Getting the Most from Vaccinations

By Iain Richards, XLVets

Sheep vaccines have been available since the 1930's, and it could be assumed that we are using them routinely and well. However, there is evidence that their correct use has become neglected. The production of immunity in any animal is a complex process that requires a healthy animal and correct timing of primary courses and boosters.

At its simplest, immunity is the result of the body producing antibodies that will counter the infection (or toxin produced by the infection). Repeated exposure is required to maintain natural immunity and boosters (typically yearly) mimic this natural exposure. Some diseases, for example Pasteurella or Footrot, can require boosters immediately before the risk period. There are many aspects to consider for successful vaccination, which are discussed in more detail below:

Storage

Most vaccines are sensitive to temperature so when you are collecting vaccine, use a coolbox and take it home directly to maintain the "cold chain". Even a few minutes at a warm temperature may inactivate your vaccine. Using the vaccine within the specified timeframe is equally important – particularly the stated time to use within, from when first opened. This should be remembered when planning any vaccination sessions.

Case example: a flock was being vaccinated on a dull, cool day, but the sun broke through whilst vaccinating the last group. In this short time the vaccine warmed up, became inactive, which resulted in most of ewes in the last group to be vaccinated aborting.

Injection Technique

A good technique, with clean functioning equipment is vital to avoid infection at the inoculation site. Multi-dose guns save a lot of effort and automatic sterilising systems, such as Sterimatic™ are simple to use and inexpensive compared with the damage that can result from an infection.

Health

Good sheep health, along with adequate nutrition and a fully functioning liver are vital for vaccines to be effective. Fluke can be a particular problem; as well as direct liver damage as a result of fluke infection; fluke can also affect a sheep's ability to create a response to a vaccine.

Vaccines produce a 'Type 1' immunity and Fluke a 'Type 2', so if there is a Type 2 response, then the Type 1 response is reduced, or absent. Therefore, with a moderate to heavy fluke burden, the vaccine will not work as well as it should. With the rise in fluke, this has to be considered in any vaccination programme.

Stress

Stress triggers a rise in the body's own steroids, which can depress the immune system. Vaccinating at weaning is convenient for us, but it causes great stress to the sheep. So although it requires extra handling, vaccinating a week before or a week after weaning will be of benefit.

Timing

Precise timing is important and will vary according to the product used and this information should form part of your regularly updated health plan.

Ewes: pregnant ewes should be given a booster for Clostridial disease and Pasteurella just prior to lambing. Ideally, this needs to be about four weeks before lambing so that enough antibodies are available in the colostrum to protect the

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lamb. However, if you have an extended lambing period, it might be wiser to split the timing of this dose, otherwise some ewes will be vaccinated too early and some too late.

Lambs: typically vaccinations should be done at 12 weeks of age, followed by a second dose 4-6 weeks later. However, if Pasteurella is a problem, lambs may need vaccinating from about four weeks old. The timing of these doses relates to how long the antibodies from the colostrum last in the lamb. Death from pulpy kidney is common in lambs that had no vaccination at about 10-12 weeks of age.

Boosters: if fat lambs are sold before October, they are not likely to need a booster. However, if they are kept and particularly if they are either housed or moved to winter grazing, then using a booster for Pasteurella prior to this is a sensible plan. There is a regular rise in pneumonia caused by Biberstenia trehalosi in these months, so it is worth discussing this with your vet.

Replacements: for sheep put to the tup in the year they are born; they should get a booster with the rest of the ewes prior to lambing. This will be within 12 months of their first course and all is well. However, if they breed the following season, they will need a booster dose a year after their last injection.

It is not uncommon for these replacements to miss this dose in the late summer/early autumn, but be included with the ewes before lambing. However, this means that there has been a gap in their immunity, so they will not produce a good response and their colostrum will contain fewer antibodies. Therefore it is probably easier to give these lambs a booster at the same time as the ewe flock even though they are not lambing themselves that year.

Tups: don't forget the big lads! This is especially true if they are kept away from the main holding.

Bought-in sheep: it is common for farmers to refer to bought-in sheep as being "in the system" for the clostridial vaccines. This can be misleading so if in any doubt, it's always best to start again; the "extra" boosters will do no harm.

Other vaccines

Abortion vaccines must be given at least four weeks before mating as they can cause a high temperature that suppresses ovulation. There is some evidence of the Chlamydophila vaccine causing abortions, but these cases are unusual and the vaccines still offer the best protection against the commonest form of abortion.

The louping ill vaccine is still effective against this disease, although its availability can be a bit of a problem. Finally, footrot vaccines; they have been around for a while and are getting more attention as our understanding of footrot improves. Their use should form part of a specific lameness plan.

Planning

The variety of diseases that can be vaccinated for means that several vaccines can be in use during the year. It's vital that the timing of vaccination is planned carefully if the best use is to be made of these valuable and cost effective medicines.

XLVets is a group of farm animal committed vet practices that work together, alongside commercial research and manufacturing companies. They aim to share best practice on advice and disease-prevention initiatives. ❑

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