



Have It Your Way

The future of medicine may be custom-made for today's cattlemen with customizable vaccines.

by *Adrian Austin*

Change can be scary, but it can also assist in progress. In today's beef cattle industry, producers must always be on the lookout for ways to increase efficiency while caring for their herd health in a safe, ethical manner. With the development of autogenous vaccines, cattlemen have the potential to excel with both healthy and efficient herds. In this case, change may be the way the cattle industry moves into a healthier, more successful future.

For many the question arises as to what autogenous or custom-made vaccines truly are. The word autogenous is used to reference something produced within a body. With autogenous vaccines, a product is being created from specific pathogens present within a herd. These customizable vaccines can be used in hopes the herd will be immunized from these certain pathogens in the future.

Randy Shirbroun, Newport Laboratories technical services veterinarian, shares an example of how to understand the concept behind custom-made vaccines. "Newport focuses on autogenous vaccines so that if a disease is diagnosed that isn't capable of being addressed by the current commercial vaccines that are off the shelf, we can

herd and reaching out to a veterinarian. After recognizing a frequent issue, cattlemen should work with their veterinarian and plan to take samples for the diagnostic lab to distinguish what organisms are present within the sample.

In Shirbroun's mind, after the sample has been taken, the fun part comes into play. "If we find a bug in the sample that can't be addressed by the commercial vaccines, we could take that culture and make a vaccine from it to be used to address the issue in that herd," he adds.

While all commercial vaccines on the market are tested for effectiveness on the initial pathogen strain they are designed to protect against, there is no way to control when an irregular or new strain may emerge. Autogenous vaccines provide an innovative treatment option to address new viruses or bacteria present in a cattleman's herd.

However, Shirbroun shares a few pieces of information he says could be a downfall in some producers' minds. Unlike commercial vaccines tested for effectiveness before being released, autonomous products do not have efficacy studies. Custom-made vaccines require case-by-case diagnoses specific to certain situations, rather than general testing applied to commercial products.

The price tag

Contrary to preconceived notions, cost of autogenous vaccines does not have to be a drawback for producers. Regarding the expense that goes with these products and how it may affect a cattleman's mindset, Shirbroun puts it into perspective.

"It's a good question that always comes up because it's a custom-made product," he says. "Custom-made boots are more expensive. Custom-made hats are more expensive. Custom-made saddles are really expensive."

Generally speaking, he says his company prices its product and then follows United States Department of Agriculture (USDA) regulations by selling the product to the veterinarian, who then, in turn, sells it to his or her client. Through this process, the price itself is even customized. Autonomous vaccine price points vary depending on the number of doses. When a greater amount of product is created, the cost is less per dose. Collectively, Shirbroun says the cost will likely end up being no greater than commercial vaccines and often is significantly less.

"I think cost is a common objection at first," Shirbroun adds. "Producers say they can't afford to have a custom-made product because they don't have enough cattle." Yet, that is where another component of pricing becomes relevant. Producers with smaller herds may not be confident custom-made products are justifiable for their herd; however, through USDA regulations, veterinarians can make autonomous vaccines to be used in multiple herds.

If certain pathogens are generating illness in several herds within a veterinarian's domain, USDA guidelines leave it up to the discretion of the veterinarian to distribute autogenous products. "If a vet has made a vaccine for a couple of clients in the northern part of the county in his or her practice area, but have some other smaller herds in a different part of the county suffering from the same problem, the vet can solve both cases," Shirbroun says. "By completing the paperwork for USDA, and it's a pretty minor thing, then smaller herds could use that vaccine also. It allows the guy or gal with 50 head of cows to play with the guy or gal that has a thousand head."

Despite concerns about the price point, healthy, thriving cattle should always be the focus of an operation. "No matter what it costs, if you're paying for something and it's not working, that's too much money," Shirbroun says. "But if you could pay the same amount or less for something that actually works, I don't have to be a math major to figure that one out." **HW**

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make custom vaccines specifically for the problem," Shirbroun says.

According to Shirbroun, autogenous vaccines started growing in popularity roughly five years ago, although some laboratories have been developing custom vaccines for a longer period of time. The reasoning behind this trend is simple. "Everybody's threshold, their pain threshold so to speak, as a producer is different," he says. "Producers have to establish how much loss or struggle they are going to tolerate before looking for an alternative option." Shirbroun goes on to emphasize due to the relatively simple, inexpensive process behind using autonomous vaccines, more cattlemen are increasingly willing to take the first step.

The process

For cattlemen interested in using custom-made vaccines, the initial step is recognizing they have a recurring illness within their

The other downfall is autogenous vaccines cannot provide immediate solutions. After a problem has been identified and the laboratory has possession of the necessary samples, the production time for custom vaccines will take between four to six weeks for bacterins, whereas viral vaccines can take even longer to produce, ranging from eight to ten weeks.

"Even though it's not immediate gratification, in many cases, we are doing that legwork early for next year," Shirbroun says. "We're making vaccines, so it's a preventative thing — not a treatment thing. The veterinarian can do the leg work after a producer recognizes the problem." The ultimate goal of a custom-made vaccine is creating a specific treatment to have on hand for whenever it is needed, with the option to make tweaks and updates to the vaccine's make-up whenever it may be necessary.