

How Much Is *Too* Much?

Individuals must determine how much milk is enough, based on feed quality, quantity and management of young and mature cows.

Story by
RON TORELL

How much milk and how much frame are enough? If you like Oreos and play center for an NBA basketball team, you can't have enough of either. However, if you are a young range cow carving out a living in the desert lands of Nevada, too much of either may be your demise. Conversely, if you are a mature cow living on the lush irrigated pasture of West Virginia, too little milk and too small a frame may be a waste of resources and represent lost income.

"The largest percentage of cows that drop out of our program are the 3- and 4-year-old cows," says Alan Sharp, a Ruby Valley, Nev. rancher. "The reason they drop out is because of failure to rebreed despite proper heifer development as a yearling and feeding a balanced postpartum ration as a 2-year-old."

Jon Griggs, manager of Maggie Creek Ranch near Elko, Nev., agrees with Sharp. "The added growth requirements of the young cow, combined with the added requirements for excessive milk and large frame size, is too large a void for our feed resources to fill. If, however, we can get our low- to moderate-milk and moderate-framed cow to the 4-year-old stage, fleshed, with a third calf in her, that cow will usually stay on the ranch and produce every year thereafter."

Griggs goes on to say, "Crossbreeding can be a factor to consider when setting parameters for expected progeny differences (EPDs) for milk. You pay for heterosis by having a crossbred or composite cow that may need more input than a straightbred, and if she's a heavy milker, even more inputs are required."

"Getting the cow to that third calf is the challenge," agrees Ken Conley, manager of the University of Nevada Gund Research and Demonstration Ranch located north of Austin, Nev. "Over the years we have had to implement several management strategies to keep these young cows in the herd (see



"We know the breed average for the current population of Angus cattle is a +15.0," says John Crouch, director of performance programs for the American Angus Association, in regard to milk EPDs. The optimum level will depend on your feed and management resources. [PHOTO BY SHAUNA ROSE HERMEL]

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"We used to marvel at a first-calf heifer that weaned a 500-pound (lb.) calf off our rangelands," he continues. "We cursed the first-calf heifer that weaned a 400-pound calf. Then we wised up and realized that those heifers raising the largest calves were open and thin come pregnancy-check time. The heifers that were pregnant were the heifers that weaned the moderate to smaller calf."

Those pregnant heifers returned the most dollars in the long run because the ranch didn't have to replace them with weaned heifer calves that had to go through the same period of high nutrient demand and acclimation, Conley says. "To compound the situation, we would select replacement heifers that had the heavier

weaning weights. I am convinced the cause of these open young cows is too much milk and frame coupled with the added nutrient requirements of being a young cow."

The opposite problem

Robert Whitacre of Winchester, Va., has the opposite problem. The area receives more than 30 inches (in.) of precipitation annually. Native forages include clover, bluegrass, orchard grass and fescue.

"Feed is not a problem here, so milk and frame are less concern," says Whitacre, a commercial cattleman and field representative for Accelerated Genetics. "I sell a lot of semen from frame score 7 bulls with Angus milk EPDs of +27 and above. It is not uncommon for us to wean 700-pound calves."

"A smaller-framed, lower-milk cow does not work for us. She gets overfleshed and weans a smaller calf compared to the type of cow we can support," Whitacre continues. "That type of cow winds up in the cull pen fairly rapidly here. There is a limit, however. We try not to exceed a 7.2 frame or much more than +30 on milk for Angus. Extremes have a way of creating problems."

Where's the balance?

So how much milk and how much frame are too much?

"There is not much scientific data available to guide producers as to the correct milk EPD or frame size for various feed resources," says John Crouch, director of performance programs for the American Angus Association. "Research does show that the higher the milk EPD and the larger the frame of the animal, generally the higher the nutrient requirement of that animal."

There are always exceptions, such as the high-milking, small-framed cow or the large-framed, low-milk cow or the crossbred, easy-fleshing cow, that defy all the rules, Crouch says. "We know the breed average for the current population of Angus

cattle is a +15.0. Each individual must determine how much milk is enough, based on feed quality, quantity and management of young and mature cows. Too much can be devastating under harsh and dry conditions; however, too little can result in lost income that could have been passed on to the calf from the maternal component."

"To compound the situation, there are many variables one must consider when setting a ranch's maximum-milk-EPD criteria. There is no cut-and-dried answer," says Larry Leonhardt of Shoshone Angus, Cowley, Wyo. Leonhardt has studied this question on his registered Angus ranch for the past 20 years.

"The type of cow, supplemental strategy, level of heterosis, weaning strategy [and] maturity level of the cow herd are all factors that can influence how much milk a ranch can handle under various forage and range conditions," he says. "You have to have enough milk and frame to make a calf, however not so much as to make open, young, thin cows in the process."

If producers don't know what their ideal is, Leonhardt recommends starting with a target of average and adjusting from there. He cautions, however, that average may be too much for the 8- to 12-in. precipitation zones and not enough for the higher precipitation zones. And average milk for breeds that require high nutrient levels may be too high as a starting point.

"Average always gives you fewer problems. Yet, as a registered bull seller, average is hard to sell," Leonhardt says. "You can hardly give a below-average-milk-EPD bull away. The bottom line is, the cow has to match the environment."

Finding a match

Jim Gosey, University of Nebraska beef cattle specialist has tracked research on the effects of cow size and milk production for several years and points to work done at the Roman L. Hruska Meat Animal Research Center (MARC), Clay Center, Neb., by Tom Jenkins and Calvin Farrell.

"Their work demonstrates that higher levels of milk production have a detrimental effect on reproductive levels under sparse feed conditions and less of an effect when

feed availability is abundant and of good quality," Gosey says. "Jenkins and Farrell's work also showed that there is an interaction between breed of cattle and feed availability."

At low levels of feed, generally the smaller cows with more moderate milk levels excel due to their greater reproduction and lower cost, he explains. But, at higher feed levels, the large high-milking cows excel due to their greater output of calf weight.

When asked how much milk is enough, Gosey suggested taking a look at the oldest cows and using them as a guide, or taking a look at the heifers that are falling out of your program. If possible, look at the sires of these two classes of cows and determine what milk EPDs they had at the time of purchase.

Additionally, Gosey suggests ranchers consider whether they sell calves or yearlings. Milk is less important if you are selling yearlings.

Gosey warns against any single-trait selection, including the current fascination with marbling. Some sires that excel in marbling are well above their breed average for milk EPD. Breed differences with regard to milk level and marbling show a definite trend for higher levels of marbling to be associated with higher levels of milk production. For most traits, moderation and balanced trait selection are key.

Which is worse?

Frame size or milk production, which causes a bigger nutrient need for the beef cow? MARC research indicates that breeds that have the ability to produce higher levels of milk also have heavier organ weights. Heavier organ weights equate to greater nutrient needs, whether or not they are lactating.

Rick Rasby, a beef specialist at the University of Nebraska, says the MARC data suggests milk production may be as big a drag on a cow's system as frame size.

"This is not to say that frame size is not important, but both need to be considered," Rasby says. "Again, moderation may be the safest route until you can determine what best fits your environment and feed resource base."

A moderate-framed cow would have a mature weight of 1,100-1,175 lb. at a moderate body condition score (BCS) of 5, Rasby explains. He describes moderate-framed as frame score 4 and 5 on a 9-point scale. Large-framed cows are frame score 6-9 with mature weights of 1,250-1,475 lb. and above. Small-framed cows are frame score 1-3 with mature weights of 955-1,030 lb.

"It is a good idea to stay away from extremes — the extremely large and extremely small-framed animals," Rasby recommends. "Calves destined for the rail would get discounted quite severely for too large or too small a carcass. Evaluate your feed resource. If you have limited feed, stick with the moderate-framed cow. If you have lush feed, you may be able to support a higher nutrient demanding cow or breed of cow."

So how much milk and frame is enough? Again, when it comes to Oreo cookies and basketball, the more the better. However, when cows are concerned, the experts we contacted suggested starting with average milk and frame size and adjusting over time. Make your adjustments based on performance under your feed and range resource conditions.



Editor's Note: Ron Torrell is an Extension livestock specialist at Elko, Nev.