

Alberta Biosecurity Champions

Debbie Oyarzun	
Eileen Chauvet	
Dave Brennan	Agriculture Service Board Program
Nicole Hornett	
Marguerite Stark	Alberta 4-H Program
4-H Specialist	
Reynold Bergen	Alberta Beef Producers
Linda Sautner	Alberta Bison Centre
Adrienne Bodnarchuk	
Lorraine Buray	Alberta Chicken
Graham Marriott	Alberta Egg Producers
Glenda Elkow	
Diana O'Hara	Alberta Elk Commission
Kathy Hunter	
Sharon Breitreuz	
Bill desBarres	Alberta Equine Federation (AEF)
Susan Church	Alberta Farm Animal Care (AFAC)
Laurie Fries	
Myrna Coombs	Alberta Goat Breeders Association (AGBA)
Jackie Dunham	Alberta Hatching Egg Producers
Dana Penrice	Alberta Milk
Kelly Mauthe	Alberta Pork
Cara Dary	Alberta SPCA
Morris Airey	Alberta Sheep & Wool
Norine Moore	Alberta Turkey
Lacey Poepping	
Darrell Dalton	Alberta Veterinary Medical Association (ABVMA)
Lorinne Shore	
Rod Hunter	Alberta White-Tailed and Mule Deer Association
Stephanie Smith	Animal Nutrition Association of Canada (ANAC)
Glenn Ravensborg	Auction Market Association
Lyle Taylor	
Doug Whiteside	Calgary Zoo
Sandy Black	Canadian Assoc. of Petroleum Producers/Sargent Consultants Inc.
Gary Sargent	
Bonnie Jensen	Canadian Food Inspection Agency (CFIA)
Scott Acker	Farmers Advocate Office
Graham Gilchrist	Federated Co-op
Sheldon Cherniwchan	Hunting For Tomorrow
Kelly Semple	Lillydale
Cynthia Chizen	Livestock Identification Services (LIS)
Dave Moss	Pat Hoffman Trucking Ltd.
Lawrence Roth	Plain Lake Colony
Ben Hofer	U of A Poultry Research Centre
Matt Oryschak	Villetard's Eggs Grading
Gary Villetard	U of A Poultry Unit
Laurie Heidebrecht	
Ron Clarke	
Brett Oliver-Lyons	
Lisa Morin	
Julia Keenlside	
Jagdish Patel	
Narine Singh	
Carolyn Jamieson	Alberta Agriculture & Rural Development

Items available to Biosecurity Champions for promoting biosecurity

Biosecurity PowerPoint presentation

Biosecurity roll-up poster

Visitor log books

Posters

Backyard flock brochures

Pens/highlighters

Gate signs 6" x 24"

Alberta

Alberta Agriculture and Rural Development
Food Safety Division

O.S. Longman Building
6909 116 Street
Edmonton, AB T6H 4P2
T. 780-427-3448
F. 780-415-0810

agriculture.alberta.ca/biosecurity

ALBERTA BIOSECURITY CHAMPIONS

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Complacency a real enemy of biosecurity

One of the more basic risks to a good biosecurity system is a tendency for people to slack off instead of being dedicated to persistently following all the best practices, says a biosecurity expert.

Biosecurity "is pretty logical stuff," says Bill Cox, a poultry health veterinarian for the B.C. Ministry of Agriculture and Lands. "But, the biggest thing is the actual execution. There are some things that could become a pain in the backside."

As an example, he says an employee or owner could get lazy and decide to just step over a boot bath to save the few seconds it would take to dip a pair of boots. Regularly changing the disinfectant solution in the boot bath could also be ignored making it less effective or ineffective.

Faithfully carrying out all the biosecurity precautions needs to reach the stage where it becomes second nature, Cox says.

One of the problems with biosecurity is you can't tell when you have prevented any disease from entering your barn. "You can't tell when you make a save," Cox says. "It's not like being a goalie in hockey where a save is obvious."

Champion in Profile

Painful experience spurred interest in horse biosecurity

Kathy Hunter remembers feeling helpless when her beloved horse Gus caught influenza while he was being kept in a stable where the disease strangles was spreading among the other four-legged boarders.

"He's a real handsome lad," she says about her 10-year-old thoroughbred paint cross. "It was devastating. I was a wreck last year."

Even though Gus was kept in an isolated paddock his barn mate got strangles, while Gus only caught influenza.

By the end of March a lot of of the horses stabled in the barn had respiratory diseases.

From late in February to the end of May the stables' operators opted to let strangles run its course. None of the horses died, but like Gus many suffered.

That emotional experience is what sent Hunter on the trail to find out all she could about biosecurity.

Hunter joined the Alberta Equestrian Federation's (AEF) biosecurity committee and also became an Alberta Biosecurity Champion.

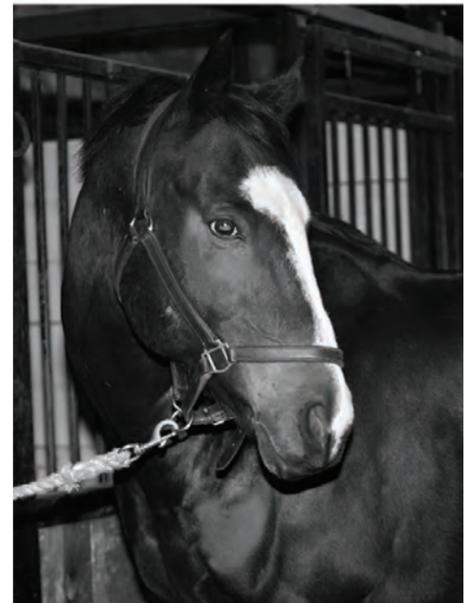
The AEF committee also includes members from the University of Calgary Faculty of Veterinary Medicine, the Alberta Veterinary Medical Association and members at large from the horse community.

"I thought we could do better in Alberta," says Hunter, who lives in Edmonton.

It's not just the economic payoff from biosecurity that motivates her.

She says she hates to think about horses suffering from a preventable infectious disease.

Please see **HORSE** on page 2



Kathy Hunter's horse Gus

Bison industry embraces biosecurity

The bison industry in Alberta is enjoying an increased demand for its meat products and a devotion to biosecurity to keep the profits flowing.

"Biosecurity is very important," says Linda Sautner, office manager for the Bison Producers of Alberta in Leduc.

There are about 680 bison producers and about 80,000 bison in Alberta.

"The producers who are still in the industry recognize more than ever, since the province's BSE crisis in 2003, the great importance of good management practices in their operations, including biosecurity," Sautner says. When the U.S. border closed in 2003, Alberta bison producers were marketing approximately 70 per cent of their product south of the border.

"Losing that market nearly crippled our industry," Sautner says.

Over the next five years, produces culled a lot of their bison, cut back on herds and breeding, and many started marketing their product via farm-gate sales and farmer's markets. Consumer demand for the meat – low in fat and high in protein and iron – started to build.

"Because we have a low supply and a high demand, the animals are getting a higher price," Sautner says.

See **BISON** on page 3



Linda Sautner, husband Jim and Bailey the Buffalo (since deceased) reposing in the couple's living room. Bailey gained world-wide fame for his visits inside the Sautner's Spruce Grove home.

HORSE (continued)

A horse owner for 20 years, Hunter says most horse owners don't know enough about biosecurity.

"There's a lot of myth and misunderstanding in the equestrian community that we need to talk about," she says. "We need to learn from experts. We need to educate ourselves better as a community."

She's been doing her part with the AEF and the Biosecurity Champions to get the word out to horse owners about the economic and animal health benefits produced by following proper biosecurity practices.

The AEF produced a brochure about biosecurity last year that gained popularity across Canada.

Hunter has also delivered presentations on the benefits of biosecurity to stables.

Dr. Darrell Dalton, deputy registrar for the AB.VMA, made a presentation to the AEF annual conference in Red Deer in March. Another presentation on biosecurity is planned for the Mane Event, an AEF conference in April in Red Deer.

Hunter and her committee harbour ambitious plans. Hunter says she'd like to see a team of experts created to help horse owners and stable owners assess their biosecurity risks and implement a suitable biosecurity program.

The committee is also interested in offering more direct outreach at horse events in Alberta.

Hunter says her zeal to help horses and their owners has paid off personally.

"The one lesson I learned as a horse owner is how crucial it is to assess the risk of infectious disease in your barn and determine the most effective vaccination program with your veterinarian," Hunter says.

Now, she hopes that payoff will extend to the entire province.

"The horse population in Alberta is not an island," says the energetic horse owner. "Infectious disease outbreaks can happen anytime and anywhere. The key is to make biosecurity an everyday practice."

"There's a lot of myth and misunderstanding in the equestrian community that we need to talk about."

Washing your hands could prevent an infectious disease outbreak

All biosecurity systems consist of some easy tasks that take only a few seconds and other protocols that take more time and therefore seem to be more important.

But Dr. Bill Cox, a poultry health veterinarian with the Animal Health Branch of the B.C. Ministry of Agriculture and Land told the Alberta Biosecurity Champions that every face of biosecurity is critical to the success of the entire program.

Cox spoke at the Biosecurity Champions' meeting in Leduc on March 11.

We might think we can skip washing your hands one day because we are pressed for time, or just feeling lazy. But that split-second decision could deliver huge consequences.

Cox said there is never a clear indication of whether any single biosecurity practice might have prevented disease from infecting a premises.

"One person washing his hands can save many other farms from catching a disease or spreading a disease."

Obviously, if no disease shows on a premises, you can't know which biosecurity measure worked.

"It's really important to understand that every act of biosecurity can actually help,"

he said. "Every little bit helps in terms of trying to minimize that disease spread. Remember, we're talking minimize, not eliminate."

Cox gave an example to illustrate his point.

"One person washing his hands can save many other farms from catching a disease or spreading a disease," he told the Biosecurity Champions.

Cox cited a 2001 study that involved implementing biosecurity practices for half of a group of poultry farms, while the rest carried on as usual, to compare them for the presence of Campylobacter, a zoonotic illness in chickens that can cause food poisoning in humans.

The farms using biosecurity implemented these tasks:

- Cleaned and disinfected the farm after the previous flock was shipped – dust was blown out of the barn, all internal surfaces were washed, the barn was dried for six hours or more and all internal surfaces were then disinfected
- Separate clean and dirty areas were set up in the barn anterooms
- Two boot dips were used – one on entry to the anteroom and one on entry to the barn
- A specified disinfectant was used
- House only boots were used

The results spoke well for biosecurity.

After 42 days, the risk of Campylobacter infection was reduced by more than 50 per cent in the barns that followed the biosecurity protocols.



BISON (continued)

There were 15,769 bison slaughtered in Alberta in 2007. In 2008, that number jumped to 19,235.

"That increase in slaughter is very indicative of the increased consumer demand and the fact that there are more avenues available now to market the meat – not just to high-end restaurants and specialty meat sellers," Sautner says, "but to more retail outlets like Sobeys and Whole Foods grocery stores."

The producers who survived the BSE border closure are recognizing that implementing biosecurity is important to their wallets. "We have to keep our guard up."

That interest in biosecurity is evident by the number of biosecurity items that are snapped up from display booths, Sautner says.

"We have been offering biosecurity products supplied by Alberta Agriculture and Rural Development that are very popular.

"A large number of producers now have (biosecurity) gate signs and are now using visitor log books," she says.

"It's not expensive to put up biosecurity signs or to use the log books," Sautner says.

"Many producers are also monitoring what livestock transport trailers last hauled and where they came from," Sautner says.

"Many people express gratitude that Bison Producers of Alberta is a member of Alberta Biosecurity Champions," she adds.

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Gate signs 6" x
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**Government
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Clean may not be Clean

Microorganisms, bacteria especially, develop unique ways of surviving our attempt to eliminate them. An important survival tool is the creation of biofilms on surfaces like the floor of a farrowing crate, on a barn wall, on milking equipment, within feedlot watering bowls and the floors and sides of trucks transporting livestock. Though only several microns thick, biofilms tenaciously protect bacteria, increasing resistance to sanitizers up to a thousand fold. Ninety-nine percent of all bacteria exist in biofilm communities, the only requirements being: a compatible surface to grow on and moisture.

Biofilms are pervasive and invisible sources of recontamination causing inapparent breaches in biosecurity. For example, the persistence of E. coli-associated diarrhea in farrowing barns - despite how clean they appear - is often the result of biofilms that trap and protect bacteria. The reappearance of salmonella in layer barns following cleaning and disinfection has been traced to biofilms on egg belts. Cases of salmonella infection in livestock acquired during transport has been linked to contact with biofilms on metal surfaces of trailers.

For years, cleaning and disinfection in animal production systems considered bacteria as free-floating colonies. Scientists now recognize that in the natural world most bacteria aggregate as biofilms (Figure 1) and bacteria in biofilms behave very differently.

The persistence of infection and risk of reinfection that biofilms represent are changing traditional biosecurity practices. In particular, strict attention must be given to complete removal of organic debris from surfaces using high pressure, heat and cleaning agents prescribed for the surfaces being cleaned. The choice of appropriate disinfectants and the conditions under which they are used are critical considerations. Allowing all surfaces to dry properly is important and a special challenge for the trucking industry during cold weather. Selection of non-porous materials for construction of buildings and equipment minimize surface defects where bacteria can be sheltered in biofilms. Cost and durability are limiting factors.

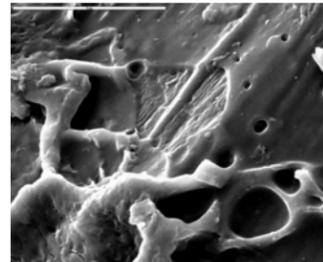


Figure 1.

Biofilms develop in three phases. First, offending bacteria find a favorable surface where they attach and rapidly multiply. If not disturbed by cleaning and disinfection, the growing mass of bacteria soon create a resistant, gelatinous matrix that envelops and protects the entire colony. Biofilms spread as protected colonies break away and reattach on adjacent surfaces.

Bacteria in animal production systems can never be totally eliminated. A critical starting point, however, is understanding that bacteria exist in resistant and invisible biofilms and that biofilms present unique challenges to the design of biosecurity programs. Assuming that "visibly clean is probably not clean" is a good place to start.

The body of information on biofilms is extensive and more comes onto line everyday. Biosecurity Champions may find the following of interest:

1. http://www.edstrom.com/DocLib/4230-DS3100_CompleteBiofilm.pdf
2. <http://www.erc.montana.edu/>

ALBERTA BIOSECURITY CHAMPIONS

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FAO Biosecurity Tool Kit

The overarching goal of biosecurity is to prevent, control and/or manage risks to life and health. Biosecurity is based on recognition of the critical linkages between sectors. Inadequate controls in one sector can have farreaching consequences for other sectors making biosecurity an essential element of sustainable agricultural development.

The Food and Agriculture Organization (FAO) Biosecurity Toolkit describes a strategic and integrated approach to biosecurity. Principles within the document have direct relevance to consumer expectations about food safety, preventing and controlling zoonotic disease, ensuring the sustainability of agriculture, safeguarding terrestrial, freshwater and marine environments, and protecting biodiversity.

The first part of the toolkit provides a broad introduction to biosecurity and describes development and implementation of an integrated biosecurity approach across all sectors. The second part provides guidance on how to assess biosecurity capacity across sectors and sector organizations. The third part of the toolkit presents a generic guide to the structure and application of risk analysis principles in biosecurity.

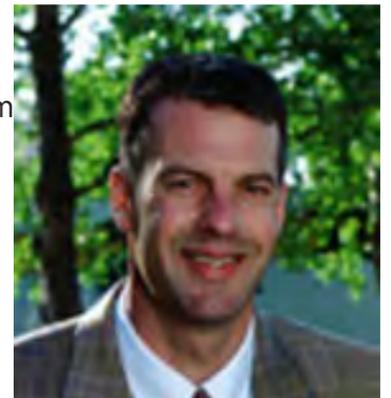
For more information: <http://www.fao.org/docrep/010/a1140e/a1140e00.HTM>

Champion in Profile

David Moss - Livestock Identification Services (LIS) Ltd.

David is Chief Operating Officer of LIS, headquartered out of Calgary. He has been in and around the cattle industry all his life, growing up the son of a large animal practitioner in rural Alberta and co-manager of a family owned feedlot, custom silage and cow/calf operation at Bassano. In 1997, David moved to High River where he assumed the position of General Manager of Cattle Operations at Western Feedlots, Canada's largest custom feedlot with a one-time capacity of 96,000 head.

David holds a Bachelor of Management degree from the University of Lethbridge and a Master's Certificate in project management. He is married with three teenage children.



Dave Moss

David has spent time in South America and US on development of a source verified ranch to retail alliance now operational in Texas. His work was a key impetus behind the Canadian Food Inspection Agency's recognition of the Computer Visioning System as an accepted grading tool, a world first. David has been Chief Operating Officer of LIS for the past 6 years.

The first law that required the branding of livestock was passed in 1878 in what was then the North West Territories. The law made it necessary to record every brand used in the territory that would eventually become Alberta. For over 131 years the permanent mark of a hot iron brand has been evidence of ownership in Alberta.

The National Biosecurity Resource Centre for animal health emergencies

The National Biosecurity Resource Centre links the user to a wide variety of resources related to biosecurity. Maintained by Purdue University and endorsed by the Animal and Plant Health Inspection Service of USDA and the Office of Homeland Security, NBRC is a source of information on topics like significant animal disease events around the world, a catalogue of current information on foreign animal diseases, regional responsibilities related to emergency response plans and a host of biosecurity fact sheets on subjects like disinfection guidelines and a directory of truck wash stations by state. Purdue University also offers web-based, graduate certificate programs in Animal Health Emergency Management. The Purdue site contains many great ideas, perhaps a model for collaborative Biosecurity Champion initiatives in the future.

For more information:
<http://www.biosecuritycenter.org/>

LIS (continued)

On January 1, 2009, the Livestock Identification and Commerce Act (LICA) was proclaimed. The new Act, a consolidation of the *Brand Act*, *Livestock Identification and Brand Inspection Act* and *Livestock and Livestock Products Act* followed five years of consultation with key industry groups, Alberta Agriculture and Rural Development and the industry owned LIS, (formed in 1998).

Through LICA and LIS, the Alberta livestock industry realizes:

- increased security and confidence in marketing Alberta livestock
- inclusion of other identifiers in addition to brands e.g. tattoos, tags, markings, etc.
- reduced risk of non-payment for animals sold
- protection of sales proceeds
- confirmation of ownership
- enhanced capability to trace animals and animal movement
- an improved transportation permit system

LIS employs 95 certified livestock inspectors throughout the province and is responsible for the inspection of approximately 6 million head of cattle and horses annually. Associated with the LIS team are two RCMP Livestock Inspectors who lead investigations related to the theft of livestock.

LIS staff have developed a biosecurity protocol that will minimize the risk of transmitting disease between the many premises inspectors enter and exit as part of their duties. " We have an Area Managers meeting on the 28th of August where, after testing the biosecurity procedure for the last two months, we will implement it across the province. I have received the support of the Board of Directors for the procedures and shared it with others in the industry," said David.

Biosecurity



Small Things Count

The kaleidoscope of marvels modern science parades through our world seems unending. The explosion of information about our universe, much of it at a molecular level beyond the senses of most, both astounds and overwhelms.

The product of all this is complacency, a human norm when average people grow weary of trying to comprehend things like supercomputers, nanotechnology, robotics, genetic engineering and the entire gamut of biotechnology.

There too, is the growing dependence on artificial intelligence, the kind that jumps at us from computer screens, a dependence that often smothers the human ability to utilize logic in managing risk - a trait that once set us apart from ancestors during our descent from the forest canopy. The endless search for sophisticated ways to gather, harvest and understand the rush of new information frequently trumps an old-fashioned ability to think.

So what does this have to do with biosecurity?

In a world where volumes of new information exceed the human capacity to process it and where the quest for answers to complex issues becomes the empty glare of a computer screen, simple things get forgotten. And biosecurity is about simple things, about thinking and doing simple things right every time.

We only need to look as far as the promotional messages developed by the Biosecurity Champions to regain the sense of simplicity that underlies much of what biosecurity is all about:

1. Biosecurity is a set of practices that prevent the incidental spread of disease.
2. Biosecurity doesn't have to be expensive to be effective.
3. Investing in biosecurity is good business.
4. Biosecurity can be a collection of simple steps.
5. To be effective, biosecurity measures must be part of the daily routine.
6. Biosecurity is important for all types of livestock.
7. Biosecurity is important for anybody who comes in contact with livestock or places where livestock have been.
8. Biosecurity combined with early detection reduces the impact of disease.
9. Biosecurity represents an opportunity to increase competitiveness.
10. Biosecurity works best when we all work together.
11. People need to understand why the biosecurity protocol is being used before they will use it.
12. Biosecurity is everybody's business.

Biosecurity practices are already a part of our daily life. It starts with basic things like washing hands, cleaning boots or isolating livestock following purchase.

Diseases are usually spread inadvertently through oversight. Billions have been spent controlling foot and mouth disease in Great Britain, equine influenza in Australia and during the recent US recall of 30 million pounds of peanut products contaminated with salmonella. Each case started with a niggling breach in biosecurity. Closer to home, gaps in the chain of biosecurity left us with BSE, avian influenza, H1N1 in swine herds and ILT in broiler breeders.

Biosecurity does matter. It starts with the small things.

"Right actions for the future are the best apologies for wrong ones in the past."

Tyron Edwards

Contributors this Issue:

Ron Clarke
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Do not wait for leaders; do it alone, person to person ...

Mother Teresa
(1910 - 1997)
Albanian Missionary