# The Vaccination Schedule for Sheep

—Ulf Kintzel

*Photos by Author*

There are quite a few vaccines available to protect sheep against various diseases, and for somebody new to raising sheep I reckon it can be rather confusing which vaccinations to use. In fact, aside from being asked about my deworming protocol, the question about my vaccination schedule is one of the more frequent ones. So I figured it is time to put my answers into an article.

A common disease and the one easiest to protect against is enterotoxemia. That is a rather fancy word you might not have heard before, but you might have heard of Overeating Disease or Sudden Death Disease. These are all the same. In lambs, this disease, caused by the same bacterium but a different type, causes Pulpy Kidney Disease. In general, enterotoxemia is caused by a bacterium called *Clostridium perfringens,* Types C and D. The bacteria are always present in the lower digestive system and need sugars and starch to thrive. Those two are usually pretty much digested in the upper part of the digestive system. At times when excess sugars and starch(i.e. rich spring pasture or heavy grain feeding) pass through to the bacteria, they will grow excessively. This excessive growth allows the bacteria to produce a lethal toxin, which is passed on to the sheep's bloodstream and causes the disease.

Both in lambs and in ewes the disease has several things in common. 1. Once the disease occurs and the animal shows symptoms, there is little to nothing you can do to cure it. You can only do something for the animals which are affected but do not show symptoms yet. 2. The symptoms last only a brief while, and then death occurs. In fact, symptoms are easily overlooked because of their brevity. Hence the name "sudden death" disease. 3. It always takes the best animals and never the ones of the least value in your flock. This is because the bacterium, which depends on lots of nutrition to rapidly multiply, has far more nutritious foodstuff in a large sheep than in a small, narrow one.

Enterotoxemia in both sheep and lambs is mostly

associated with grain-fed sheep because grain is more nutrient-dense than forage, especially when it comes to starch, which is associated with grains. However, the better a job you do raising your sheep on pasture, the more likely it is your sheep can be affected as well. The time of greatest risk for adult sheep is early spring, usually May, when the grass is highest in nutrients, particularly sugars, and is still lacking fiber. The risk for grass-fed lambs is when they have a high intake on milk while nursing. In grain-fed lambs the risk is always high when large amounts of grain are consumed.

I used to not vaccinate at all. Then my sheep got more voluminous and deeper, my grazing system got better managed, my pasture got richer. And then, one spring, it caught up with me. I lost twelve percent of my best ewes to enterotoxemia. It took a while to figure it out. I didn't know. My vet wasn't certain. The lab results at Cornell University came back inconclusive. But we narrowed it down to two possibilities and I went ahead and vaccinated against enterotoxemia. No more sheep died. Needless to say, I changed my mind on vaccinating the ewes against this disease. The vaccine comes under different names. The most common brand name is Bar-Vac, which many farm stores carry. The actual vaccine against enterotoxemia will say type C & D, but most farm stores will carry a version that also has the vaccine against the related tetanus bacterium available. Therefore, the vaccine will say CD/T, with the T standing for tetanus. Tetanus bacterium thrives in horse manure, and since I have a great number of Amish customers and a customer requested it, I included the tetanus vaccine in my vaccination protocol for any breeding stock I sell. The cost of the vaccination is not a major expense (about 40 cents per animal), so one can easily include it.

I vaccinate the ewes when I prepare them for lambing. It is an easy task when I have them sitting down already to cut their hoofs. Bar-Vac CD/T is given subcutaneously (SQ), which means under the skin. Make sure you don't give the injection into the muscle (IM), since this will create an abscess. When the ewe is set down for hoof cutting, an easy place to vaccinate SQ is the armpit, where you will find lots of loose skin with wool or hair cover. Ewes or lambs that are vaccinated for the first time are supposed to get a booster shot two to three weeks after the initial vaccination. I never have done that and have not suffered any negative consequences. However, I do vaccinate once annually thereafter. The lambs that will be born will get the antibodies through the milk of their mothers. I don't vaccinate them. Then, when breeding stock is sold at about two and a half to three months of age, those ewe and ram lambs are also vaccinated just before they leave the farm.

The vaccine is pretty close to 100 percent effective. A few years ago I did have a sheep dying of what I assumed was enterotoxemia. If she was indeed properly vaccinated (sometimes you miss when you vaccinate) is not known. If I assume it was enterotoxemia and the sheep was vaccinated, losing one sheep in a decade out of thousands vaccinated is not a bad thing. To tell the complete story I should mention that I also had two lambs in the past decade dying of enterotoxemia. In one case I vaccinated all the other lambs. They were all still in the barn since they were winter-born lambs, so it was easy. In the other case I gambled and did nothing, since vaccinating all lambs was not practical because grazing had started and the flock was at its largest number and far away from the barn and chute. No other lamb died.

By now you might have noticed that my article about a vaccination protocol has turned into an article about enterotoxemia and you might wonder when I finally move on to the other vaccines I use. Well, there are no other vaccinations I apply. Bar-Vac CD/T is all I use. I will, however, mention a few more available vaccines and explain why I don't use them.

There is vaccination available against Chlamydial or Enzootic abortion. This is a bacterium that causes abortion in sheep during late gestation. Lambs that are born alive and are affected are often weak—too weak to nurse. The disease can be transmitted by an affected ram when he breeds the ewes or the bacterium can be picked up off the ground, especially if one feeds in the winter off the ground. It can be an economic factor, but in most cases it is the young sheep that are affected and the bacterium leads to an abortion. After that, the sheep builds immunity and will never contract the disease again. If you feed hay often on the ground in the winter as I do you may pick it up now and then. If it is the ram that is the source, you can easily cure it with a shot of LA-200. But be careful; antibiotic shots will make the ram infertile for a little while. So do it well in advance of breeding season if you must. Another disease that is caused by a bacterium that causes abortion in sheep is called Vibriosis. There is a vaccine against it too.

*For the small flock owner a good time to vaccinate is when the hoofs are trimmed and the sheep are set down already. The loose skin in the armpit is an easy vaccination spot.*

Orf or sore mouth is an extremely common disease in sheep and I am unaware of any flocks that aren't affected by it. Flock owners are sometimes unaware that they have it and only realize that they do when I describe it. In some years it can come to a rather bad outbreak and very young suckling lambs might need to be treated if they cannot nurse. Some older lambs and ewes might look gruesome for a little while, yet it does not seem to bother them much. Then it will heal up and the sheep will build semi-immunity, which means the immunity will wear off over a number of years and it will come to a new outbreak. In Germany we used to say that you get an outbreak every seven years. Given the rather benign impact the disease has on my flock I choose inaction, but observe any young lamb that might be affected. However, if sheep have other underlying problems, the disease can have a great impact, like any benign disease can have when the health and nutritional status are already compromised.

Another vaccination often recommended is against Caseous lymphadenitis, which is commonly referred to as CL (probably because of the fancy name that after so many years I still can't pronounce out loud). A common sign of the disease are abscesses near lymph nodes. However, there is also an internal version of the disease, which can only be detected if a carcass is inspected. Comparatively speaking, the disease is not highly contagious. The greatest risk occurs during shearing when such an abscess is accidentally cut open. Other sheep that have open wounds from shearing will offer the bacteria an easy access point. Many years ago, now and then I had a sheep that could be suspected of CL and I simply culled such a sheep. Since a great many of my sheep are custom-butchered and individually inspected by a USDA inspector, with no internal organs ever being condemned, I have to assume my flock is free of the disease. I have never considered using this vaccine. Your viewpoint may be a different one if you are battling this disease.

Before my article comes to an end, I would like to make sure that my position when it comes to vaccines is well understood. Firstly, I don't want to come across as somebody who is anti-vaccination, which, I am afraid, my article may convey. I am not. I am in fact in favor of good science. Unlike early vaccines, today's vaccines are relatively safe. My wife and I are vaccinated and so are our children. However, that does not mean I have to jump to vaccinate against every possible disease in my sheep and goats. I weigh the risk. Economics plays a role here. In the case of enterotoxemia, I find the risk of not vaccinating too high. In all other cases I have not found the risk high enough to vaccinate. In fact, I often study the recommendations for many vaccinations while these diseases are absent in my flock, in some cases always have been absent, or where the disease is too benign to vaccinate against it. Likewise, I am more than willing to reconsider any of my decisions should any disease become a problem and a vaccine is available. I think the decision must be made by every individual flock owner. My article is not a recommendation. It is an attempt to put diseases and available vaccinations into perspective, based on my 30-some years of experience, no more, no less. Lastly, my article does not attempt to provide a comprehensive list of all diseases. I picked diseases I am familiar with and where I know vaccinations are available and are often recommended by agricultural extension services and their specialists. That in turn leads to confusion and uncertainty among many inexperienced flock owners, triggering many questions. These are the folks for whom I wrote this article.

*Ulf owns and operates White Clover Sheep Farm and breeds and raises grass-fed White Dorper sheep and Kiko goats without any grain feeding and offers breeding stock suitable for grazing. He is a native of Germany and lives in the US since 1995. He farms in the Finger Lakes area in upstate New York. His website address is www.whitecloversheepfarm.com. He can be reached by e-mail at ulf@whitecloversheepfarm.com or by phone at 585-554-3313.*