

## Biosecurity for dairy farms

It pays to be conscientious about preventing and controlling infectious disease on the farm. Vaccination is the essential first step in controlling infectious diseases, but it works only when it is administered properly. Even when used properly, vaccines have limitations. Producers should do more than vaccinate; they need to protect their herds from contact with infectious disease. This concept is known as **biosecurity**. Biosecurity refers to management practices that reduce the chances of infectious diseases being carried onto the farm by animals or people. Biosecurity also reduces the spread of infectious disease on farms.

### Animal + infectious agent + environment = disease

All infectious diseases of cattle result from the interplay between the animal and its ability to resist disease (its immunity), an infectious agent (bacteria, viruses and parasites), and the environment. This relationship points out the opportunities for preventing infectious diseases. For example, producers can prevent some diseases by using vaccination to increase immunity. Producers can also prevent disease by keeping infectious agents from coming onto their farms. If an infectious agent is already on the farm, producers can try to eradicate it or control its spread within the farm. This is the basis of biosecurity.

### Strategic vaccination

Vaccination is an essential component of disease prevention plans. Vaccination is likely to be most effective when it is planned to meet the particular needs of a farm. Setting up a strategic vaccination program means determining what diseases to vaccinate against, identifying who will most benefit from vaccination, and finding out when they will most need the protection that vaccines provide. For more details on planning a vaccination program, please contact your herd veterinarian.

## Major infectious diseases of cattle and their primary means of spread

Disease	Major means of spread
Bovine viral diarrhea (BVD).....	Direct contact with infected cattle or their body fluids
Contagious mastitis ( <i>Staph aureus</i> , <i>Strept. agalactiae</i> ) .....	Contact with infected milk, usually at milking
<i>Mycoplasma bovis</i> .....	Contact with respiratory carrier or infected milk
Bovine leukosis virus.....	Contact with blood of infected cattle
IBR, BRSV and PI <sub>3</sub> viruses.....	Spread through the air
<i>E. coli</i> , rotavirus and coronavirus .....	Contact with manure from infected cattle
Salmonellosis .....	Contact with manure from infected cattle
Leptospirosis .....	Contact with urine from infected carrier cattle
Hairy heel warts .....	Contact with environment of infected cows
Johne's disease .....	Contact with manure from infected cattle

### Preventing the introduction and spread of infectious diseases

**Note: Every animal that dies unexpectedly on your farm should be examined by your herd veterinarian to determine the cause of death.**

#### 1. Keeping a closed herd

Keeping a closed herd is one way to protect cattle from infectious disease. In a closed herd, no cattle enter the farm either by purchase or loan and resident cattle do not make contact with any cattle from other farms. A herd is **not** closed if:

- Cattle are purchased or boarded
- Cattle return to the herd after going to shows, community pastures or performance evaluation centers
- Cattle use a pasture that shares a fence line with cattle in pasture on a different farm
- Bulls are purchased, borrowed or loaned
- Cattle from the herd are transported by someone else or in someone else's vehicle

It is good practice to keep the herd as closed as possible. Keeping a closed herd should not be your only protection against introducing infectious disease. You will also need to work out a plan to reduce the chances that a serious infectious disease will come onto the farm. You and your herd veterinarian need to develop and **use** a vaccination program.

#### 2. Purchasing new cattle

Eventually most owners will bring cattle into their herds. It is important to plan the introduction to minimize the risk that an infectious disease will be brought in at the same time. Three factors are important in reducing the risk of infectious diseases when purchasing new cattle:

- The protection you have given your herd by proper vaccination
- The source of purchased cattle, including how they are transported to the farm
- The method you will use to actually introduce the new cattle to the rest of the herd

#### 3. Resident cattle

Make certain your own cattle are properly vaccinated according to the manufacturer's recommendation before bringing new cattle into the herd. Consult your herd veterinarian when developing a vaccination program.

#### 4. The source of purchased cattle

- Bring in only animals from herds where you know the health status.
- Bring in only animals from herds with a known effective vaccination program. Get specific information about the vaccination history, such as what vaccine was used and when it was given. If killed vaccines were used, make sure that a primary series (two doses given a few weeks apart) was given.
- Avoid purchasing animals from unknown sources or that have been mixed with many other cattle before sale.
- Buy heifers when purchasing a group of cattle. Because they aren't milking, heifers are easier to quarantine and are less likely to have contagious mastitis. Try to buy open heifers, so you can make sure they are properly vaccinated before breeding.
- Ask for health information about purchased cattle. Ask for the DHIA somatic cell count information on milking cows. Check for evidence of contagious mastitis in the current and previous lactations.
- Transport purchased cattle or show animals in your own vehicle. Start with a clean truck or trailer and clean it out after transporting newly purchased cattle. If someone else transports for you, make sure that person starts out with a clean vehicle.

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## 5. Introducing new arrivals

- Quarantine new animals for 30 days before allowing contact with animals on-farm.
- Designate your quarantine area. It should be separated from other cattle on your farm. The degree of isolation determines how well disease transmission will be prevented. To prevent spread of respiratory disease, quarantined cattle should not share the same airspace with resident cattle. To prevent spread of BVD, quarantined cattle should not be able to touch resident cattle.
- Quarantined cattle should not share feeders, waterers or grooming equipment with resident cattle.
- Use a medicated foot bath before allowing purchased cattle to enter the herd.
- Prevent the spread of contagious mastitis by using proper milking hygiene (use separate towels; milk new cattle last; sanitize the milker equipment after milking new cattle).
- Check the isolated animal's temperature every day or at least every other day to see if it develops a fever. If it does, have it checked out by your veterinarian; don't assume it's something routine.
- Vaccinate cattle while they are in quarantine to make sure they are integrated into your farm's vaccination program.

## 6. Test all purchased cattle for infection with:

- BVD virus
- Mastitis caused by *Staphylococcus aureus*, *Streptococcus agalactiae* and *Mycoplasma bovis*
- Bovine leukosis (optional)

It can take three weeks or more to get test results, so collect and submit the samples as soon as the animal arrives. It is impossible to protect your herd against the above diseases with quarantine alone. You must test purchased cattle for these diseases during the quarantine. It helps to know the health history of the herd where you plan to purchase.

## 7. Controlling farm traffic

Infectious diseases can be carried by people and equipment, too. Some diseases are spread on clothing and boots. Some can even be carried on the person's body. If you borrow equipment from other farms, make sure it has been cleaned before using it on your farm. A few cattle diseases can even be carried by animals other than cattle. This means that producers should be mindful about controlling the movement of people and animals on the farm as well.

Some steps to reduce the risk of introducing infectious diseases:

- Limit people's access to the barn. This may mean locking the door to the barn.
- Post a warning sign asking visitors to keep out. It helps to provide information on who to contact or a telephone number to call instead of entering the barn.
- Make sure visitors wear clean boots and coveralls in the barn. This is particularly important if visitors have already been in other barns. Provide some large size coveralls and boots in the barn for visitors to wear. Disposable plastic boots can be used, but they wear through easily if people drag their feet when walking.
- Make sure visitors use a foot bath and clean their boots with a brush and disinfectant *before* entering your barn.
- Have bull calves and other sale animals picked up without allowing the dealer or transporter to enter the barn.
- Have dead animals picked up without allowing the livestock renderer to enter your barn or come in contact with your animals.
- Keep a record of visitors.
- Use your own halters and ropes.

It is difficult to control all traffic on the farm, but you can identify the traffic that represents the most risk. This includes people who do not pay attention to control of infectious diseases, people who frequently visit other farms, and people who have already visited farms on the day they visit your farm.

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