

# **Biosecurity For Your Herd**

Dr. Beth Van Rys

## **What is biosecurity and why is it important?**

Biosecurity is probably a word you've been hearing a lot lately because of the new requirements under the Proaction program put forth by Dairy Farmers of Ontario. Perhaps you've attended a learning seminar with your veterinary clinic over the summer and learned more about it. I know it can sound kind of boring at first, but it is incredibly important for optimizing the health of your herd, and for the overall health of domestic animals both in Canada and globally.

Biosecurity by definition is the use of procedures designed to protect humans or animals against disease, or exposure to harmful biological agents. It is an important cornerstone of any medical field. There is not one single method to excellent biosecurity, but rather several angles at which to approach it.

## **What diseases are we targeting with biosecurity?**

Generally when thinking of biosecurity, you focus first on diseases that are common and affect animal AND human health negatively, also known as zoonotic diseases. A zoonotic disease of high priority would be one that is very contagious between animals, and that can also be spread to humans. One example of a disease like this is salmonella Dublin. This emerging strain of salmonella can spread through a herd quickly, often without many individuals showing any signs of illness. In humans, an infection with salmonella Dublin means going to the hospital for 75% of people, and the death rate is higher compared to other salmonella strains. Other examples of diseases that are zoonotic and common to dairy farms are cryptosporidium, E. coli, listeria, ringworm, and more.

Now one thing to note is there are diseases that are extremely harmful to humans and that cattle can transmit, but we don't generally worry about them as much for various reasons. Rabies for example, can infect cattle and get transferred to humans from cattle. However cattle are more resistant to it and cannot spread it as easily compared to dogs and cats. This being said, if you see a lot of rabies in your area, and wildlife has access to your cattle, it could still be a very good idea to vaccinate your cattle considering rabies is fatal to humans. Next up are diseases that are common to cattle and affect their health or production, but don't pass to humans. Examples of those diseases are the common respiratory viruses: BRSV, IBR, and parainfluenza. These viruses are extremely common to cattle and are spread via nasal secretions. They can cause a significant effect on not only a dairy cow's production and future health, but the lifetime production and health of heifer calves. Finally, it's important to keep in mind diseases that can impact health, but not at such a significant level. One example of such a disease is tail head mange in dairy cattle. It is an

annoyance and can affect their productivity, but doesn't usually make them go off feed or cause serious illness. These are still important diseases, but are generally lower on the priority list.

### **What are the different ways we can improve biosecurity?**

Improving biosecurity on your farm can be done in several ways. The name of the game is prevention. You want to prevent introduction of new diseases, and prevent spread of disease within your farm.

The best way to prevent introduction of new diseases into your farm, is to avoid buying in cattle. Some producers go so far as to have a completely closed herd, which means they never buy in cattle. If you are going to buy in cattle, and want to limit the chance of bringing in disease, it is best to buy cattle from a farm you know, and where they vaccinate their cattle against common diseases. It is also ideal to transport any cattle you buy on a farm owned vehicle. It's not that it is wrong to buy cattle from an auction or using a commercial shipper, but it does definitely increase the chance of bringing in disease to your herd. Cows at auctions are mixing with many other cows, often with unknown vaccination histories. This makes it more likely that they could bring something back to the farm. Their immunity is also decreased due to the stress of transport and mixing, and this also makes it more likely that they could be coming on to your farm sick or carrying disease.

Another important factor in good biosecurity is preventing disease and disease spread on your farm. The best way to do this is by optimising both adult cattle and calves immunities. There are many different practices that go into achieving this, and they can vary, depending on the farm's specific needs.

For calves, ensuring adequate intake of excellent quality colostrum is the number one important thing for optimising their immune status. Calves get essentially no antibodies from the mother in-utero, so they depend heavily on the colostrum for this. Good quality colostrum is whack full of antibodies. Calves need to consume the colostrum within 8-12 hours of birth. After this time, their body's ability to absorb the antibodies decreases exponentially. Several studies have shown that if you give a calf good colostrum early enough, her lifetime production will be better. One way you can help prevent scours in calves is vaccinating the dams during their dry period with a vaccine that protects against rotavirus, coronavirus, and e-coli infections. If you give calves colostrum from a vaccinated dam, it will help prevent scours from these agents.

Another way to help baby calves along is the administration of an intranasal vaccine against major respiratory agents discussed above. Before these intranasal vaccines were released, calves couldn't be vaccinated until around 4 months of age with a systemic vaccine. This leaves them vulnerable for a chunk of time where their maternal antibodies

are wearing off before they can be vaccinated. These intranasal vaccines work immediately at the site of infection, thus giving you the best chance of preventing pneumonia in your young stock.

It is also important to consider how you handle and house calves when preventing disease. Calves should be taken from the mother as quickly as possible, to prevent suckling and manure ingestion. Ideally they should be housed in a way that prevents nose to nose contact, ie hutches. If you prefer the social aspect of group housing, that is definitely fine, but cleanliness and immune support are going to be paramount. It is also extremely important to use thorough cleaning techniques for calf equipment between uses.

There are also several procedures that are advisable to prevent disease spread in your milking herd. Cleanliness while milking is very important to monitor for and prevent spread of mastitis. It is a good idea to strip quarters out before milking because not only does it help with milk let down, but it lets you see any changes in the consistency of the milk. It is also important to clean the teats thoroughly with predip and clean cloths while wearing gloves, as well as post dip to protect the teats from infection post milking. Using excellent cleanliness with milking will help prevent spread of contagious bugs like Staph aureus, which can be very difficult to get rid of once they are in your herd.

Another important factor in preventing disease in your cows is of course vaccination. You can vaccinate against several diseases, including the major respiratory viruses and E. coli mastitis. These diseases can cause a significant effect on productivity, so it is worth considering incorporating them into your protocols. There are several types of vaccine, and you can discuss which would be best for your herd with your veterinarian.

How you handle sick cattle can help mediate disease spread in your herd also. Separating sick cattle into a designated pen that isn't used for calving will aid in preventing the cow from contaminating where the rest of the herd is. Also if at all possible you should ideally handle sick cattle after handling all the healthy cattle so disease doesn't spread via your hands, boots, or clothing.

There are many ways to improve biosecurity on your farm, and it will be well worth your time to do this. You'll spend a little more money and time up front on vaccines and labour, but the improved production in your herd and reduced treatment costs will make up for it and then some. Specific farms' needs vary, so be sure to discuss your protocols with your veterinarian about which diseases you'd like to target and what improvements could be made for your farm.