

Getting the Most Genetics for Your Greenbacks

By: George Heersche, Jr., Ph.D.



Some Basics Have To Be In Place

We must always remember that each cow is a production unit ... the best cows make the most money and guess what ... the poorest cows make the least money. We rob ourselves when we do not maximize the genetic ability of each cow and then provide her the best opportunity to express that ability. Although we can make it complex, the amount of milk we get out of a cow simply distills down to the equation ... $\text{Performance} = \text{Genetics} + \text{Environment}$. A cow's performance will not be up to par if we do not breed her to have the ability and do not manage her so she has the opportunity.

A useable record system is a must. We cannot manage what we do not measure, and we cannot manage without accurate information. Intuition is what we use to make decisions when we do not have information or the information provided does not funnel down to a logical conclusion. Intuition is important, but we need to put ourselves in a position where we manage by logic not intuition a high percentage of the time. The bottom line is we all need to maintain and use production, breeding and financial records.

Genetic Improvement Is an Attitude

Genetic improvement is a long term process. Success requires planning, some patience and an attitude that genetic improvement is beneficial. To quote an all-around smart person, Dr. Bennett Cassell, Virginia Tech, genetic improvement happens when we (1) "Decide that genetic improvement is beneficial", (2) "Turn to AI and eliminate the use of natural service" and (3) "Practice careful, disciplined sire selection toward economically justifiable goals". We must believe AI is worth the extra effort. If we do not believe, we will not have the sustained commitment required to make AI work.

End Products Pricing

End products pricing is an expression of end product value. Getting the most genetics for your greenbacks first requires an analysis of where you get your greenbacks. What are your end products ... milk ... cheese ... breeding stock ... show cattle ... annual profits? It makes a lot of sense to select genetics which will maximize your end products.

Getting the Most Genetics for Your Greenbacks

Getting the most genetics for your greenbacks has several components: (1) select sires which will maximize dollars from your specific end products, (2) look for value, (3) control inventory, (4) get a high percentage of your heifers and cows pregnant to the sires selected, (5) get a high percentage of the resulting offspring into the herd on time, (6) keep the best ones in the herd and (7) provide the best possible opportunity to maximize the "end products" you want. In other words we need to select the genetics which best fit our situation at the best value, get cows and heifers pregnant to those sires and harvest the genetic potential.

Sire Selection

Using only AI provides a highly preselected group of sires from which to choose. We often get hung up on what exactly is the right sire for a particular cow, and lose sight of the fact that AI sires are already a highly selected population. If we use the sires from that highly selected population which fit our end products, quite frankly we can't be very far off base. Lest you think I am one of those pinko university only breed by the numbers type guys, let me quickly add that I always like to put some weight on PTAgttb. PTAgttb? Yes, PTAgttb, Predicted Transmitting Ability for Go To The Barn. What motivates you to go to the barn on those tough days? What provides that extra incentive when you need it? Whatever it is, that is your PTAgttb and it deserves some consideration.

Selecting sires need not be a complex process. I suggest four steps: (1) select your most important end product and list the sires which maximize that end product, (2) delete the sires which sire traits you want to avoid, (3) select the sires which transmit the traits you want to accentuate from the remaining list and (4) mate specific sires to specific cows if you wish. Who will select the sires? The AI companies have qualified people to do this if you want to hire someone. Programs accessible by personal computer have made the job a lot less time consuming than it used to be if you want to select the sires by yourself. I also suggest you have separate sire lists for heifers, sub-fertile cows and summer. The sires on the sub-fertile cow and summer lists may be the same.

Look For Value

AI is a good value if for no other reason than we have some idea of the result at the time we breed the cow or heifer. In other words, we can use the information available to increase our chance of getting the end products we want.

Of course, we look for value in everything we purchase and AI is not an exception. With AI the best value is not always the semen with the lowest price. It is frugal to look at some kind of return over investment index when selecting sires. Semen Value Index is an index one can use to select sires based on the highest return on semen investment. Semen Value Index = (Herd Management Factor x NM\$) - Actual Semen Cost in \$. The Herd Management Factors to use in this equation are 0.4 for herds with excellent management and fertility, 0.3 for herds with good management and fertility, 0.2 for herds with below average management and fertility, and 0.1 for herds with poor management and fertility.

Using young sires is another way to increase the semen dollar value. Use of young sires has particular merit if they are selected on pedigree index, but do not breed more than 20% of your cows to young sires. Do not breed any heifers to young sires, because you do not have calving ease information. Semen value can often be improved by using sires some would consider marginal on Reliability. Remember, if you are looking at Net Merit, the sires are ranked correctly from top to bottom regardless of their Reliability. Avoid risk by not breeding too many cows to any one sire with marginal Reliability. Young sire programs can also improve semen value by providing price breaks.

Be conservative about using expensive semen in subfertile cows and during the summer if your herd has a summer fertility slump. I would always have sires in the tank which are high PTA_{milk}, inexpensive per unit and from highly fertile sires to use during the summer slump and all year on sub-fertile cows.

Heifer AI is an excellent way to maximize return over semen investment. The most genetically superior female on your farm should be the last heifer calf born from a first calf heifer. Heifers from first calf heifers are 1/4 to 1/3 of all replacements on most farms. You can't afford not to have those replacements because you breed heifers to a beef bull, and you can't afford for daughters of first calf heifers to be genetically inferior because their sire is a

non-descript dairy bull. Heifer AI also increases the genetics received for your greenbacks because heifers have higher conception rates, and fewer cows and calves are lost at first birth when calving ease sires are used on heifers. Make time to AI heifers!

Inventory

Carrying too much semen inventory can be expensive. Buy a little more semen than you will use before the next sire summary, but don't stock up unless you are independently wealthy and want to guess who will be the next hot bull. Semen tank bloat leads to genetic obsolescence, so keep an inventory of what is in your semen tank and clean it out when you need to. Always protect your investment by keeping your liquid nitrogen refrigerator in a clean, dry, visible place which is easy to get to, but not easy to "run into" accidentally.

Get Heifers and Cows Pregnant To the Genetics You Select

What bulls are your cows and heifers actually pregnant to? How many of the heifers and cows on your dairy are actually sired by the bulls you wanted? Many dairymen find that poor reproductive management puts them in a situation where they actually get more cows pregnant to clean-up bulls than they thought. Inefficient heat detection is the major contributing factor in most herds. If you catch 20% of the heats ... start breeding at 60 days after calving and achieve 50% conception rate, by 200 days after calving 21% of your cows have never been seen in heat and 48% are not pregnant. By simply increasing heat detection efficiency to 60%, less than 1% of the herd has not been seen in heat by 200 days post partum and only 8% are not pregnant. This is a dramatic difference due to one management factor ... efficiency of heat detection. The only topic more popular to dairymen than how to get cows pregnant is how to get a stable and high milk price. High conception rates certainly affect the return on each dollar you spend on semen. The purpose of this brief presentation is not to discuss how to get cows pregnant. Suffice it to say that fertility is maximized when a trained inseminator places quality, properly thawed and handled semen into a healthy, vaccinated, nutritionally sound cow at the correct time following a true standing heat. Energy balance clearly influences fertility in high producing cows. Synchronization of estrus and ovulation has a place in managing dairy cattle reproduction and fertility. In addition, using sires with above average daughter pregnancy rate and avoiding sires with low daughter pregnancy rate deserve consideration.

Harvest Genetic Potential

Harvesting genetic potential is of premier importance. As stated earlier ... Performance = Genetics + Environment. The best genetics in the world will not do a thing for you if it cannot be harvested. Do more than keep calves alive ... keep them healthy. Feed quality forages and balanced rations. Prevent mastitis. Pay particular attention to hoof care. Keep the good cows in the herd ... minimize involuntary culling so you can maximize the number of cows which depart your herd when you want and for the reasons you want.