

Easy Money: Genetic Return on Investment

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As milk prices trickle down and margins tighten, dairy owners intensify their efforts to find profit margins, and understandably so.

Decisions made three to five years ago and, for that matter, six to 10 years ago, still significantly impact your bottom line. I am not referring to major capital projects like parlors, buildings or land, but something that is only one to two percent of your annual expenses - genetics.

Genetics accumulate over generations, both good and bad. There is no better example than the former University of Minnesota herd at Waseca. In the early 1960s, the cows in this research herd were split into two groups. One group was genetically frozen in time, and the other was mated to the top production bulls each year. Over the next 35 years, a tremendous difference in production resulted - to the tune of about 10,000 pounds of milk per lactation.

Keep in mind, the two groups of cows were managed the same and fed the same. Everything, from the day they were born until the day they left the herd, was the same.

The only difference was which canister the semen came from to produce them.

Obviously, the genetic differences in the Minnesota herd probably do not exist in any commercial herds today-yet. But, you may be surprised by the vast range of genetic levels of cows and bulls in today's U.S. population.

Statistics provided by AIPL* after the February 2006 genetic evaluations find the average U.S. cow has a milk index of +58 PTA Pounds. Of more importance is the genetic difference between the top and bottom ends of the cow population.

Table 1

Genetic Variance Among Sires in U.S.

Breed	# Bulls	Active A.I. Percentile Lifetime Net Merit			Non-A.I. Bulls	
		20th	50th	80th	# Bulls	Avg. LNM (PWT Excluded)
Ayrshire	25	-30	70	209	NA	NA
Brown Swiss	44	148	290	356	4	-123
Guernsey	21	18	185	255	5	-275
Holstein	643	104	259	373	285	-5
Jersey	89	150	279	355	43	229

Source: USDA AIPL, February 2006

At the extreme, comparing the bottom one to two percent of cows to the top few percent, shows genetic differences are over 8,000 pounds! Like the Minnesota herd, this is the difference in production you would get if these extreme cows were in the same environment. I must admit this difference was bigger than I expected, so I contacted the AIPL staff to verify it.

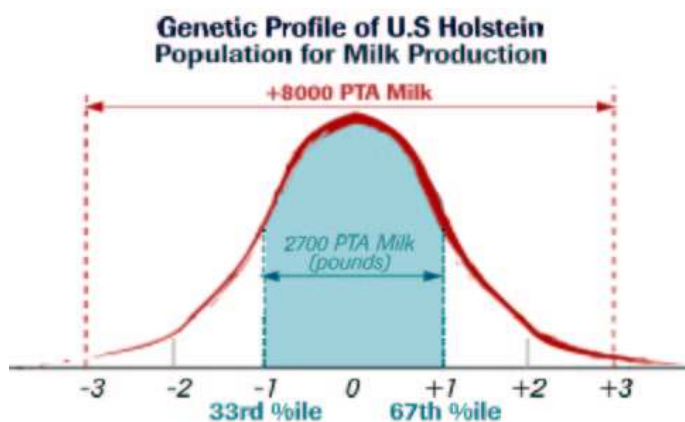
Let's move into the "meat" of the cow population. We'll compare the 33rd percentile of cows to

the 67th percentile, or plus or minus one standard deviation from the average. This difference is almost 2,700 pounds per lactation or nine pounds of milk per day! Can you afford this difference?

Obviously, little can be done about past decisions, genetic or other-wise. The future genetic potential of your herd will be driven mainly by the service sires you choose.

To this point, I have chosen to talk about milk production because it is easy to relate. If we look at all genetic traits that affect a cow's lifetime profit, we need to factor in additional traits - like longevity, fertility, Somatic Cell Count, calving ability, fat and protein pounds, conformation and body size.

The best tool to combine all these traits and their economic influence is Lifetime Net Merit \$ (LNM).



What Are the Options?

Since the major impact to your herd's future built-in profit potential will come from the bulls, what are the options and differences? After the February 2006 genetic evaluations, there were 776 active bulls to choose from. Their range for LNM is \$1,121!

In other words, if you use the worst bull available and the best bull, the difference in net return of their daughters over their lifetime would be \$1,121. This is basically the same example as the Minnesota research herd, except we are comparing net income, not pounds of milk.

The average active bull averaged +\$257 LNM in February. Refer to Table 1 to see the difference in genetic levels of different breeds and groups of bulls.

All A.I. bulls are not equal. Lowest price seldom, if ever, equals best value. A simple guide for buying semen is this: Every \$10 LNM is worth \$1 per unit at the time of purchase, considering expected future Return on Investment. Since heifers require less units of semen to produce a milking daughter, \$6 LNM is worth \$1 per unit at the time of purchase. To double returns, go to \$20 of LNM to \$1 of semen cost.

A practical way to use this guide is in comparing two groups of bulls for purchase. Say Group A averages \$400 LNM and Group B averages \$370, for a difference of \$30 LNM. Thus, one could afford to pay \$3 more per unit for Group A, based on expected future returns.

The bottom line is, semen is not a commodity like corn or cottonseed. Buying it like a commodity is penny wise and dollar foolish. The dairy industry is very competitive and will continue to be. Your herd's genetic potential relative to your neighbor's or a herd across the country, will be one of the determining factors of which dairies remain profitable and which do not.

There are few things you can do to more effectively increase your herd's future profit potential than packing it with the best genetics generation after generation.

Like the Minnesota research herd (same feed, same management, same facilities), genetics can change net returns by hundreds of dollars per cow over their lifetime.

Can you afford to not have top quality genetics working for you? And if you can, why would you want to?

We encourage you to develop a genetic game plan utilizing Lifetime Net Merit as a measuring tool and stick to it generation after generation.

*AIPL= Animal Improvement Programs Laboratory, United States Dept. of Agriculture