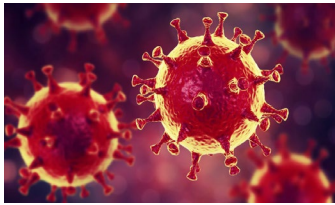
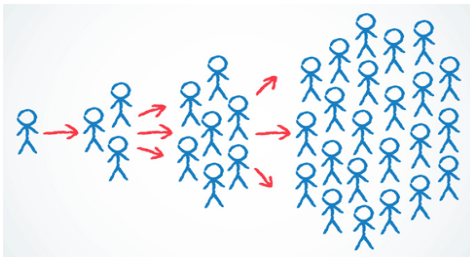


Viruses - How they do what they do

An epidemic is the rapid spread of disease within a population over a short time. A pandemic is defined as an epidemic of disease that has spread across a wide area, i.e. over multiple continents or worldwide, affecting a substantial number of people. COVID-19 is the 2nd pandemic of the 21st century, the first being in 2009 caused by H1N1- 'swine flu' virus.



Viruses are tiny pathogenic organisms; billions could sit on the head of a pin. They can only replicate inside living cells- this means that viruses require hosts to survive, which could be humans, animals or plants. Once inside an animal cell, the virus essentially hijacks it and uses the cell's resources to replicate itself. A virus's only aim in life is to reproduce and spread. Once replicated, the new viral cells leave that host and infect another, and so it goes on.

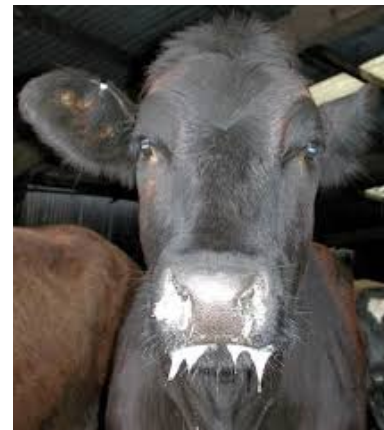


As a virus starts to replicate in an animal the cells it uses will die off – this is what affects the animal and causes disease. Incubation period is the time taken from being infected to showing signs of disease. Some diseases like Rotavirus in calves will have a short incubation period of a few days. However, Johnes disease has a very long incubation period and animals will not show signs until 2-5 years after infection.

Viruses can spread in many ways, for example by vectors - Bluetongue virus is spread by midges. Rotavirus in calves is spread by infected faecal material. COVID-19 is a respiratory virus spread in similar ways to calf pneumonia or Infectious bovine

rhinotracheitis (IBR), by infected droplets of saliva or nasal discharge when an animal coughs or sneezes.

There is no cure for viral infections and generally it is a matter of treating symptoms and providing antibiotic cover for secondary bacterial infections should they occur. Viruses are often characterized by high temperatures. The normal temperature for a cow is 38.5°C but in an animal affected by IBR, for example, that could rise to 42°C.



Viral infections provoke an immune response which in time removes the virus from the body. Some viruses are able to evade the immune response and remain in the animal for life. These animals then become lifelong carriers. IBR can hide itself in the nerves of the head where it then lies dormant until times of stress where it reactivates or 'recrudesces'. The animal then sheds virus which can affect other naïve cattle. In a herd with IBR positive animals it is important to protect the naïve animals by vaccinating the herd. Vaccination also reduces the amount of virus the carrier animals will shed.



Vaccination is a mainstay of controlling infectious disease. By vaccinating animals against specific pathogens you create 'herd immunity'; the more animals that have immunity to a disease the less infected and sick animals there will be, which consequently means that the virus cannot infect those animals; and so you stop it spreading.

What you need to know about viruses on farm:

- They are a gateway disease. They weaken the immune system and leave the door open for bacteria to enter
- Control viruses and the health of your herd will be improved. Start with BVD- get rid of that and everything will be better
- Undernourished, immunologically compromised animals will pick up viruses. Keep the immunity of your animals high by using vaccination and practicing good husbandry. Colostrum is key!



Remember, all that viruses want to do is spread. So, if you have a virus on your farm- and almost all of you will- the best thing you can do is limit the spread. By now, we are all familiar with images of NHS staff in full body protective equipment to limit the spread of corona virus. Going to these lengths is unrealistic on farm but there are things you CAN do to limit the spread of viruses.

In practice this would be:

- Isolate animals showing clinical signs
- Use tubs of disinfectant outside youngstock sheds - so many damaging pathogens can be passed from adult cows to calves via people's boots
- Make sure milk feeder equipment is cleaned daily
- Ensure solid partitions between calf pens or between animals of different ages to prevent the spread of any infectious material

- Disinfect pens thoroughly between batches of cattle
- Think about machinery going between sheds/sites- those being used for feeding/cleaning out could easily become contaminated with infectious particles
- Wash your hands! Or wear gloves for certain tasks and then dispose of the gloves. Wearing one pair of gloves all day, all over the farm, might keep your hands clean but it does nothing to limit the spread of disease
- Have a separate pair of boots for off farm- those of you contracting or working on other farms- have a home set and an 'away' set of boots and overalls

Just all the usual stuff I nag most of you about daily. Get in touch if you would like me to nag you further.



I hope you are all keeping yourselves and your families safe. We are continuing to operate as normally as we can to provide you with routine and emergency care. Hopefully, the sun will be back out shortly. I look forward to seeing you all soon- from a safe 2m distance...

All the best, B



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