



In drought-stressed herds, the problem may begin with the failure of passive immunity transfer from cow to calf through colostrum. [PHOTO BY SHAUNA ROSE HERMEL]

In the wake of drought

Evaluate Herd Health

Story by
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Some folks can remember when a rancher's arsenal of animal health products was simple — mainly because the choices were few. Discounting home remedies, penicillin, sulfa pills or oxytetracycline were used for treating most infections. Conscientious cattlemen had their replacement females vaccinated for Bang's disease (brucellosis), but guarding the calf crop against black-leg was the primary herd health concern. Often, the worry over "shipping fever" fell to stocker and feedlot operators. And their tools for immunization and treatment were limited in number and efficacy.

By comparison, veterinary science now offers new and more specific antibiotic treatments, as well as technologically advanced vaccines for more safe and effective immunizations against profit-robbing diseases.

You would think that the incidence of cattle deaths and reduced performance due to disease would be in decline. Not so, says veterinarian Tom Shelton, technical advisor for Intervet Animal Health.

"Despite the scientific advancements, there has been little headway in management of bovine animal health," Shelton adds. "We need to integrate, medically, among production segments. Instead of inflicting everything on calves at weaning time,

we need to initiate health programs earlier."

Focus on calf health

In the wake of drought, and especially in regions suffering from multiple dry years, the impact on animal health may be manifested most among calves entering the backgrounding or finishing phase of production. Sure, the stress of drought shows on the entire cow herd, affecting overall health and reproductive rates in particular, but Shelton claims a significant cost is exacted from the effects of poor health and performance among calves out of drought-stressed cows.

According to Shelton, a five-year study of feedlot mortality, involving 21.8 million cattle in 121 feedlots, showed that most deaths occurred during the first 45 days in the feedlot and more than half of those deaths resulted from respiratory disease. Shelton attributes this to inadequate immunity against respiratory viruses, including infectious bovine rhinotracheitis (IBR); bovine viral diarrhea (BVD) types 1 and 2; bovine respiratory syncytial virus (BRSV); and parainfluenza-3 virus (PI₃).

Some of the fault may lie with improper handling or administration of vaccines. However, a lack of adequate immunity also may occur when the vaccination protocol is not initiated early enough, or because stress compromised the process.

Initial breakdown

In drought-stressed herds, the problem may begin with the failure of passive immunity transfer from cow to calf through colostrum. Depending on the level of stress, Shelton says, insufficient transfer of colostrum antibodies may affect 15% to 68% of calves. He advises producers to consider vaccinating cows, first at pregnancy-check time and again two to three weeks prior to calving, to increase colostrum antibody levels. Producers should consult their veterinarians regarding a product suited to their area. Shelton also advocates, in certain situations, giving calves their first viral vaccinations at a very young age.

"Virologists disagree regarding the ability to effectively vaccinate calves aged one to three weeks. Some argue that maternal antibodies will interfere with the vaccine. But I believe we can vaccinate as early as 10 days of age and get relatively good response in calves that didn't get sufficient passive transfer," Shelton states.

"Certainly, we need to start immunizing calves earlier than we have in the past — at least by branding time, then follow up at preweaning," he adds. "Early weaning is a definite benefit in a drought situation and all the more reason to start vaccinating calves at a younger age."

Veterinarian Tom Noffsinger agrees that calf health and performance depend heavily on passive transfer of immunity. Noffsinger and three colleagues practice out of Twin Forks Veterinary Clinic, at Benkelman, Neb., dividing their time between cow-calf and feedlot clients in southwestern Nebraska, northwestern Kansas and eastern Colorado. According to Noffsinger, the transfer of colostrum antibodies during the first few hours after birth sets the stage for what happens throughout an animal's lifetime. That is true regardless of environmental conditions, but drought brings the challenge of added stress.

Good cow management can help ease the ill effects, so Noffsinger advises a well-planned heifer development program, including appropriate vaccinations. He also recommends routine vaccination for viral respiratory diseases when cows are open (prior to breeding). Noffsinger admits that vaccinating very young calves may be appropriate in certain situations. However, as a routine practice, he prefers to initiate vaccination for viral diseases at branding.

"Of all the feedlot cattle we have observed, calves vaccinated at branding and again at preweaning, and having adequate trace mineral nutrition, appear to have superior immunity," he explains. "But a vaccination program is adjunct to nutrition."

Nutritional base

Drought-stricken producers often have to make tough choices, trying to decide whether to reduce herd numbers, or to find feed. Noffsinger says some ranchers in his area have chosen to put more cultivated land into forage production or to bring in supplies for the cattle on hand. Some have moved cattle to where the feed is. In any case, Noffsinger urges cattlemen to test forage nutrient content and to supplement accordingly.

"The positive aspect of drought is that it makes us better managers. It has forced producers to think about the quality as well as the quantity of feed resources, and made them more cognizant of cow body condition," Noffsinger says.

To get a healthy calf, you have to have a healthy mother cow. And even the best vaccination program won't replace sound nutrition. Noffsinger says a body condition score (BCS) of at least 5 is particularly important during the critical time starting 60 days prior to calving and extending throughout lactation. While it is better to have cows gaining weight by calving time, during times of little rain and little money, it is important to at least maintain that minimum BCS.

"Trace minerals, including copper, zinc and selenium, as well as vitamins, play roles in immune status and good general health, but if the cattle don't receive adequate protein and energy, it's foolish to spend a lot of money on some fancy mineral package. I've been asked if there is some low-volume, strategic product that producers can feed. The answer is 'no.' What cattle need is balanced nutrition," Noffsinger says.

"The drought has taught us that early weaning — even with 90-day-old calves — can be an efficient use of resources. And the calves can perform well when we really manage nutrition and health and use good handling practices that minimize stress. Everything we can do to minimize maternal stress will benefit the calf, all the way through production."