

Vaccinating your flock against clostridia and pasteurella

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In sheep production some losses are avoidable and some are not. One area where flock management can have a huge effect is by safeguarding against clostridia and pasteurella disease with an effective vaccination programme.

At the 2016 National Sheep Conference last February, William Fitzgerald from the DAFM Regional Veterinary Laboratory in Limerick outlined the benefits and pitfalls of clostridial and pasteurella vaccination (full paper available at: <https://www.teagasc.ie/media/website/publications/2016/Sheep-Conference-Booklet-2016.pdf>). Let's revisit some of the key points.

Both clostridia and pasteurella are families of bacteria. There are a number of species from these families prevalent in Ireland and which can cause fatal conditions in stock. Clostridia bacteria are present on every farm, in the environment and the animals themselves. They most commonly arise on farms in diseases such as pulpy kidney, blackleg, Braxy and Black's Disease.

Conditions such as *Clostridium Sordellii* are relatively new to many farms and seem to be more prevalent in certain geographic regions. Similarly, Pasteurella bacteria will be present in flocks; however the incidence of clinical conditions varies between flocks due to individual farm management.

What vaccines are available?

There are a number of different vaccines available through stockists on the Irish market. Not all of these offer the same protection. To start with the clostridial vaccines, currently available products will cover between four and 10 different species/toxins of clostridia. Among pasteurella vaccines there are two combination

products available (ie they also cover some of the clostridial strains) and one standalone pasteurella vaccine.

So which product do you pick for your farm?

The best practice is to consult your vet and use previous farm history when making the decision on what product is best for your own farming situation. However, as a rule of thumb, it is better to be safe than sorry, so opting for the most protection, ie using a product or combination of products that covers the most strains may be the best strategy in the long term.

How to use vaccines

•Administration: In all cases, farmers need to follow manufacturers' instructions carefully in terms of product storage and correct administration. In most cases, an automatic vaccinator gun is recommended as it makes the process easier.

Most products are administered via a 1ml to 2ml dose (product dependant: read data sheet) given by subcutaneous injection in the loose skin on the upper side of the neck. Cleanliness is essential throughout the process. It is generally not recommended to conduct vaccinations on sheep with wet fleeces.

•Primary vaccination: Each animal has to complete a full primary course of vaccination. This requires two doses given four to six weeks apart (read manufacturers' instructions). This is often one of the areas that is not done correctly at farm level.

•Immunity: Onset of immunity will not occur until two weeks after the primary vaccination has been completed. Active immunity (ie in those that have received the full course) is reported to last up to 12 months.

•Passive immunity: This is the transfer of maternal immunity to newborn offspring that occurs via colostrum (provided that the ewe has been vaccinated four to six weeks pre lambing). The duration of passive immunity varies, with reports of two



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to 12 weeks, depending on disease species and product (see manufacturer's data sheet). As passive immunity declines, lambs will need to be enrolled on a vaccination programme, as outlined above, to provide cover.

- **Annual booster:** Once the primary vaccination course has been completed, an annual booster needs to be administered within a 12-month period to facilitate re-vaccination. In addition to the ewe flock, it is important not to forget to give the rams their annual booster to afford them protection too.

- **Timing:** The primary vaccination course requires two shots given four to six weeks apart.

In the case of pasteurella for high-risk farms – based on previous experience, a booster shot may need to be administered two to three weeks prior to high risk periods (eg ewes pre-tupping).

To facilitate the transfer of passive immunity from in-lamb ewes, the primary course and/or annual booster needs to be given at the correct time.

There is slight variation between products with ranges of between eight to two weeks or six to four weeks pre-lambing, so read the guidelines of your chosen product carefully. In addition, farmers with split lambing flocks may need to consider vaccinating batches on separate dates to ensure that they fall within the recommended vaccination window.

In young lambs, it is recommended that they are at least two to three weeks old before administering vaccines (product dependent) to avoid complications with immuno-competence of maternal immunity.

For the coming weeks

As young animals have been shown to be the highest risk category for losses associated with clostridial disease, equipping them with necessary antibodies via passive immunity in early life is an essential tool to reduce losses.

Therefore, in the coming weeks, for midseason lambing flocks it is important to firstly ensure the correct vac-

ination procedure has been followed for the in-lamb ewe flock.

It is also vital that adequate ewe nutrition is provided to ensure sufficient colostrum production at lambing.

Lambs will need to receive antibodies via colostrum within the first 24 hours of life. Where a ewe has insufficient colostrum, many will opt for an artificial colostrum supplement.

Although this will provide a valuable substitute for the lamb's nutritional needs, it will not provide the requisite antibody transfer needed to safeguard against clostridial and pasteurella disease. In this scenario, it is important that the lamb receives colostrum from another freshly lambed ewe from within the flock that has completed the vaccination programme.

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