

Tips to ensure effective vaccination

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Vaccination is a cornerstone of preventative medicine and flock health control and has allowed farmers to significantly improve the health of their flocks, reducing losses from a wide range of infectious diseases. But what is a vaccine?



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Whenever an animal is infected by a foreign organism (antigen) it is either overwhelmed by the infection, killing the animal, or an immune response is mounted to eliminate and kill the organism. This immune response involves molecules called antibodies. The role of antibody is to recognise foreign agents and attract the attention of the immune system to home in and kill the invading organisms. This is known as the antibody/antigen response.

Vaccine types

Vaccines contain either killed forms of an infectious agent or live (attenuated or 'weakened') agents with the aim of inducing a protective response without causing disease to develop. It should be noted that some live vaccines will cause mild clinical signs of disease in some animals. Some vaccines also contain an adjuvant, a chemical designed to irritate the immune system and alert it to the presence of the vaccine antigen and

prompt a much stronger immune response.

Studies have shown that even in flocks with identical husbandry and ages the response to vaccines varies significantly within groups of animals. This is due to individual animals mounting differing responses to invading pathogenic organisms.

By vaccinating whole populations of animals those sheep which do not develop such a strong immunity are protected to some degree by the strength of the overall flock immunity following vaccination, significantly reducing the chance of a disease outbreak. But it must be recognised that even when strong immunity exists (natural or vaccine induced) an overwhelming infection can still break through.

Maternal immunity

Certain vaccinations are administered to pregnant ewes in order to pass on protective immunity to their lambs – so called Maternally Derived Antibody (MDA) – helping to guard against a range of neonatal lamb diseases, chiefly the clostridial infections. For these vaccines to be successful the lambs must receive adequate colostrum as

soon as possible after birth.

Vaccines play a vital part in optimising flock health, but to maximise their potential it is important for both vets and farmers to read the small print and pay attention to specific storage and administration instructions. A yearly flock health plan or equivalent can be an excellent point of contact between vets and farmers to discuss the different vaccination protocols suitable for each individual flock.



This multi-dose automatic vaccinator passes the needle through disinfectant each time it is pressed through the animals' skin, preventing contamination between sheep during vaccination.

How to ensure effective vaccination

Administer the correct vaccination course. Vaccination protocols will often require that the product is administered at a specific time of the production cycle. Where a primary course requires two doses to be administered at a particular time interval, it is important to follow the protocol carefully. Omitting to give the second dose prevents a satisfactory immune response being stimulated and can lead to total failure of the vaccination regime.

Avoid multiple vaccines. Never mix vaccinations in the same syringe and always inject different products at different sites, on opposite sides of the neck if possible. Only use two vaccines at the same time if they are specifically licenced to be given together.

Store vaccines correctly. Vaccines must be stored at fridge temperature at all times. Cool boxes are a simple

and effective way of keeping vaccines at the right temperature in transit or while waiting to be administered.

Only vaccinate healthy animals.

Vaccination of sick sheep will lead to failure of the vaccination and can in some cases cause significant adverse reactions.

Use appropriate handling facilities.

Handling systems need not be complicated. The aim should be to restrain sheep firmly to facilitate injection.

Inject into the correct site. Vaccines are generally administered in the neck. Check the data sheet to find out if the vaccine you are using should be administered subcutaneously (under the skin) or intramuscularly.

Use suitable vaccination equipment.

Needle hygiene is critical to preventing injection site abscesses. Always use sharp, sterile needles, and where an

automatic vaccinator is used, change the needle every 20 doses. If vaccinating small numbers of sheep with a single dose needle, do not re-insert the needle into the vial of vaccine; leave one needle in the vial of vaccine for drawing up and use others for injecting the sheep. Multi-dose, automatic vaccinators can be used very effectively and clean the needle between each injection (we recommend the Sterimatic system, pictured). But remember to clean such equipment and dry it thoroughly after use. Any fluid, detergent or residual vaccine material could interfere with subsequent vaccines.

Know your stuff! Read the RUMA (Responsible use of Medicines in Agriculture Alliance) guidance on responsible use of vaccines and vaccination at www.ruma.org.uk/sheep.htm.