

Preventing Clostridial Disease in Bison: By Roy Lewis DVM

I have encountered several clostridial (blackleg) outbreaks in bison over the years. I will use the term blackleg to refer to most of the clostridial diseases to which bison are susceptible even though only one specific one causes the true blackleg.

Most clostridial diseases have similar clinical signs. These signs include severe depression, high fevers and lameness and if its true blackleg the muscles in the leg or elsewhere such as the heart diaphragm or tongue will be affected. Death is very rapid and often within twenty-four hours of any clinical signs. Most bison producers will find an animal dead.

With another clostridial disease called redwater (because of the red colored urine), survival may be for a few days. All clostridial diseases are invariably fatal. Contrary to the popular belief that mature bison cannot get blackleg - that is "NOT" true.

I don't see as many outbreaks with bison mainly due to fewer bison than cattle in our area. What I do know is that mature bison do get sick and die with this disease. That is unfortunate given that there is a vaccine available and that vaccination has proven over the years to be 95 – 100% protective. Producers can use cattle vaccine at the same dose for their bison. This is considered using it as Extra Label Drug Use (ELDU) in Canada and I believe it is used under the minor species status in the United States. It is best to check with your herd veterinarian and obtain their specific vaccine recommendation. I use as broad a spectrum vaccine as available as there is always the possibility of some of the other clostridial diseases such as tetanus, septicum and as mentioned hemolyticum (redwater) affecting the bison. When cows are vaccinated they then pass this protection to the calves through their colostrum for the first few months of life.

The vaccines are generally 7-way to 9-way vaccines. This means the vaccines protect bison against seven to nine different clostridial organisms. All vaccines are given subcutaneously (meaning under the skin) in the neck so they are best administered when you are processing bison. If you use a short needle and come in at an angle you will be subcutaneous. This also eliminates any muscle damage which shows up later in the meat. Utilize the access panels most of the bison chutes have. I prefer to use the one handed subcutaneous technique that does not involve tenting the skin. With bison sometimes jumping up and down even with head restraint, you are less likely to get injured.

Normally with cattle, if they are not vaccinated as calves, after two months they become susceptible. While this is not practical in the bison industry to vaccinate young calves, there must be good colostrum immunity transfer as I have not seen a case in young calves. As bison generally run on extensive ranges, sudden deaths in calves are seldom found to autopsy. Also with calves born in May or June generally, their grazing begins later in the summer.

Your best option is to vaccinate calves at weaning and the cows whenever possible. The immunity from the clostridial diseases may last several years (in humans a tetanus shot every ten years). My recommendation is once a bison has been vaccinated twice, vaccinate the cows whenever they are being handled. This may be every two to three years in some herds as some producers do nothing more than separate cows at weaning and do not handle them. When handling the cow, vaccination and deworming is a good management practice. Don't forget to do your bulls when semen testing for instance.

The probability of picking up the clostridial (blackleg like) organisms increases if soil disturbances have occurred such as ditching or excavating. Areas where bison dust themselves are another source of infection. In dry years swampier areas may be pastured which may give bison access to exposed spores. This transmission is very similar to what happens with anthrax. Like anthrax these spores may remain dormant in the soil for decades so even though you may never have had or never heard of blackleg organisms in the area affecting either bison or cattle, it is still a very good idea to vaccinate when you can. Anytime there is bruising such as what happens with processing, sorting, vaccinating increases the odds of the clostridial diseases as well.

When handling vaccine keep it from overheating and from freezing. Since most weaning happens in late fall or winter, keep an insulated warm pack if the day is cold. Freezing destroys the vaccine and renders it ineffective. Some use an in-car heater or warming device to make sure the vaccine does not freeze. Again give the amount recommended for cattle as there are no vaccines available that have bison on the label. If you don't think you have given the full dose for any reason, repeat it. Feedlots may use other vaccines to try and prevent respiratory disease but consult with your veterinarian for their recommendations.

The clostridial disease vaccines should be given on every ranch. Certain areas definitely have a higher incidence than others. You may sell your bison to another ranch or feedlot that could be in a more endemic area. At least you have the peace of mind they are vaccinated leaving your premise.

Remember to vaccinate when possible. With cattle the standard slaughter withdrawal is 21 days. For bison, add a few extra days to be on the safe side. Withdrawal times are the greatest concern when you are pregnancy checking and vaccinating for clostridial disease and deworming. Make sure your veterinarian gives the okay they are pregnant before you deworm and vaccinate in case you are shipping the open cows. If purchasing new breeding stock with an unknown history be safe and vaccinate, as the cost of the vaccine is inexpensive, readily available, and immunity is very good. Booster the vaccine when possible and continue to do it when bison are processed in the late fall or winter. When in doubt vaccinate and any other procedure that is necessary in raising healthy bison. Vaccinating is like insurance and prevention is what we want as treatment against clostridial diseases is invariably not successful.