
4.2.3 Strategy 3: Segregate, isolate, and monitor

Control cattle introduction into the resident herd, using isolation where indicated. Isolate and monitor newly introduced and re-introduced animals for a period of time that is sufficient to reveal the presence of clinical disease and to allow pathogen shedding to cease.

Producers who isolate cattle on entry provide a buffer between the new animals, particularly those with unknown disease status, and the home herd; cattle from the resident herd returning from a commingling activity (e.g. fairs or shows) would also be considered during this time as unknown disease status. This period of isolation from the resident herd provides an opportunity for any disease that might be carried by one or more of the additions to become evident and to be observed and properly diagnosed. Likewise, any planned treatment or vaccination can also be allocated an appropriate time to take effect.

Many infectious diseases of cattle can be present in animals as asymptomatic carriers. Detecting these diseases, including Johne's disease, BVD, bovine leukemia virus, and contagious mastitis, in an isolation period alone is unlikely. In all cases, the period of isolation upon arrival should provide sufficient time for an additional round of testing and receipt of laboratory results for these diseases.

Under this strategy, producers may hold all animals that enter the premises in isolation for a period of time (2 to 4 weeks) – one that is assessed as appropriate to their condition and disease status, while observing for signs of disease until confident of their health/disease status. The incubation period for most dairy cattle diseases is two weeks or less. Discuss the precise isolation time with the herd veterinarian. During this period, isolate the animals from all other herd members, and implement enhanced biosecurity measures between isolation areas and the rest herd to avoid disease transmission.

Separate new cattle into a dedicated area (separate housing) with no sharing of water, feed, equipment, facilities, or bedding with resident cattle. Keep away any discharges from all isolated cattle, including manure, urine, and fetal fluids from the resident herd. In addition, consider isolating cattle from different source herds separately.

Acknowledge that there is a challenge to isolating milking cows in this manner. Cows need to be milked, and when larger numbers are involved, manual milking or isolation from the milking parlour is difficult. Carry out the milking of new cattle last to prevent the spread of contagious mastitis. Avoid purchasing lactating cows, as isolation cannot be effectively maintained in the milking parlour.

Consider animals that are re-introduced to the herd as new additions when they are returning from situations in which they have been commingled with animals off-farm, such as at shows or fairs, or in any cases of shared pasturing.

4.2.4 Strategy 4: Test, vaccinate and/or treat

While in isolation, individual animals are tested, vaccinated, and/or treated before introduction or reintroduction into the resident herd. Appropriate samples (blood, milk, or feces) are taken and tested no later than upon arrival and/or completion of isolation.

The Animal Health Management Plan discussed in section 4.1 should include disease testing strategies, treatment regimes, and vaccination protocols for common diseases in accordance with the herd veterinarian's recommendations. These testing, treatment, and vaccination approaches should be used to prepare animals for introduction and re-introduction into the resident herd. Collect blood, milk, feces, and other samples from new entrants for specific diseases of concern, and conduct laboratory tests and analysis of samples before their exposure to the main herd. Examples of pre-purchase screening tests are milk somatic cell counts and/or culture, and serologic or culture testing for BVD, leukosis, and Johne's disease, respectively.

Use the isolation period, described in Strategy 3, to further screen cattle, detecting any disease conditions that might have been missed in the initial herd assessment and screening tests. Any animal that becomes ill shortly after purchase or during the isolation period should undergo a thorough diagnostic workup and receive adequate treatment, or in a more extreme situation, be culled.

Have resident cattle properly vaccinated according to the manufacturer's and the herd veterinarian's recommendations before bringing new cattle into the herd to avoid compromising the resident herd status. Vaccinate new cattle while they are in isolation to ensure their integration into the dairy farm's vaccination program.

4.2.5 Strategy 5: Record location and movement

Traceability methods and systems are used to record premises identification, to track location and movement of animals, and to maintain a link to their herd and their health status.

Dairy producers are familiar with using animal identification for production management purposes, especially those with electronic data collection for oestrus, mastitis detection, milk production, feeding and inventory management. In addition to these uses, all cattle require individual identification with their history of vaccination and disease.

Traceability of cattle and the use of individual animal identification can also be accomplished, using the computerized systems that are in use for herd management. These systems make extensive evaluations easy and efficient, though hand-kept record systems still remain effective. Each system has its own merits. What is important is consistency in keeping records that are legible, easily retrieved, and maintained for a period of at least 24 months after shipment of an animal to a new location, new owner, or for slaughter.

Although the general principle is to minimize animal movement, the information collected and maintained for each animal is expected to include where each animal was born, where it was raised,

and its movement since birth. Animal identification and traceability is mandatory in some provinces, and producers are required to declare animal movement to a central database. This does not preclude internal traceability systems being maintained for production and tracking purposes on-farm.

4.2.6 Strategy 6: Manage movement within the production unit

Pathways for cattle movement on the farm premises are predetermined. Animals are moved in a manner that reduces exposure to diseased or lower-resistance animals. Sources of contamination are avoided.

Prepare a movement/flow plan that considers the risk points throughout the production area and their potential impact on cattle at different stages of development. The plan should also consider the order of movement of cattle through the facility when using the same alleys and routes. Generally, the order should be from younger to older, more susceptible to less susceptible, and healthy to sick, if necessary. Avoid isolation and treatment areas.

Keep movement paths clear of manure, and clean after use by any sick or unknown health status animals. Careful planning of movement will both avoid direct contact between animals of different disease status and reduce the potential of indirect contact through manure or other potentially infectious materials.

4.3 CONTROL AREA 3: Premises' Management and Sanitation

Target Outcome:

Maintenance and sanitation programs are established for the facility/property to reduce the pathogen load and to minimize the risk of introduction and further spread of diseases.

Strategy:

Objective(s):

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- | | |
|--|---|
| 1. Provide materials and equipment for cleaning and disinfection, and instruction on their use | Farm workers, service personnel, and other visitors are made aware of the need to clean and disinfect for biosecurity purposes, are provided with suitable materials and equipment, and know how to carry out sanitization practices for all areas of the farm. |
| 2. Clean and disinfect equipment and vehicles | Farm workers, service personnel, and other visitors follow prescribed farm practices to clean and disinfect their equipment and vehicles during their on-farm activities, and when entering or leaving the premises. |
| 3. Clean, disinfect, and maintain production facilities | Bedding is removed from stalls and disposed of in a prescribed manner, and manure is cleared from alleyways and moved to a suitable storage area. High-risk areas of the production facilities, including isolation and calving pens, milking parlour, and water and feed areas are cleaned and disinfected on the farm's planned schedule. Facilities are maintained in good repair. |
| 4. Manage manure, waste, deadstock, and pests | Manure, waste, and deadstock are removed from the cattle housing and treatment areas and out of potential contact with cattle, and are isolated from scavengers; disposal is carried out in an accepted manner. A regular program of pest control is followed. |
-

Good sanitation practices are a key activity in a strong biosecurity plan. Though frequently the least attractive element in a biosecurity plan, sanitation is often the key factor in minimizing and limiting the course of infectious diseases. Sanitation processes work in conjunction with zoning and the effective management of high-risk pathways and areas within a production unit. Unlike the swine and poultry sectors, an "all in" or "all out" stocking policy is unrealistic.

Good sanitation practices, including both cleaning and disinfection, can reduce the transmission of disease pathogens that could potentially infect the herd. Make available specific cleaning materials, ensuring that farm workers and visitors know how to use these products to sanitize vehicles, material and equipment, and facilities. The risk of disease transmission can also be reduced by careful management of manure, deadstock, and pests.

Apart from the obvious need to protect the stock from bringing disease onto or spreading within the farm, the safety of the consumer has to be of paramount consideration, as well, in this activity.

4.3.1 Strategy 1: Provide materials and equipment for cleaning and disinfection, and instruction on their use

Farm workers, service personnel, and other visitors are made aware of the need to clean and disinfect for biosecurity purposes, are provided with suitable materials and equipment, and know how to carry out sanitization practices for all areas of the farm.

Good farm hygiene is the responsibility of all farm personnel. All personnel should know and be capable of explaining the farm's sanitation plan to all visitors. Infectious diseases can be carried onto a dairy farm by people, their clothing and boots, and their equipment, and thus spread disease indirectly to cattle.

Educate farm workers, service personnel, and other visitors about the purpose and outcomes of proper cleaning and disinfection, with a view to encouraging the use of effective materials and practices. Develop instructions for use in cleaning and disinfecting specific types of equipment, facilities, and vehicles, and train farm workers in carrying them out. A summary of the procedures can be posted near the barn and other facility entrances to reinforce these practices and work as a review for visitors and farm workers.

As an ongoing aspect of maintaining best practices in cleaning and disinfection on the farm, seek out information on cleaning and disinfection materials that are effective in important areas of the farm and in specific disease risks of concern, ensuring their availability for use.

4.3.2 Strategy 2: Clean and disinfect equipment and vehicles

Farm workers, service personnel, and other visitors follow prescribed farm practices to clean and disinfect their equipment and vehicles during their on-farm activities, and when entering, within, and on exit from the production unit or premises.

One of the most important cleaning and disinfection practices on a farm is to ensure that equipment is clean before and after use (e.g. between animals, groups of animals, dirty and clean tasks). Methods of cleaning different and specialized types of equipment should be individually designed, with cleaning/decontaminating and clean equipment storage areas provided.

The frequency and effective methods for cleaning and disinfecting specific equipment used in selected circumstances should be followed, based on their use and the possibility of cross-contamination (e.g. larger units such as feed mixers and manure scrapers). Specialized equipment used in higher-risk practices, such as artificial insemination (AI) and treatment of sick animals, should have specific cleaning and sanitizing protocols, possibly employing specialized products.

Develop and enforce practices to ensure farm vehicles that circulate into or across zones and/or close to the herd and production areas are cleaned when they arrive and/or before they enter the production unit and upon leaving the cattle areas or premises. Provide a designated area and facilities for washing and disinfecting vehicles.

4.3.3 Strategy 3: Clean, disinfect, and maintain production facilities

Bedding is removed from stalls and disposed of in a prescribed manner, and manure is cleared from alleyways and moved to a suitable storage area. High-risk areas of the production facilities, including isolation and calving pens, milking parlour, water and feed areas, are cleaned and disinfected on the farm's planned schedule. Facilities are maintained in good repair.

The presence of pathogens is visually undetectable. Therefore, it is important to remove potentially infectious material, and material that is known to provide a pathway for pathogens, including

- manure and body fluids
- discarded milk
- soiled bedding
- spilled or leftover/excess feed

Keep all areas of the production facility clear of potentially infectious material. In stall areas, remove and renew bedding on a regular schedule to minimize risk. If disease is suspected or confirmed in any stall area or if unusual levels of soiling are experienced, cleaning and possibly disinfection may be needed to avoid infection of cattle using that stall and/or those in adjacent stalls.

To clear manure, regularly scrape alleyways used as pathways for cattle movement. Clean and possibly disinfect if disease is suspected or confirmed in any cattle that have used the alleyway.

In particular, identify isolation and calving pens or facilities as requiring additional cleaning and disinfection, either on a scheduled or per-use basis. Routes within the production area that are travelled by the herd or used for removing these risk materials also require special attention. To reduce contamination, identify barn surfaces, stalls, water troughs, and feeding areas, and/or systems as areas that require special attention. Regularly scheduled cleaning and disinfection practices should be documented.

Develop routine sanitation and disinfection procedures for all animal-holding areas from which disease agents could be spread. Further, to improve the effectiveness of cleaners and disinfectants and the efficiency of these practices, consider installing cleanable walls, floors, and other facility parts during renovation or when designing a new barn or other facilities.

Good construction, regular maintenance, and renovation of facilities strengthen a biosecurity plan by aiding cleaning and disinfection effectiveness. Smooth integrated surfaces and those that are finished with a non-porous coating provide fewer places for potentially infectious materials to lodge, and allow easier and more complete cleaning. Well-maintained gates and doors on buildings ensure that areas can be secured from intrusion and from unintended commingling. Signage, fences, and barriers should be in good repair. Design and maintain production areas, driveways, and walkways to avoid standing water or effluent.

4.3.4 Strategy 4: Manage manure, waste, deadstock, and pests

Manure, waste, and deadstock are removed from the cattle housing areas and out of potential contact with cattle, and are isolated from scavengers; disposal is carried out in an accepted manner. Producers follow a regular pest control program.

Handle manure, deadstock, and waste with equipment that is not used for other functions, or that is cleaned and disinfected between uses. Move manure, deadstock, and waste from housing and milking areas directly to a barn or pen exit to minimize contact with cattle and potential contamination of the alleyways and production areas in the barn.

Store manure in a dedicated area away from traffic areas, and in a way that is accessible to the production area. Construct the storage area to ensure that runoff will not reach active production areas, and that especially avoids risk of contamination of the feed storage or transfer areas. If used as nutrient, spread the first application of manure on the fields as soon as possible in the spring to decrease the attraction and breeding of flies, and to reduce feed sources for vermin and scavengers.

Remove other wastes to municipal landfill or to a hazardous waste site as appropriate.

Have in place a control program for mice, rats, and birds, vermin, and other scavengers to prevent the harbouring of pathogens and their spread around the farm, particularly in feed storage and delivery areas. Good sanitation and regular clean-up practices will aid in the control of pests or vermin. Fly control may require using a combination of controls; frequently removing manure from barn pathways, yards and holding areas to prevent the completion of their life cycle; and using traps, baits, fly paper, or insecticides.

Deadstock must be composted, buried, or picked up by a deadstock collector in compliance with regulations, within 24 to 48 hours to prevent scavengers and vermin from contacting the carcasses. “Scavengers” in this context also include farm pets, especially farm dogs and cats that can also serve as mechanical carriers of pathogens within a production unit. Their role in disease transmission is often overlooked but may be important in diseases such as Neospora, rabies, and others.

4.4 CONTROL AREA 4: Personnel, visitors, vehicles, and equipment

Target Outcome:

Producers and their employees, service providers, and visitors are aware of and follow the farm biosecurity measures to prevent the spread of infectious diseases.

Strategy:

Objective(s):

- | | |
|---|--|
| 1. Control access | Access by farm workers who live or travel off the farm, farm services personnel, and all other people who visit the farm for business or personal reasons is planned and managed. Access is purposeful. Farm visitors understand the potential impact of their actions and comply with the farm protocols in place to minimize the introduction of diseases to the herd. |
| 2. Use clean clothing and footwear | Farm workers and service personnel use dedicated farm-specific clothing and footwear when on the farm. Clothing and footwear is cleaned and changed between visits and as required when moving between production areas. |
| 3. Control movement of equipment and vehicles | Farm workers, service personnel, and other visitors use equipment in a manner that minimizes the risk of cross-contamination between animals. They restrict the movement of their vehicles to permitted areas, and limit cross-contamination between facilities and between production areas on the farm. |
| 4. Plan, train, and communicate | Farm personnel should be aware of and understand the importance of biosecurity and the farm-specific biosecurity plan of the dairy operation where they work. All farm personnel should be trained in biosecurity protocols, record keeping, and dairy cow behaviour. Every person who visits or works on the dairy farm should know that a biosecurity plan has been prepared for the farm and that they are expected to follow it. |

People may inadvertently introduce pathogens to farms. Pathogens can survive on hands, feet, clothing, on tools and equipment, and in and on vehicles, and can be transmitted to animals or their surroundings. Their actions are potentially an indirect path for disease agents onto farms. Reduce the risk of this type of transmission in three steps:

- 1) Limit access by people, their equipment, and vehicles.
- 2) Require that people and their clothing be clean.
- 3) Require cleaning of equipment and vehicles.

The service providers who pose the greatest risk for transmitting disease are those who have direct contact with cattle; for example, the herd veterinarian, the AI technician, or the hoof trimmer. Next are people who walk through barns and feed alleys: nutritionists, classifiers, buyers, etc. This principle of relative risk, based on the closeness of their interaction with cattle can be applied to the circulation of all visitors and service providers throughout the farm premises.

Further, it is important to understand that *every* person poses a risk, due to possible cross-contamination. For instance, even if a person comes onto a farm wearing clean boots, their boots can become contaminated by infectious material and then, spread it. (For example, they accidentally step into the manure from a cow with winter dysentery and then expose a healthy calf, which leads to scours.)

There is also a concern for the health of people visiting the farm. Some of the diseases of concern on dairy farms can be zoonotic, and thus can potentially infect people. Potential contact with these and other contaminants are also a consideration in the occupational health and safety of farm workers.

4.4.1 Strategy 1: Control access

Plan and manage access by farm workers who live or travel off the farm, by farm services personnel, and by all other people who visit the farm for business or personal reasons. Access is purposeful. Farm visitors understand the potential impact of their actions, and comply with the farm protocols that are in place to minimize the introduction of diseases to the herd.

For many dairy producers, visitors to the farm are an important part of their business and social life. Dairy farms are relatively open environments, and thus require active control of all types of visitors, using a risk-based approach to farm entry and to facility access. Visitors need to acknowledge that each farm's biosecurity practices should be followed.

Producers are advised to disallow anyone with no reason to be on the farm. Visitors are expected to contact the producer or another responsible individual before their arrival to confirm their visit and to be informed of the practices to follow during their visit. Preparations for their visit can then be made. Producers should consider keeping a record of all visitors who come and go, including consultants, salesmen, deliverymen, haulers, maintenance workers, and veterinarians. It may be possible to designate an area where visitors enter and congregate without coming into contact with the cattle, feed, equipment, and/or barns. Visitors should be discouraged from entering the housing and feed areas and from touching cattle and calves.

Establishing a CAZ and a RAZ are recommended on all dairy farms to identify areas of relative risk. Practices are then designed for transition points into each zone and for actions taken within each zone. (Refer to section 3.5.1.)

For barns, facilities, and all areas housing the herd, post signage to direct visitors to a main office before they enter the barn areas, identifying the biosecurity area(s) and prohibiting entry, except under specified circumstances. Secure, wherever possible, doors and other entryways to these areas. Prohibit anyone from entering the RAZ, unless there is a legitimate and agreed reason for access. Producers are recommended to advise service providers of the access practices to follow on-farm, and to consider these practices as a condition of doing business.

While these specific recommendations focus on control by producers, the strategy also proposes that all visitors to dairy farms understand the impact of their presence on the farm, as well as their interaction with cattle, equipment, and facilities on the biosecurity of the farm and the health of the herd. Awareness of these factors by visitors will increase their willingness to follow each farm's practices.

Ask foreign visitors to provide information about recent farm and animal contacts. It is recommended that foreign visitors be excluded from the livestock facilities for at least five (5) days after their arrival into Canada. Further, ensure that these visitors have taken the appropriate precautions to avoid carrying foreign disease agents on their clothing, shoes, or other articles, including cameras, jewellery, and watches.

In addition to controlling access by visitors, there are a number of specific practices that are intended for visitors to follow. Strategies 2 and 3 and subsequent subsections present these practices.

4.4.2 Strategy 2: Use clean clothing and footwear

Farm workers and service personnel use dedicated farm-specific clothing and footwear when on the farm. Clothing and footwear is cleaned and changed between visits and as required when moving between production areas.

If there is a need to address the risk of transmission of potentially infective material by farm workers and service personnel, focus on the availability of clean clothing and footwear, and their ability to clean exposed areas of their bodies. Clean clothing and footwear can either be clean permanent clothing and footwear, or disposable coveralls and foot coverings, with both provided by producers or supplied by the workers and service personnel. Consider providing a transition area or anteroom at the entrance to the active production area where farm workers, service providers, and visitors can don and remove clothing and footwear, and wash and sanitize their hands. These are decisions producers will make in designing their farm practices.

Producers will ensure that all service providers with access to the herd are informed of their biosecurity requirements with respect to clothing, footwear, and hand washing. Visitors and service providers should bring suitable clean clothing and footwear for use upon arrival in the production

area(s), donning upon entry to each risk zone. If necessary, producers will provide all the equipment, supplies, and clothing necessary to meet the standards on the farm, and may provide all staff with farm-specific clothes and boots.

Farms' biosecurity plans should ensure that all visitors bring clean clothes and boots, or disposable coveralls and foot coverings when arriving at the farm or that producers provide farm-specific clothing and boots, or disposable coveralls and foot coverings upon arrival, and that they don them prior to entering the production areas. Ensure that visitors change clothing and clean foot coverings (again) if they enter the RAZ. Similar requirements within the zones could also apply when moving into specified risk areas, such as the calving area, the heifer area, or the isolation area.

In both cases, clothing and footwear, and cleaning hands and other exposed areas are strategies that apply to movement into the CAZ and between the CAZ and the RAZ. It is important to provide and maintain effective boot-washing facilities, solutions, and brushes. Producers should insist that visitors brush and wash their boots to remove manure, disinfecting upon arrival and departure from every dairy farm.

4.4.3 Strategy 3: Control movement of equipment and vehicles

Farm workers, service personnel, and other visitors use and control equipment in a manner that minimizes the risk of cross-contamination between animals. They restrict the movement of their vehicles to permitted areas, and limit cross-contamination between facilities and between areas on the farm.

Another strategy for people is controlling the equipment used and vehicles driven on the farm by farm workers, services personnel, and visitors. Equipment and vehicles can transmit potentially infectious materials, which are picked up at other farms and livestock facilities, onto their farms, and thus risk the transmission of those materials, directly or indirectly, to the dairy herd. Movement control includes traffic onto a dairy farm and traffic patterns within the operation.

Normal use of the equipment, and passage of vehicles through certain areas of the farm and their appropriate use for transport of animals, deadstock, or other organic materials can result in contamination by potentially infective materials. Therefore, it is important to keep vehicles away from high-risk areas and to establish work practices that avoid cross-contamination caused by equipment that workers and service providers use. Strategy 4.3.2 addresses cleaning and disinfecting vehicles and equipment following contact with potentially infectious material.

Producers should establish a designated parking area for all visitors and service providers, located away from the barn and other animal facilities, and from routes travelled by animals and/or mobile farm equipment, such as tractors, skid-steers, wagons, etc., and have one combined entrance and exit if practicable. The farm biosecurity plan should require that transporters, milk trucks, and feed trucks – vehicles that must approach the animals or animal housing areas – have routes to follow in carrying out their duties, minimizing the potential for spreading any potentially infectious

materials. Likewise, these routes should reduce the potential for picking up any such materials and redistributing elsewhere on the farm or to other farms. Practices that avoid contamination of the cab or loading areas of these vehicles should also be in place.

4.4.4 Strategy 4: Plan, train, and communicate

Farm personnel should be aware of and understand the importance of biosecurity and the dairy-specific biosecurity plan to the dairy operation where they work. All personnel should be trained in biosecurity protocols, record keeping, and dairy cow handling and behaviour. Every person who visits or works on the dairy farm should know and be expected to follow the biosecurity plan.

The success of biosecurity plans will require the involvement and cooperation of several groups and individuals: suppliers, haulers, family members, farm workers, visitors, farm service providers, and the herd veterinarian.

They all need to understand the importance of biosecurity and biosecurity best practices that guide their activities on the farm. In addition, they should ensure that their own biosecurity plans include safeguards that coordinate with the farm plan.

Also important is the need to involve the family members and employee(s) in developing and implementing the biosecurity plan, as well as the annual review, and to educate family members and staff about the importance of following the biosecurity plan and their role in enforcing and making the plan work. It may be worthwhile to designate a family member or employee, on a rotational basis, who will be responsible for implementing biosecurity and food safety standards daily on the farm.

Producers, their family members, farm workers, and visitors benefit from training in the specific biosecurity strategies and objectives found in the Standard, as they are adapted for each farm production area, to help ensure cooperation and buy-in. Farm service providers also require training in established practices for the farms they service to ensure they can carry out and accommodate these practices within their own operational and biosecurity practices.

Farm personnel should also be trained on biosecurity protocols, record keeping, and dairy cow handling and behaviour. All farm personnel involved in the daily monitoring and handling of dairy cattle should be made aware of the importance of early detection of disease and what actions to take if they suspect an animal may be exhibiting clinical signs of an economically important or foreign animal disease.

It will be worthwhile to strengthen the media/communications skills for the dairy farm by preparing an external communications plan for the general public, veterinarians, and farm service providers. Every person who visits or works on the dairy farm should be aware that they are expected to follow the biosecurity plan.



Acknowledgements

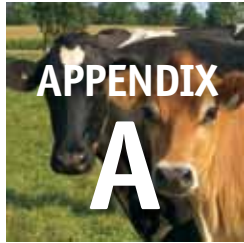
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Table 4: The Advisory Committee members are acknowledged, with each member listed along with affiliation.

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Pauline Duivenvoorden	Dairy Farmers of Canada
Hennie Bos	Dairy Farmers of Canada
Hans Gorter	Dairy Farmers of Canada
Pierre Lampron	Dairy Farmers of Canada
Réjean Bouchard	Dairy Farmers of Canada
Paul Baillargeon	Industry Representative
Jean Baril	Canadian Association of Bovine Practitioners
Henry Ceelen	Canadian Veterinary Medical Association
François Bécotte	Institut de Technologie Agro-alimentaire (MAPAQ)
Blair Dow	Lakeland College
Dale Douma	Manitoba Agriculture, Food and Rural Initiatives
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Member	Affiliation
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Martine Labonté	Fédération des producteurs de lait du Québec
François Bédard	Agriculture and Agri-Food Canada
Lucille McFadden	Agriculture and Agri-Food Canada
Ed Empringham, DVM	eBiz Professionals Inc.
Ian Richardson	eBiz Professionals Inc.
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Archie Stewart	Canadian Food Inspection Agency

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Glossary

The following terms, with a working definition for each, may be used in the National Standard and are generally used in biosecurity and animal health documents:

Aerosol: A cloud of solid or liquid particles suspended in a gas form that can be distributed or dispersed in the atmosphere.

Animal Health Management Plan: A facility- or operations-based plan that describes and communicates the practices that support animal health, respond to disease, and serve to limit disease risks on a dairy farm.

Biocontainment: Practices that serve to limit the possible movement of disease agents outside of an area determined to be infected with, or carrying a disease.

Bio-exclusion: Practices that serve to keep disease-risk agents away from susceptible animals.

Bio-management: Practices that are followed on a day-to-day basis to limit and control the potential impact of disease agents and the materials that house them.

Biosecurity: A set of herd management practices to prevent the introduction and spread of infectious diseases.

Biosecurity control area: Any one of four categories that have been used in the Dairy Standard to help organize, explain, and communicate how biosecurity practices apply on dairy farms.

Biosecurity protocols: Those measures specific to a dairy operation used to prevent the introduction and the spread of disease within the cattle population and from that cattle population.

Calf ranch: Term used in the U.S. for “calf pens” or other similar facilities.

Cleaning: A practice that removes accumulated organic matter and dirt – may be followed by disinfection.

Closed herd: A population of cattle that have all been bred and raised on-farm, with no purchased replacement animals of any age. If cattle are taken to a show and returned, the herd can no longer be considered closed.

Commingle: The act of mixing cattle, either with other cattle from different farms or production facilities or with other animal species, resulting in direct or close indirect contact among them.

Controlled access zone (CAZ): A designated area in which biosecurity protocols are in place and

monitored and within which livestock are managed (e.g. a location or primary location) and which is accessible to people, equipment, vehicles, and livestock only through a securable (e.g. lockable) controlled access point.

Cross-contamination: The act of mixing a material, especially a material that is potentially infectious, with another material, thereby introducing the risk that a contaminant could be transmitted to an animal. For example, disease organisms shed by sick or carrier animals can be transmitted from manure to feed by the use of a common bucket or shovel.

Dairy operation: Includes the buildings, paddocks, corrals, and pastures used at any time of the year to manage any livestock, including dairy cattle; may have one or more than one location.

Direct contact: Any form of close contact in which cattle can touch one another, including all forms of nose-to-nose contact.

Disinfection: A practice that inactivates or destroys disease organisms – must be preceded by cleaning.

Emerging disease: A disease that has either been newly discovered or is new to a geographic area or population and has been increasing in incidence. An example is Schmallenberg virus.

Endemic disease: A disease that may commonly exist in a species, in a region, or in the national herd. Examples include enzootic bovine leukosis (EBL) and bovine viral diarrhoea (BVD).

Equipment: Farm machinery, implements, and livestock conveyances; does not include vehicles for personal or business transport.

Foreign animal disease (FAD): A range of biological threats to livestock, poultry, and wildlife that are not normally found in Canada. Examples include foot-and-mouth disease and Schmallenberg virus.

Hazard and control points: Terms borrowed from Hazard Analysis Critical Control Point (HACCP) programs to denote points of risk, and the manner of addressing them.

Herd of origin: The herd within which the animal was born and raised.

Isolation: The action of restricting an animal to a location that is physically separate from other livestock. The purpose of isolating an animal is usually to prevent it from transmitting a disease to another animal, either because it is known to be diseased or because its disease status is currently unknown. The location is known as an isolation facility.

Known health status: The current state of health of the animal or the herd, including its condition and any disease(s) that the animal(s) may have or carry. Disease history, herd health management practices, vaccination program details, and housing and movement data contribute important information to determining the health status and should be made available prior to purchase.

Other livestock: Animals other than dairy cattle.

Pastures: Fenced areas used for livestock grazing at any time of year. Can include multi-use fields (e.g. graze after haying or aftermath feeding).

Pathogen (also, “pathogenic”): A bacterium, virus, or other micro-organism that can cause disease.

Paths of transmission: The physical or theoretical lines along which disease pathogens or materials potentially containing them are seen or are believed to move.

Personnel: All full-time and part-time staff, plus any family members who work in the operation.

Pests: All non-livestock and non-domestic animals, birds, and insects that may pose a health risk, either disease or predatory, to the herd; domestic scavengers such as guardian animals and farm pets that have free access to the herd and most areas on the farm. For the purpose of this standard, pests refer to vermin and wildlife. Examples include rodents such as rats and mice, porcupines, raccoons, opossum, and skunks.

Practice: General procedure that is followed by the producer, and not necessarily documented or detailed to the extent of a protocol.

Premises: A singular term that refers to a contiguous property, including buildings and other additions, used in the National Standard to describe a dairy farm.

Primary location: The main or “home” farm where the home and/or business centre of the dairy operation is located.

Producer: One who owns or operates a farm, raising dairy cattle for producing milk and milk products.

Protocol: Defined and documented procedure designed to meet an objective.

Reportable disease: Any disease outlined in the Health of Animals Act and Reportable Diseases Regulations that, if an animal is contaminated with or suspected to be contaminated with, requires immediate notification to a CFIA district veterinarian. Specific control or eradication measures exist due to the potential significant impact on animal and/or human health and the Canadian economy. Examples include bovine spongiform encephalopathy, brucellosis and bovine tuberculosis.

Restricted access zone (RAZ): An area inside the controlled access zone where animals are housed and where access by people or equipment is further limited.

Sanitation: An overarching set of practices that reduce the presence of organic material and debris as well as the presence, survivability, and infectivity of disease agents.

Segregation: The act of physically separating animals, equipment, or vehicles to prevent contact and cross-contamination.

Transition zone: A designated location for the application of biosecurity procedures to people and equipment before entering a biosecurity zone (CAZ and/or RAZ).

Visitors: Any non-farm personnel that come to the premises, including in general use, service providers, unless specified otherwise. Examples include salespeople, delivery people, veterinarians, livestock haulers, artificial insemination or embryo technicians, and feed industry personnel.

Zoonosis/zoonotic disease: A disease that can be transmitted to humans from animals, or to animals from humans. Examples include cryptosporidiosis and salmonellosis.



Bibliography

Appendix B provides a list of the selected documents from the full literature review that are directly relevant to the National Standard for dairy. These documents contain references for the outcome statements and the best practices in the National Standard, and have provided additional background and subject matter knowledge for its development.

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