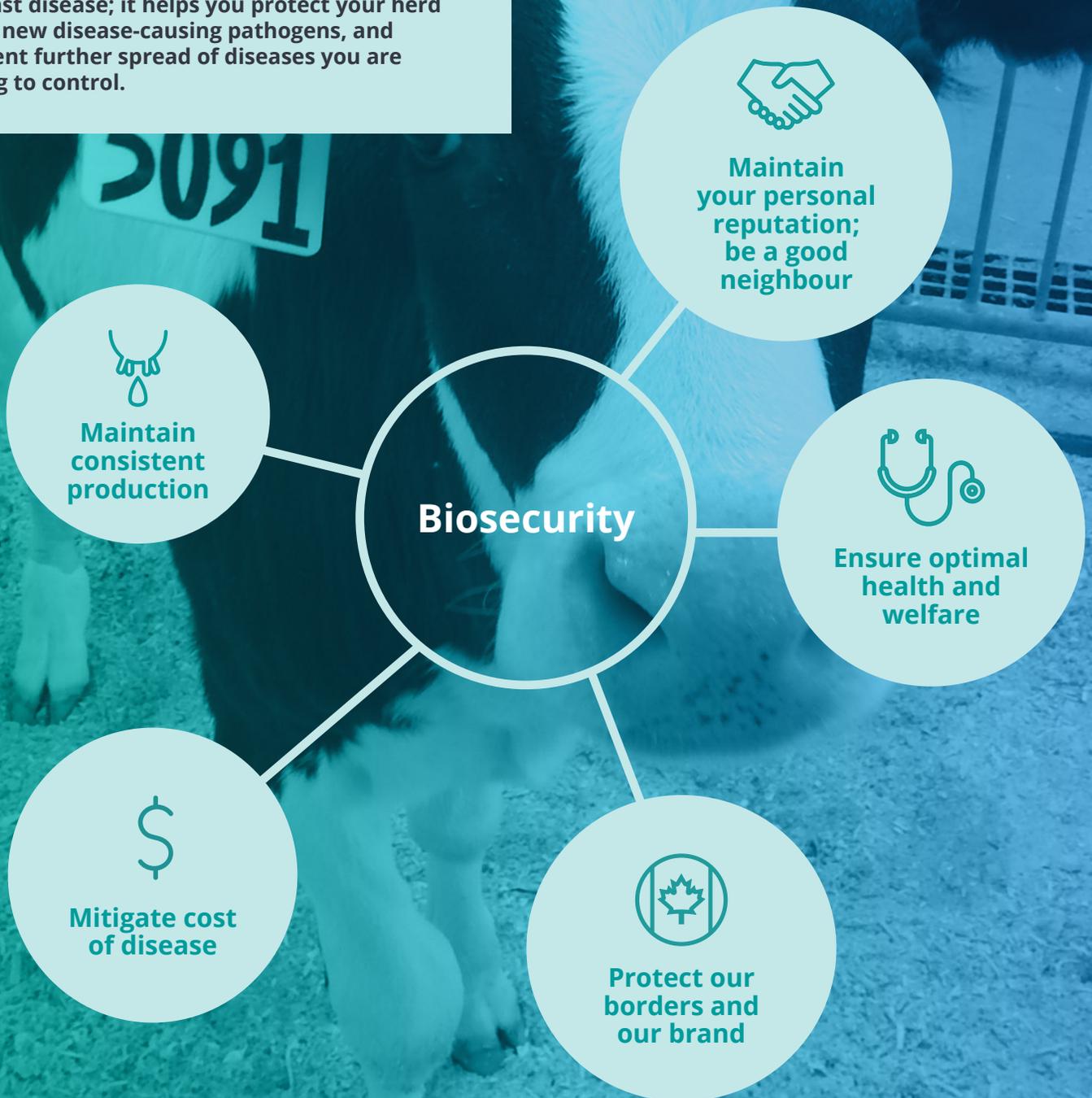


# Biosecurity: Protecting Your Herd Protects Your Bottom Line



Implementing strong biosecurity helps guard against disease; it helps you protect your herd from new disease-causing pathogens, and prevent further spread of diseases you are trying to control.



# What is Disease Costing You?

Animal health is a top priority for Canadian dairy farms. Protecting against infectious disease also helps the farm business. This table shows what the most recent scientific research has to say about how common certain diseases are, and their estimates on the average economic impacts. While these numbers are based on the most current scientific evidence, they are only estimates. The true level of disease and corresponding costs on your farm depend on a number of factors.

| Disease  | Impact On Your Bottom Line  | Likelihood of Being in Your Herd   | Estimated Yearly Cost Per Infected Animal** (Up to CAD\$) |
|--|---|--|---|
|  <b>Staph aureus Mastitis</b> <sup>1-3</sup>        |    |    | \$490 <sup>2</sup> *                                      |
|  <b>Digital Dermatitis</b> <sup>4-6</sup>           |    |    | \$186 <sup>6</sup> *                                      |
|  <b>Bovine Leukosis Virus</b> <sup>7-9</sup>       |   |   | \$635 <sup>9</sup>  |
|  <b>Johne's Disease</b> <sup>10-12</sup>          |  |  | \$416 <sup>12</sup>                                       |
|  <b>Cryptosporidium parvum</b> <sup>13-14</sup>   |  |  | \$155 <sup>12</sup>                                       |
|  <b>Salmonella Dublin</b> <sup>15</sup>           | Not well known at this time; every Canadian province has reported cases             |  | \$77 <sup>15</sup> *                                      |
|  <b>Bovine Viral Diarrhea Virus</b> <sup>16</sup> | Not well known at this time; every Canadian province has reported cases             |  | \$47 <sup>16</sup>  |



\* No current Canadian study exists. Estimate obtained from good scientific study outside of Canada  
 \*\* The true herd-level cost to your herd is influenced by a number of factors (# of infected cows, stage of infection, treatment and control strategy, stage of lactation, etc.).  
 The \$ signs provide an estimate of the magnitude of the costs to your herd.



**Talk to your veterinarian about the potential impacts specific diseases may have on your farm, and how to prevent and control them.**

# How Does proAction® Prepare You to Prevent These Diseases?

proAction provides recommendations and requirements that can help to reduce the impact that infectious diseases may have on your farm. Specifically, implementation of the biosecurity requirements or recommendations highlighted below will help prepare you to prevent and control diseases on your farm:

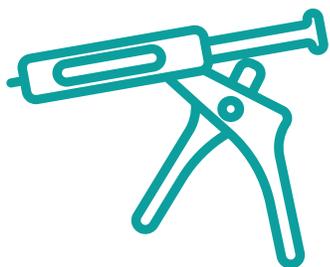


## 1. In the past 2 years, have you completed the biosecurity risk assessment with your veterinarian to identify and address biosecurity risks on your farm?

**Why?** Take advantage of a second set of eyes from your animal health professional. Your veterinarian can help you come up with reasonable solutions to help prevent disease. Identify which diseases are a concern in your herd and consider the risk assessment from that lens. What can further be improved to manage this disease?

## 2. Do you record disease events for, at minimum, cows with these signs (abortion, lameness, mastitis, diarrhea, pneumonia, death) and calves with these signs (diarrhea, pneumonia, death)?

**Why?** We can't know if things are getting better or worse if we don't measure! Keep track of disease events to closely monitor if disease rates are changing year over year. This can help to identify areas where biosecurity can be improved. Identifying and intervening early can help to minimize economic losses.



## 3. Have you established and implemented a standard operating procedure (SOP), in consultation with your veterinarian, for vaccinating against specific diseases of concern?

**Why?** Vaccines are insurance for your herd! Diseases like mastitis can have significant economic impacts on a herd (up to \$10,000 per year!), and many can be mitigated through the use of vaccines. Weigh the cost of a vaccine program with the cost of treatment, production, and animal loss — prevention is ALWAYS cheaper in the long run!

## 4. Have you established and implemented an SOP, in consultation with your veterinarian, to prevent the introduction of infectious disease when bringing new cattle into your facilities from other herds?

**Why?** As you can see from the table, Canadian dairy herds experience illness and outbreaks from time to time. If you are introducing a new animal into your herd, the chance of introducing disease is high. If you must purchase new animals, be sure to have a plan for segregating and monitoring them; be sure that you know their history, and perform disease testing before purchase.





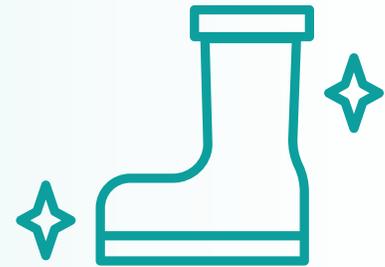
**5. Have you established and implemented an SOP, in consultation with your veterinarian, to prevent the introduction of infectious diseases by cattle returning to your facilities from other herds, cattle shows, etc.?**

**Why?** Again, diseases and outbreaks occur periodically in Canadian herds. Your animals are exposed to new risks when they leave your herd. Remember, animals may be spreading disease without showing signs. Protect your herd!

**6. Have you established and implemented an SOP, in consultation with your veterinarian, to prevent the introduction of infectious diseases by family, employees, farm visitors, and service providers?**

**Why?** Each person that comes on the farm has the potential to spread and transmit disease (on their boots, clothes). Where have they been? What new pathogens are they bringing to your barn? Having an SOP for this helps to make sure everyone that may enter your farm is familiar with your expectations of them, this will give them a fair chance to be compliant. It is your right to expect visitors to uphold your standards in the interest of the health and welfare of your herd, but it is also your responsibility to enforce these expectations.

Consider keeping extra boots and coveralls available for those that may not have them (disposable options are cheap and easy). Provide a boot wash for use before entering the production area if you have concerns.



**7. Do you have signage posted on the main access point, which is visible from the main parking area?**

**Why?** Something as simple as a sign out front can ensure that visitors don't inadvertently spread disease through the barn just to look for you. Consider having a sign at the end of your laneway, and be sure your phone number is prominently displayed. If you are easily reached, visitors will not need to track you down! Also consider requiring visitors to call ahead, and make them aware of any procedures they are required to follow prior to entry.



**Biosecurity is all about having a plan and sticking to it. It may not be flashy or exciting, but it can have real benefits when practised well. Consistency only comes when everyone knows what is expected of them. Having an SOP means you have given careful consideration to how "best practice" can be applied specifically on your farm. It also means you have a clear set of expectations (that are written out!) for everyone on the farm.**

## References

1. Canadian Bovine Mastitis Research Network. Personal communication with Dr. Herman Barkema.
2. Wilson, D.J., R.N. Gonzalez, and H.H. Das. 1997. Bovine mastitis pathogens in New York and Pennsylvania: Prevalence and effects on somatic cell count and milk production. *J Dairy Sci.* 80:2592-2598.
3. Moret-Stalder, S., C. Fournier, R. Miserez, S. Albin, M.G. Doherr, M. Reist, W. Schaeren, M. Kirchhofer, H.U. Graber, A. Steiner, and T. Kaufmann. 2009. Prevalence study of *Staphylococcus aureus* in quarter milk samples of dairy cows in the Canton of Bern, Switzerland. 2009. *Prev Vet Med.* 88:72-76.
4. Cramer, G., K.D. Lissemore, C.L. Guard, K.E. Leslie, and D.F. Kelton. 2008. Herd- and cow-level prevalence of foot lesions in Ontario dairy cattle. *J Dairy Sci.* 91:3888-3895.
5. Solano, L., H.W. Barkema, S. Mason, E.A. Pajor, S.J. LeBlanc, and K. Orsel. 2016. Prevalence and distribution of foot lesions in dairy cattle in Alberta, Canada. *J Dairy Sci.* 99:6828-6841.
6. Cha, E., J.A. Hertl, D. Bar, and Y.T. Gröhn. 2010. The cost of different types of lameness in dairy cows calculated by dynamic programming. *Prev Vet Med.* 97:1-8.
7. Nekouei, O., J. VanLeeuwen, J. Sanchez, D. Kelton, A. Tiwari, and G. Keefe. 2015. Herd-level risk factors for infection with bovine leukemia virus in Canadian dairy herds. *Prev Vet Med.* 119:105-113.
8. Nekouei, O., H. Stryhn, J. VanLeeuwen, D. Kelton, P. Hanna, and G. Keefe. 2015. Predicting within-herd prevalence of infection with bovine leukemia virus using bulk-tank antibody levels. *Prev Vet Med.* 122:53-60.
9. Kuczewski, A., H. Hogeveen, K. Orsel, R. Wolf, J. Thompson, E. Spackman, and F. van der Meer. 2019. Economic evaluation of 4 bovine leukemia virus control strategies for Alberta dairy farms. *J Dairy Sci.* 102:2578-2592.
10. Pieper, L., U.S. Sorge, T. DeVries, A. Godkin, K. Lissemore, and D. Kelton. 2015. Comparing ELISA test-positive prevalence, risk factors and management recommendations for Johne's disease prevention between organic and conventional dairy farms in Ontario, Canada. *Prev Vet Med.* 122:83-91.
11. Corbett, C.S., S. Ali Naqvi, C.A. Bauman, J. De Buck, K. Orsel, F. Uehlinger, D.F. Kelton, and H.W. Barkema. 2018. Prevalence of *Mycobacterium avium* ssp. *paratuberculosis* infections in Canadian dairy herds. *J Dairy Sci.* 101:11218-11228.
12. Roche, S.M., M. Von Massow, D.L. Renaud, D.A. Shock, A. Jones-Bitton, and D.F. Kelton. 2020. Cost-benefit of implementing a participatory extension model for improving on-farm adoption of Johne's disease control recommendations. *J Dairy Sci.* 103:451-472.
13. Trotz-Williams, L.A., B.D. Jarvie, S.W. Martin, K.E. Leslie, and A.S. Peregrine. 2005. Prevalence of *Cryptosporidium parvum* infection in southwestern Ontario and its association with diarrhea in neonatal calves. *Can Vet J.* 46:349-351.
14. Windeyer, M.C., K.E. Leslie, S.M. Godden, D.C. Hodgins, K.D. Lissemore, and S.J. LeBlanc. 2014. Factors associated with morbidity, mortality, and growth of dairy heifer calves up to 3 months of age. *Prev Vet Med.* 113:231-240.
15. Nielsen, T.D., A.B. Kudahl, S. Østergaard, and L.R. Nielsen. 2013. Gross margin losses due to *Salmonella* Dublin infection in Danish dairy cattle herds estimated by simulation modelling. *Prev Vet Med.* 111:51-62.
16. VanLeeuwen, J.A., J.P. Haddad, I.R. Dohoo, G.P. Keefe, A. Tiwari, and R. Tremblay. 2010. Associations between reproductive performance and seropositivity for bovine leukemia virus, bovine viral diarrhea virus, *Mycobacterium avium* subspecies *paratuberculosis*, and *Neospora caninum*.