Act now to defeat viruses this winter

COVID-19 has focused the world's attention on viruses and vaccines. As farmers, it should prompt us to review how we manage viruses

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In the coming months suckler calves will be weaned, castrated and housed. Many farmers will buy and move cattle to stock empty sheds. These are all stressors which will weaken animals' immune systems. Viruses, already present, are just waiting for an opportunity. The main viruses we worry about when stressing or housing cattle are respiratory – IBR, RSV and PI3

Like with the coronavirus, the impact is unpredictable. There's the horror story outbreak of pneumonia where cattle are a bit off their feed which leads to snotty noses, ears down, high temperatures and fast breathing. This requires a call to the vet and a lot of stress and hardship on human and beast, getting cattle in and injecting them, etc.

Or you could have the less visible situation where the virus is moving through your stock but the symptoms are scarcely noticeable. Both are reducing the performance of the herd which is a cost to the system; not something an enterprise with an already tight margin can take. Teagasc and AHI estimate that 75% of Irish cattle farms have some level of IBR.

So what are viruses?

Viruses are microscopic parasites so minimal (you might say efficient) that they do not even have the ability to reproduce themselves. They must invade the cells of a target host and direct its cells to reproduce virus copies, causing disease in the process.

As we see with COVID-19, viruses spread from animal to animal in bodily fluid, via breathing, coughing or by contact with infected clothes or equipment.

Treatment: the only cure is prevention

There are no cures or quick fixes with viruses. You cannot go in with antibiotics or a dose to solve the problem. Think of it like the flu – you can only manage the symptoms. The best defence is prevention in the form of a suitable vaccination programme, and the proper environment in the shed. This is where good management comes in.

What are vaccines?

Vaccines contain the same germ or part of the germ that causes disease, but they have been either killed or weakened to the point that they can't make you sick.

How do they work?

Once given, a vaccine stimulates your immune system to produce antibodies. So when you come in contact with the actual virus these antibodies know what it is and act fast to attack it and stop you from getting sick – making you immune.

It takes time for immunity to build. Different vaccines have different requirements, so it is critical to put a plan in place to ensure each animal has adequate immunity before castration/weaning/housing.

Vaccination programmes – your insurance policy

There are a number of different vaccines available for IBR, RSV and PI3.

Some are live,while others are dead. They can be given intranasally (usually giving quicker on-set of immunity), intramuscular or subcutaneously and then there are different programmes.

Any vaccination programme will depend on what viruses are present, how prevalent they are and the products being used. Each farm is unique.

For a vaccine to work properly, you must follow the vaccination programme for the product being used, to the letter, and allow the time required for the onset of immunity.

Example

- Vaccinating weanlings for IBR, RSV and PI3, that were not vaccinated as calves using injectables: they should start their vaccination programme a month before weaning (the stress period) and two months before housing.
- RSV and PI3: give the first shot on 1 September and give the booster shot four weeks later at weaning (29 September). The full onset of immunity will be two to three weeks later and last approximately six months. Give the IBR vaccine at weaning. Now these animals will have immunity built up before housing and the immunity will last through out the housing period.

If these weanlings were vaccinated as calves, they should be given their booster shot a month before weaning/castration.

IBR vaccination

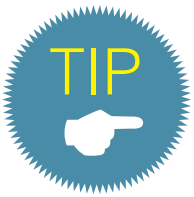
Shot one	1 September
Shot two	29 September
IBR vaccination	29 September (opposite side of the neck)
Housing	21 October

This is only one of the many combinations of vaccination programmes. There are many more, always consult with your vet before embarking on a vaccination programme.

Handling vaccines

Vaccines are very delicate and need to be handled with care. They should be:

- Purchased just before use.
- Brought straight home from the vet's office and refrigerated. They shouldn't be left in the car or jeep for the day as the heat and light will deactivate them.
- Stored in the fridge door. The fridge should be between 2°C and 8°C. Don't store in the back of the fridge, where the vaccine may freeze and be deactivated.
- Used as per the manufacturer's instructions, i.e. if they have to be mixed they should be mixed just before use, etc.
- Used as advised via the proper route of administration – intramuscular (IM), intranasal (IM) or subcutaneously (SC).
- Only used on healthy animals.
- Used-up quickly. Gather enough animals to use all the vaccine in the vial at the same time. The shelf life once opened is very short, e.g. 10 hours.
- Administered using a clean needle.



With so many products available and different combinations of vaccines, a vaccination calendar is extremely useful and can be drawn up with your vet.

If these protocols are not followed, then the vaccine may not work.

So, should you vaccinate on your farm? To take a human analogy, it's like considering the flu vaccine; you have to assess the disease risk. If you are 22, healthy and mixing with other 22-year-olds, you should be fine.

If you are 83, with a heart condition and not in the best of health, it's better to get the vaccine.

Putting that in the farming context, if you have a closed herd, are not highly stocked, have good nutrition and housing and very little stress in your animals then you will "probably" be OK.

However, you still need to be very vigilant for any signs of respiratory disease. If you buy in cattle, have a high stocking rate with lots of cattle in sheds even with good nutrition and ventilation, you need to consider it. The vaccine is like an insurance policy.

Cost

For the example above, a two-shot vaccine for RSV and PI3, and a one shot IBR vaccine costs ~ €14 per animal (depending on pack size, etc.) For 40 animals that's €560. If those same animals were infected and forfeited even 0.1kg per head per day over a 150-day winter that is 40 x 0.1 x 150 = 600kg @ say €1.80 per kg = €1,080. That is not to mention if you have an outbreak and lose animals, after all the hardship and stress of treating them.

Word of caution

Vaccination is not a silver bullet. You must also minimise stress, have a good dosing regime for fluke and worms, have good nutrition and excellent conditions in your sheds. A good shed for cattle is one that is:

- Well-ventilated.
- Draft-free.
- Has enough lying area for each animal housed.
- Has enough feed space for the type of feeding.
- Has access to plenty fresh clean drinking water.
- Has a dry lie.

- **Check out www.teagasc.ie and www.animalhealthireland.ie**