

Veterinarian Guide to the proAction Biosecurity Risk Assessment

This guide provides Canadian veterinarians with a brief summary of best management practices for on-farm biosecurity, and review the proAction® Biosecurity Risk Assessment Questionnaire (RAQ), which all Canadian dairy farmers must complete every two years with their herd veterinarian.

More information about proAction is available in the proAction Biosecurity Fact Sheet or from dairyfarmers.ca/proAction



It starts with the veterinarian

As farmers look for advice to improve biosecurity practices on their farms, it is important that veterinarians not only provide sound advice and recommendations, but also lead by example.

There are several critical points to keep in mind when going about your daily calls.



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Improving Biosecurity on the Farm

It starts with **the veterinarian**

This section highlights best biosecurity management practices that should be employed by all veterinarians at every visit.



Several critical points to keep in mind

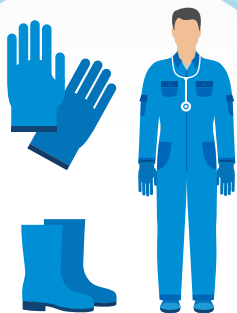
Personal Protective Equipment

Rubber boots - to facilitate organic material removal

Clean coveralls (either disposable or laundered):

- Use at least one new/ freshly washed set of coveralls per farm visit
- Plastic bag/container for soiled laundry

Disposable latex/nitrile gloves



Sanitation Equipment/ Products

Bucket with soap, disinfectant solution, and boot brush

Hand sanitizer and paper towels to ensure adequate hand and equipment hygiene

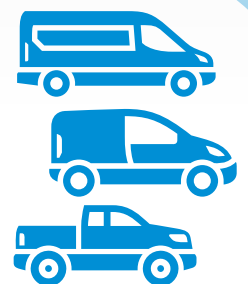


Vehicle Biosecurity

Ensure you have separate "dirty" storage space in the back of your vehicle for soiled equipment and attire

Designate the front of your vehicle as the "clean" zone – all equipment and attire that has contacted the farm (i.e. boots, coveralls) should not enter this zone

Ensure proper hand hygiene prior to entry into the "clean" zone





It's
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Farm Visits

Upon arrival

Respect all biosecurity protocols in effect on the farm and inform the farmer of your arrival

Plan movement/examination from youngest to oldest, or healthiest to sickest.

If visiting least healthy animals first is required, change coveralls and sanitize boots before continuing



Use of equipment on-farm

Use non-porous toolboxes to facilitate ease and efficacy of disinfection

Ensure all used veterinary equipment (i.e. thermometer, stethoscope) is clean before leaving your vehicle

Wash and sanitize all equipment and return to vehicle: if equipment cannot be adequately sanitized on-farm, store in "dirty" area of truck and sanitize as soon as possible

Leave all inexpensive equipment (i.e. pens) on the farm

Use new equipment (i.e. rectal sleeves, syringes, needles) for each cow

Encourage farmers to keep their own equipment (e.g. halters, ropes, etc.) – veterinarians should use the farm's equipment whenever possible

Disinfectant wipes should be used on all equipment that cannot be thoroughly cleaned

When leaving the farm

Clean all visible manure from attire, using on-farm sanitation stations to hose off manure from boots

Fill your pail with clean water, add disinfectant solution, and thoroughly clean your boots

Remove soiled coveralls and place in designated plastic bag/container in "dirty" area of vehicle

Remove boots and place them in the rear of your vehicle

Thoroughly wash hands

Drive slowly and avoid all visible debris as safely possible



Biosecurity Risk Assessment Questionnaire (RAQ)

Questionnaire
must be
completed
every two
years

The main aim of biosecurity on the dairy farm is to limit the introduction and spread of infectious disease – between animals, groups of animals, farms, and geographic areas.



The following sections will outline the proAction Biosecurity Risk Assessment Questionnaire (RAQ), which must be completed **every two years**, highlighting the rationale and scientific basis for best management practices recommendations to the farm.



Lastly, one to three recommendations should be written out to be left on the farm, which can be followed up on at subsequent visits.



Section 1. CATTLE HEALTH MANAGEMENT

1.1 Do you maintain no direct contact of pre-weaned calves from older cattle?

1.2 Do you maintain no direct contact of weaned calves from lactating cows?

1.3 Do you maintain no direct contact of dry cows from lactating cows?



1.1-1.3: This section of the RAQ promotes the recognition of varying levels of susceptibility of animals on the farm. Farmers should be encouraged to physically separate cattle by susceptibility (i.e. young from old, healthy from sick).

- Maternity and calf-raising areas house animals with the highest levels of susceptibility, whereas hospital or sick-cow pens, feed mixing and preparation areas, and manure holding and storage have a high-risk potential for disease spread. Housing systems should be constructed in such a way as to physically separate young and old animals, thereby minimizing potential for disease spread.
- Young animals should be allowed sufficient time to develop immunity prior to comingling with older animals. Dry cows should be isolated from lactating cows to minimize contact with mastitis pathogens. Ideally, dry cows, lactating cows, heifers, and cows should all be raised in separate housing facilities.

1.4 Do you prevent calves from nursing their dams?

1.5 Do you separate calves from their dams within 30 minutes of birth?

1.6 Are newborn calves offered at least 4 L of colostrum (2 L for Jerseys) within 12 hours of birth (calf's first feeding given no longer than 6 hours after birth)?



1.4-1.6: This section focuses on newborn management, specifically the importance of maintaining strict separation and colostrum management strategies:

- Immediate separation ensures that newborn calves (the most susceptible animals on the farm) have minimal contact with their dam, as she/they could be hosting several infectious diseases (i.e. rotavirus, *Mycobacterium avium* subsp. *paratuberculosis* (MAP), *E.coli*, *Cryptosporidium* etc.).
- The placental attachment of the cow completely separates her immune system from the fetus' during gestation. As such, neonatal calves do not receive transfer of protective immunoglobulins in utero, and it is vitally important that they receive sufficient, clean, quality colostrum in a timely manner.

1.7 Do you feed non-saleable milk (abnormal or with drug residues) to your calves?

1.8 Do you pasteurize non-saleable milk before it is fed to calves?



*1.7-1.8: Non-saleable milk is a potential reservoir for a variety of pathogens (i.e. *Cryptosporidium*, *E.coli*, *Clostridia*, MAP, *Staphylococcus aureus*, etc.). Feeding such milk could increase the likelihood that susceptible animals (i.e. pre-weaned calves) are exposed to such pathogens. It is a practice that can weaken the effectiveness of physical separation of young from old. Pasteurization has been shown to minimize the risk of this practice, therefore should be encouraged if non-saleable milk is to be fed.*

1.9 Keeping in mind the disease prevention priorities of this farm, are calves housed in a way that minimizes disease?



In addition to maintaining physical separation between young (susceptible) and old animals, other practices should be promoted as a way to minimize disease:

- Feed, bedding, and water should be available in sufficient quantity and quality to assure health.
- Ventilation promotes heat abatement and reduces the accumulation of noxious and infectious agents that could adversely affect health.
- Stocking densities promote adequate space for all to comfortably stand, lie, and adopt normal resting postures. Optimal stocking densities promote animal welfare, improves air quality, and reduces manure contamination.

Section 1. CATTLE HEALTH MANAGEMENT



1.10 Do you follow a veterinarian-reviewed vaccination program for specific infectious diseases?

1.10a Against which agents do you vaccinate?



1.10 and 1.10a: Vaccination is a valuable component of many cattle health management plans, as a means of improving herd immunity to specific pathogens of concern. Through a tailored approach, farmers can apply vaccination strategies to maximize herd immunity, thereby minimizing the impact of infectious disease. Through a valid veterinarian-client-patient relationship (VCPR), the veterinarian gains a fuller understanding of risk on the farm, and devises a vaccination program to mitigate disease risk.

1.11 Do you have written standard operating procedures (SOPs) for dealing with clinical cases of infectious disease?

1.11a For which diseases do you have SOPs?



1.11 and 1.11a: Maintaining SOPs is a way of assuring consistency in the management and treatment of disease on the farm. Ideally, veterinarians work with their farmers to develop standardized disease definitions, along with evidence-based treatment and management procedures.

1.12 Are sick or infected cattle managed after those that are clinically healthy?



Sick animals serve as a potential reservoir for infectious disease. Ensuring that farmers manage healthy animals before they contact sick animals will minimize disease spread through the herd.

1.13 Do you maintain health records to monitor the occurrence of infectious disease in your herd?

1.14 Do you review health records to monitor the occurrence of infectious disease in your herd?

1.15 Does your veterinarian perform necropsies on cattle that die of unknown causes?



1.13-1.15: Farmers routinely identify and manage sick and diseased animals on the farm. It is vitally important that records of such occurrences are maintained. Additionally, when animals die of unknown causes, the cause of death must be identified to allow for completeness of records. Monitoring the disease status of the herd through records analysis allows the herd management team to evaluate the effectiveness of current biosecurity initiatives.

1.16 Is manure spread on fields that will be grazed, or harvested for young cattle, during the same season?



Manure is a reservoir for many infectious disease agents (i.e. Salmonella, MAP), and spreading manure on fields to be grazed by, or harvested for, young animals can reduce the benefits of physically separating these age groups on farm.

1.17 Do you follow a veterinarian-reviewed parasite control program?



Veterinarians should develop tailored and evidence-based parasite control programs. Focus should be on reducing the likelihood of anthelmintic resistance development. Consideration should be given to farm- and group-specific risk, manure management and environmental hygiene, and separation of young from old.



Section 2. CATTLE ADDITIONS AND MOVEMENT

Section 2 focuses on identifying risk associated with the introduction and or movement of cattle into and within the herd. Management strategies to minimize the risk of introduction and spread of disease include:

2.1 Have you introduced new cattle into your herd since the last risk assessment (or in the last 2 years if no prior risk assessment was performed)?

If yes:

- 2.1a Do you insist on receiving health records for these cattle before introducing them into your herd?
- 2.1b Do you insist that these cattle are vaccinated before introducing them into your herd?
- 2.1c Do you isolate these cattle before introducing them into your herd?
- 2.1d Do you test these cattle for specific diseases of concern?

2.2 In the time since the last risk assessment (or in the last 2 years if no prior risk assessment was performed), have cattle been reintroduced after being in contact with other cattle (shows, fairs, boarding, etc.)?

If yes:

- 2.2a Do you isolate these cattle before introducing them back into your herd?

2.3 Do you isolate sick cattle from their herdmates?



Limiting purchase frequency and number of sources:

- Ideally, a closed herd should be promoted.
- To reduce disease introduction, cattle should be purchased from a minimal number of "known health-status" source herds.



Know the health status of purchased animals:

- Promote communication between buyer and seller.
- Documentation of immune and health status – i.e. lab results, health records, written health management plans etc.
- Health profile should fit with destination herd.
- Ideally source directly from herd of origin.



Segregation, isolation, and monitoring:

- Farmers should be made aware of the fact that clinically normal animals might harbour disease that could threaten the health of their herd.
- Whenever animals are bought, or return to the herd of origin (i.e. visited fairs, shows), they need to be segregated and monitored for a predetermined amount of time to minimize disease introduction into the herd.
- Also, sick animals should be segregated and isolated to reduce the likelihood of transmitting infectious diseases to healthy herd mates.
 - Direction should be given on how to handle such animals (i.e. protective equipment).



Test, vaccinate, and/or treat:

- All done in accordance with the herd health management plans.
- Collect samples before arrival and test for diseases of interest.
- Ensure the immune status matches that of destination herds (i.e. vaccination protocols).



Section 3. PREMISES AND SANITATION MANAGEMENT



- 3.1 Are alleyways scraped or flushed frequently enough to prevent manure contamination of cow feet and legs?
- 3.2 Are cow stalls cleaned frequently enough to prevent manure contamination of udders?
- 3.3 Do you disinfect pens that have housed sick cows between use?
- 3.4 Do you have a designated area for housing sick cows?
 - 3.5a Do you clean and sanitize the calving pen after each use?
 - 3.5b In the event that you do not clean and sanitize the calving pen, do you remove soiled and wet bedding and add new bedding between uses?
- 3.6 Are cows' udders, flanks and lower legs free of manure contamination between calving?
- 3.7 Do you clean on-farm animal health equipment (balling gun, dehorner, hoof knives) after each use?
- 3.8 Do you use separate tools and equipment for feeding and cleaning?
- 3.9 When artificially inseminating or making a rectal examination, is a new rectal sleeve used for each cow?
- 3.10 When vaccinating, taking blood, or treating animals, is a new needle used for each animal?
- 3.11 Are dead animals stored and removed in a manner that prevents cattle, dogs, cats, birds, and rodents from accessing them?
- 3.12 Do you prevent animals from having fence-line contact with livestock from other farms?
- 3.13 Is stored feed protected from contamination by cattle, dogs, cats, birds, and rodents?

Section 3 from the biosecurity RAQ focuses on ensuring that maintenance and sanitation programs are established to reduce pathogen load in the environment, as well as to minimize the risk that further infectious diseases are introduced and spread (including potential risks associated with the access of wildlife and domestic animals to the farm premises). Farmers are expected to follow best management practices regarding facility hygiene and sanitation, including:

Provision of materials and equipment for cleaning, disinfection, along with instruction on use to farm workers:

- Provide instruction on the purpose and specific procedures of cleaning and disinfection, as well as important areas of focus (i.e. sick cow pen, calving pen, stalls etc.).

Cleaning and disinfection of equipment and vehicles:

- All equipment needs to be clean prior to every use.
- Focus on designing methods of cleaning and disinfection specific to the equipment type.

Clean, disinfect, and maintain production facilities:

- Vital to remove all potentially infectious material (manure, bodily fluids, waste milk, soiled bedding, spoiled/leftover feed) from the housing area, with a particular focus on the most susceptible animals.
- Focus on setting regular cleaning schedules and protocols.

Management of manure, waste, deadstock, and pests:

- Manure, waste, and deadstock are stored in secure area, inaccessible to other cattle, wildlife, and domestic pets.
- Disposal is carried out in an accepted manner.
- The farm practices pest control.



Section 4. PERSONNEL, VISITORS, VEHICLES, AND EQUIPMENT

Section 4 focuses on ensuring that everyone that sets foot on the farm (farmers, family, employees, visitors, service providers) is mindful of biosecurity protocols to prevent the introduction and spread of infectious disease on the farm. Some key considerations include:

- 4.1 Do you require all workers, visitors, and farm service providers to wear clean or disposable coveralls and boots on your farm?
- 4.2 Have you posted visible signage on the farm informing all visitors about where to report, who to contact, and areas of restricted access upon arrival?
- 4.3 Do you have an SOP for international visitors addressing footwear and clothing?
- 4.4 Do you maintain a visitor log?

Control access:

- Access to the farm by those not residing on the farm (i.e. employees, service providers) is planned and managed.
- All visitors should understand the risks associated with disease spread on farm, and comply with farm protocols.

Clean clothing and footwear:

- All clothing and footwear worn on the farm should be fully cleaned prior to facility entry.
- Clothing and footwear should be cleaned and/or changed, as required, prior to movement between production areas.

Control of movement of vehicles and equipment:

- Equipment should be used in a manner that prevents cross-contamination between animals.
- Vehicle access is restricted to permitted areas.
- Cross-contamination between facilities and production areas of the farm is limited.

Plan, train, communicate:

- All employees need to understand biosecurity risks and the specific biosecurity plan of the farm (i.e. protocols, record keeping).
- Visitors to the farm must be made aware of, and required to follow, biosecurity plans



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