding that optimum level of milk production for the herd. Optimum does not necessarily mean maximum. Too much milk production in a herd can have some negative consequences. Likewise, too little milk production in a beef herd can result in lighter weaning calves. The level of milk production in a cow-calf herd must fit the forage and feed environment to ensure that nutrient requirements of lactating cattle are met and rebreeding is not hindered by inadequate nutrition.

Nutritional and other environmental factors will affect the degree to which the genetic potential for milk production is expressed. Even when the genetic potential for a particular level of milk production is present within an individual or herd, it does not mean that this level of milk production will be achieved. Both genetic and environmental influences on milk production can ultimately affect calf weaning weights and cow reproductive rates.

**Performance Tradeoffs**

There are genetic antagonisms in beef production where improvement for one trait tends to decrease the level of performance for another trait. Milk production is no exception to performance tradeoffs. As milk production increases, more energy, protein, and other nutrients are leaving the beef female and being transferred to the suckling calf through the milk. This benefits the calf but also increases the dam's nutrient requirements. If these increased nutritional needs are not met, then the lactating cow or heifer may lose body condition. In turn, reproductive rates can be negatively impacted if body condition drops below moderate levels.

As cow body size increases, larger quantities of nutrients are required. A higher milking cow, on the other hand, requires a diet that is higher in both quantity and quality. Because high-milking beef females often cannot consume enough extra low-quality forage and feed to meet added nutrient demands, high genetic milking potential may not match up well to a low quality diet. Of course, increased nutritional demands resulting from high milk production or larger body size can be met with a proper feeding program, but expenditures for feed and pasture may increase to meet these demands. Optimizing milk production levels with nutritional program costs is a balancing act.

As nutrient costs increase, high milking or larger cattle may be less desirable in a cow-calf operation. In contrast, reasonably priced feed favors heavier calves from higher milking dams in cow-calf production and lighter weight calves fed over a longer period in the feedlot. Increasing milk yield has been shown to increase both weaning weights and efficiency to weaning in the cow-calf sector, with mixed results on efficiency to

slaughter. Therefore, for strictly cow-calf producers, increasing milk and size may be practical for increasing weaning weights and optimizing production when feed prices are reasonable. However, for producers retaining ownership of calves through postweaning phases, maximizing profit by increasing weaning weights via milk production works in some cases and not in others.

Genetic potential for milk production can vary widely among cattle. An efficient level of milk production and mature body size for the herd may vary from one farm to the next. A moderate level of milk production is generally most appropriate, however, low to high milk production levels can be applicable depending on production and market conditions. In general, larger body size is more suitable with larger quantities of forage, and high milk production fits better with adequate levels of high quality forage.

### **Selection Considerations**

Selection tools are available that provide information on the genetic potential of individual animals for specific traits such as milk production. Expected progeny differences (EPDs) give an indication of the expected performance of an animal's calves for a particular trait. Milk production is an important maternal trait that directly affects calf weaning weights, and milk EPDs are one of the more common EPDs available from beef cattle breed associations. Milk EPDs are expressed as pounds of calf weaned due to the milk production of the dam, not as pounds of milk produced.

In addition to milk EPDs, some breed associations report EPDs that combine the effects on calf weaning weights of a dam's milk production and the growth potential she transmits to her calves. These combined maternal EPDs are equal to one-half of the weaning weight EPD plus one-half of the milk EPD. Various breed associations have different names for combined maternal EPDs including maternal milk and growth, maternal weaning weight, and total maternal EPDs.

Another important selection consideration related to milk production is evaluation of udder structural soundness. A cow should have a healthy, well-suspended udder with a level floor and four proportionally sized teats. Calves can have a difficult time nursing pendulous udders or balloon teats, which can cause weaning weights to suffer.

As with many other traits, selection for milking ability involves assessing production resources and determining what works best for the production and marketing environment. Selection decisions should focus on finding an acceptable balance among milk production and other economically important traits. There is no one right answer that will fit every Mississippi cow-calf operation, but there may be opportunities for improving production efficiency through informed cattle selection and culling decisions within individual herds.

### **Beef Cattle Short Course**

The May 7<sup>th</sup> early registration deadline for the Beef Cattle Short Course featuring Nolan Ryan is fast approaching. The short course will be held Friday, May 21 from 8:30 a.m.

to 4:30 p.m. on the Hinds Community College campus in Raymond, Mississippi. Educational programs will focus on “Production Targets for Success in the Beef Industry” and are being presented in cooperation with the American Breeds Coalition. Topics will include: where Bos indicus cattle fit in the industry, the Nolan Ryan Tender Aged Beef program, Texas A&M Ranch to Rail program results, marketing alliances for small producers, electronic identification, and herd health and management practices to improve feeder calf value. There will also be an opportunity to interact with the speakers during a panel discussion. For more information on the upcoming Beef Cattle Short Course, contact your local Extension office.