DNA-Based Technologies for Stocker Cattle Management & Marketing

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Most of the discussion about DNA-based technologies in the cattle industry has been directed at using this tool to supplement EPDs, ultrasound and actual performance data in breeding age animals. Because these tools have evolved to include predictions for a broader scope of traits, there is now an opportunity to use it in other sectors of the beef production chain. While this opportunity is real, the company representatives who market DNA-based selection tools have been guarded in their recommendations for stocker cattle management and marketing. However, as they have time to test and validate their predictions for this type of use, it should become more commonplace.

In very basic terms, these DNA-based technologies evaluate the genetic material of an animal for the presence, absence or quantity of certain genes associated with traits like feed efficiency, tenderness, quality grade or many more. In the early stages, only one or two genes were used to predict each trait but, over the last few years, the companies have added to their tests so that each trait is predicted by analyzing several genes that influence it. This has greatly improved the accuracy and validity of their predictions.

As with any other management or marketing tool, the DNA-based technologies should only be used if it is cost effective and prove valuable in reaching specific goals. A few of the most common goals for stocker operators revolve around average daily gain, health and carcass quality (especially if retained through the feeding phase). Many of the traits that influence reaching these stocker operator goals are predicted in commercially available "profiles" or "panels." But, whether they can be used in a way that improves profit (beyond the added cost) will differ for each operator.

As previously mentioned, these tools are most often used by seedstock breeders. Many commercial cow/calf producers are also using it to enhance conventional genetic predictions and performance records. This is the most logical first step for application in the stocker sector as it relates to sourcing cattle. Find commercial cattlemen that have DNA-based predictions for their bulls and cows. They will likely demand a premium price for this information but it might prove to pay for itself if it can be used to sort the calves into management or marketing groups. Some producers might even have this information on the calves themselves.

Getting the information on the individual calves (as opposed to the dam and sire information) will be even more valuable. Most commercial cow/calf producers would not have this so that cost will fall directly to the stocker operator. This will usually be done after purchasing the calves, limiting it to a sorting and marketing tool.

Next, a sorting or marketing plan should be developed that will capture full benefit of the tool. For example sorting the group according to feed efficiency predictions could allow for tailored supplementation. A more complex plan for operators that retain ownership through the feeding phase might include sorting high carcass potential calves into groups that will be marketed on a value-based grid and lower carcass potential calves into groups that will be marketed live. Or, calves predicted to be less feed efficient could be marketed as feeders. It should be noted that these types of marketing decisions could be viewed as less than ethical because it provides the potential to "dump" lower performing calves on unsuspecting buyers. To the contrary, the argument can be made that it is no different than using production records or EPDs to make similar decisions. Moreover, using advanced management tools has historically improved the overall health of the industry and quality of the end product.

Another marketing approach might be to advertise the group average for each trait when selling private treaty or at auction. Assuming that there are not a few individual calves that pull the average up or down, this will give potential buyers an idea of how the group will perform or how they should market them after the feeding phase.

With regard to health, some profiles identify BVD-PI calves that can affect the performance of the entire group. These calves should be harvested or destroyed and, in some states, an indemnity can be collected. It would also be a good idea to notify the seller (if known) so they can test the individual cow, or their entire herd, for persistent infections of BVD.

Regardless of whether a stocker operator chooses to incorporate DNA-based technologies to reach their production goals, a working knowledge of the basic principles will be important as it becomes more widely used in other sectors of the industry. Company representatives deal with the technology every day and are extremely helpful in explaining their specific profile or panel of trait predictors and cost. Extension Specialists in beef cattle production or livestock economics should also be helpful in making the ultimate decision on whether these tools are economical in a specific production or marketing scheme.