

Why Continue to Select for Milk Yield?

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Dairy farmers get paid for milk yield from dairy cows. It represents over 80% of the income from most dairy enterprises. The milk production of a cow is the result of her genetic capacity to produce milk and the provision for her on the part of the dairy farm manager of high quality nutrition and a comfortable stress-free environment. Over the last 40 years in the US the milk yield of first lactation Holstein cows has almost doubled from about 13000 pounds to just over 25000 pounds. Over that same time period the genetic value of dairy sires for milk yield has increased almost 7800 pounds. These gains are tremendous and represent a concerted effort of dairy farmers and the AI industry to improve milk production and the genetic capacity of cattle for milk production.

Now some farmers are asking if we need to continue our strong emphasis on milk production in our genetic selection programs. Why would this question be asked? Trends from USDA data show a decline in productive life of about 3 months over the last 40 years while breeding value of sires for productive life has actually increased by about 6 months. Other studies have shown a decline in several measures of reproduction but the genetic component of this decline is not clear cut. The real question is has increased genetic capacity for milk yield come at too high a genetic price?

This is not an easy question to answer. Management and the economics of dairy production must be examined to arrive at some overall perspective. Feed cost is the single largest cost category for milk production. Because higher producing cows require more nutrients, especially energy and protein, they will have higher feed costs for the same level of ration quality than lower producing cows. To a degree higher producing cows have greater health care costs. Most other dairy production costs are essentially independent of the yield of the cow. However, higher producing cows should still generate more income over variable costs. In so doing they will raise the production efficiency and should with good management increase the profit margin. Management is responsible for the environment which promotes higher production as well as the cost control to make the higher profit margin possible.

Continued selection on milk yield will ensure that the cows will have the genetic capacity to produce as good managers provide environments which stimulate higher and higher milk production. A long term study at the University of Minnesota begun in 1964 has shown that cows sired by bulls highly selected for yield since then now produce 10,000 pounds of milk more per lactation than cows sired by bulls at a 1965 genetic level when both groups of cattle were fed and managed alike. This study is consistent with the national trend discussed earlier.

We currently recommend choosing AI bulls which are in the 80th percentile or above for Lifetime Net Merit \$ to sire herd replacements. This should keep the genetic potential of herd replacements ahead of the genetic trend currently being experienced in the national population. In the Lifetime Net Merit \$ index, yield adjusted for feed cost receives about 67% of the emphasis in the selection for the production, type, somatic cell score and productive life traits. Among bulls which meet this standard, specific bulls can be selected to improve or prevent decline in other traits of interest.

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