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Finding Value in Genomics

Most months, I have a topic in mind and bring some educational merit to this column. This time, I decided to put on my philosopher hat and attempt to generate some thought. My goal is not to change anyone's mind or current management practices, but rather to shine some light on other perspectives different than what you might already be doing in your herd.

We officially have our single-step EPDs live and running weekly through the BOLT software. If you have read anything that has been published outlining the new system, you've noticed that the genomic impact on EPDs is greater than before. With advanced computing software, it's now easier to incorporate the information collected from studying an animal's genetic makeup, giving us a better indication of their potential for specific traits. After all, an animal's own genetic makeup is what drives their performance, so it makes sense to incorporate that information into our EPDs. The increased role of genomics has spurred interest in genomic testing, but there are several schools of thought on the best method.

For this exercise, pretend that there are 50 head of what you consider ideal Shorthorn cows in a pasture. Every year, these wonderful cows produce exactly 25 excellent bull calves and 25 outstanding heifer calves. You have an extra \$1,000 in your budget, and as much as you might like to put it in the bank, for this exercise it must be spent on genomic testing. You notice the ASA offers the "uLD" genomic test for \$40/head, which would allow you to genomically test 25 of your calves and receive GE-EPDs. How do you decide which 25 to test?

It's becoming more commonplace to see bull sale offerings that have genomically tested the entire offering. Genomically testing your yearling bulls helps develop a better idea of their genetic potential, and your customers appreciate that when making their buying decisions. The tough question is: will the customer place enough value in GE-EPDs to pay a premium for

your bulls? The increased accuracies are great, and knowing how many progeny records genomic testing equates to for a trait alleviates some risk. However, the decision to genomically test bulls has to be backed up by a vote of confidence from your customer's checkbook. Unless you are using a bull in your herd, testing your bulls has more benefit for genetic improvement for the purchaser than it does for you.

Maybe testing heifers is a better idea? Normally, you replace 10-15 of your cows each year. Deciding which half of the heifers stay in the herd is never easy. Perhaps having genomically-enhanced EPDs will help separate the top cut. Genomic information might be handy on selecting the last few replacement candidates, where the margin between keepers and shippers is thin. Over 4 to 5 years, keeping these genomically tested heifers will result in your whole cow herd having GE-EPDs. With better information at your fingertips, you are more informed to make sound mating decisions when producing the next generation of Shorthorns. With the new BOLT system, parents with GE-EPDs have an impact on the EPDs of their progeny as well. Over the life of a cow, that \$40 investment can certainly recoup itself in the added value of producing better calves thanks to the availability of genomic information.

Both schools of thought can pay for the initial costs of genomic testing, and both options offer better information for making selection decisions. The debate boils down to when the value is realized from testing, and who benefits the most in terms of genetic progress. With testing your sale bulls, the monetary value is returned quicker, but doesn't the customer reap the rewards of enhanced genetic information? By testing heifers, the value may not be realized as quickly. The value lies in making better selections of replacements, as well as having GE-EPDs available when breeding your cows. Having a genomically tested cow herd can help you further genetic progress in your operation.

Some of you are thinking about an idea I haven't mentioned yet: testing some bulls and some heifers, but not all of either one. This could certainly be done. However, it's similar to only reporting your heaviest weaning weights. If you don't weigh (or test) all the animals in the group, the best ones don't look as strong when you omit the bottom. You might identify some calves as having some superior genetics, but maybe you don't see the total impact of not having them compared to everyone in the group: the good, the bad, and the ugly.

It's a tale of "Profit vs Progress" when comparing these methods of genomic testing. In an even more perfect world, there would be \$2,000 in the budget and all calves could be tested. How do you decide what method works best for you? Start off by listening to your customers. If they show interest and willingness to pay more for genomically tested bulls, then it's hard not to consider that route. If they're not too keen on the idea, maybe it's more worthwhile to give the ladies in the heifer pen a uLD genomic test at weaning day.

Whatever decision you make in the real world, I hope you consider incorporating genomic testing into your program. If you already have, I hope you have a plan in place that is helping you realize the value of your investment in testing. There's only so much we can discern with our eyes and our scales. Genetics are what make cattle unique, and the ability to have more of that information in hand when breeding them is an advantage. Everyone has different goals and focuses in their herd. However, we all can agree that breeding better cattle, and doing so while making a profit, is a primary goal that we should do whatever we can to achieve. 

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