CEPTOR

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Animal Health and Welfare, OMAFRA
1 Stone Road West, Guelph, Ontario N1G 4Y2

Leslie Woodcock	(519) 826-6364

Wellington Place, R. R. # 1, Fergus, Ontario N1M 2W3

Neil Anderson	(519) 846-3410
Tim Blackwell	(519) 846-3413
Ann Godkin	(519) 846-3409
Jocelyn Jansen	(519) 846-3414
Bob Wright	(519) 846-3412
Kathy Zurbrigg	(519) 846-3418

OVC, University of Guelph, Guelph, Ontario N1G 2W1

Babak Sanei	(519) 824-4120 ext. 54650

Office of the Chief Veterinarian, OMAFRA
1 Stone Road West, Guelph, Ontario N1G 4Y2

Chief Veterinarian	Deb Stark	(519) 826-3528
Assistant Chief Veterinarian	David Alves	(519) 826-3127
Provincial Biosecurity	Paul Innes	(519) 826-4043
Epidemiology	Bruce McNab	(519) 826-4178

Swine Welfare Pays Off

Patrick O'Neil, Ontario Pork Marketing Board and
Kathy Zurbrigg, Animal Health and Welfare, OMAFRA

In 2005, the Quebec processing plant, DuBreton, began purchasing hogs from Ontario Producers for the 'Certified Humane' line in addition to the regular and organic pork lines. Producers who supply the Certified Humane line must meet the husbandry standards of the Humane Farm Animal Care (HFAC) program and pass a third-party farm audit. In return, producers receive a premium per pig shipped. The actual price paid is based on cost of production figures calculated in OMAFRA's Swine Enterprise Budgets with an $18/100-kg dressed-carcass-weight premium over the break-even price for farrow to finish producers.

Good welfare is found on Ontario swine farms. However, DuBreton is looking for several specific management practices. Three of the key requirements for the program are: in-feed antibiotics can only be used when prescribed by a veterinarian to treat a specific disease; group housing for gestating sows; and freedom of movement for the sow during lactation. This can be achieved through either turn-around farrowing crates or farrowing pens.

Currently, all of the pork products in the DuBreton Certified Humane label are shipped to the United States. The products are selling well and the plant foresees significant growth of this label and the certified Organic label. DuBreton is working with Ontario Pork to recruit new producers who meet the requirements.

Many of the logistical challenges associated with a niche market are being addressed by Ontario Pork. For example, Ontario Pork has put conventional hogs on the same truck as Certified Organic or Certified Humane hogs, to ensure the freight costs to the plant remain reasonable. This potentially high growth market is still limited, so producers who are interested in the agreement are advised to come forward and sign an agreement before investing in renovations.

If you know of a swine producer that has the key requirements for the humane-raised program and is interested in receiving a premium for their specific husbandry practices, please contact:

Patrick O'Neil, Ontario Pork Marketing Board (519) 767-4600, or
Kathy Zurbrigg, OMAFRA (519) 846-3418

Contact: Kathy Zurbrigg, Animal Health and Welfare
Ontario Ministry of Agriculture, Food and Rural Affairs
Wellington Place, R.R. #1, Fergus, Ontario, Canada N1M 2W3
Tel: (519) 846-3418 Fax: (519) 846-8101
E-mail: kathy.zurbrigg@ontario.ca

Free Trade and Biosecurity; there's the Rub.

Tim Blackwell, Animal Health and Welfare, OMAFRA and
Christian Klopfenstein Mmv PhD, CDPQ, Quebec

Disease in livestock operations takes money out of the pocket of producers and enthusiasm out of their day. Keeping diseases out of a livestock operation is referred to as biosecurity. Biosecurity exists at three levels.

Level one is **within-farm biosecurity.** The goal of level one biosecurity is to prevent disease in some animals on the farm from infecting others. Proper sanitation at milking time can prevent mastitis from transferring from one cow to another. Changing boots and coveralls and washing your hands is all that is generally needed to prevent a PRRS virus infection from moving from a finishing barn back into a naïve group of nursery pigs. Veterinarians are well aware of the critical control points for preventing the within-farm transfer of pathogens.

Level two biosecurity is **between farms**. The goal is to prevent diseases from outside a farm entering onto the farm. Level two biosecurity emphasizes factors such as testing all purchased animals for diseases of interest prior to purchase. It also emphasizes cleaning and disinfection of people, trucks or equipment entering a farm from unknown or potentially contaminated sources. Unfortunately many diseases of livestock are spread by aerosol, insects, birds, rodents, and various other fomites and vectors. Therefore controlling level two biosecurity can be extremely challenging and occasionally discouraging for producers and veterinarians.

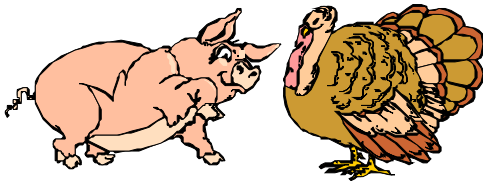
Level three biosecurity is **between countries**. The goal is to keep foreign animal diseases from entering a country that is free of those particular diseases. Breakdowns in level one or two biosecurity most commonly result in added costs and headaches for individual producers. When a breakdown in level three biosecurity occurs, the results are devastating, even for producers whose herds remain uninfected. Loss of markets, restrictions on the movement of animals and feed, and catastrophic drops in commodity prices make level three biosecurity failures the most important of all.

Unfortunately, the significant economic benefits from increasing free trade or international passenger travel also have the undesirable effect of adding pressure to our level three biosecurity system. Today, sows in Ontario may be impregnated with semen from Europe, the resulting pigs may be moved to Iowa to be finished, sent to slaughter in Kentucky, and the final product sold to Japan. Many experts estimate that it could require several weeks after entry before a foreign animal disease is definitively diagnosed in a new country. Ensuring high levels of biosecurity at levels one and two on a farm will help prevent the introduction of diseases endemic to Canada. However, free trade may ensure that a foreign animal disease travels widely before it is recognized in its new location. Free trade and passenger travel will increase in the future. Therefore, it is imperative that our level three biosecurity can accommodate the increasing pressures originating from the ever freer international movement of people and products.

Effective October 2006, the extension for all OMAFRA e-mail addresses has changed to firstname.lastname@**ontario.ca**. Please make any necessary changes to your Address Book.

What Do Pigs and Turkeys Have in Common? Swine Influenza Virus

Tim Blackwell, Animal Health and Welfare, OMAFRA



Over a year ago, a large number of swine herds reported clinical signs consistent with swine influenza virus (SIV). Based on laboratory reports, a large percentage of these herds were infected with a new strain of SIV called H3N2. Clinical signs were severe in some herds. Coughing, respiratory distress, high fevers, and severe anorexia were among the more commonly reported observations. Many herds appeared to recover uneventfully seven to ten (7-10) days after clinical signs were first observed and many producers decided "that wasn't as bad as it seemed." Then came the repeats. Many herds reported sows failing to conceive on their first estrus after the outbreak. Some breeding-herd operators reported a decrease in their normal conception rates of 10 to 20%, which persisted for one to two months after an SIV outbreak. Many of these repeat breeders did not have any obvious clinical signs that would be associated with damage due to an SIV infection such as weight loss or difficulty breathing. The infertile sows appeared strong and vigorous but failed to conceive. Many of these sows had regular cycles and were bred three and four times without success before eventually being culled. This is difficult to explain, since seldom is pathology identified in the reproductive tract of sows during an outbreak.

Turkey hens are also susceptible to the H3N2 strain of SIV. In turkey hens, the only clinical sign that is commonly reported is a complete or nearly complete cessation of egg production. It would appear, at least in turkeys, the virus has some affinity for the reproductive tract. Perhaps lesions in the reproductive tract of sows are not commonly reported because it is younger pigs that are most often selected for post-mortem examination. If a sow dies and is submitted for post-mortem examination, it is often an acute death in a late pregnant sow. Lesions in the reproductive tract could easily be overlooked if they existed at all. Although abortions are occasionally reported during an SIV outbreak, they are usually assumed to be the result of pyrexia and not a direct effect of the virus on the sow's reproductive system. If the opportunity presents itself, it may be worthwhile in the future to look for reproductive pathology in sows with SIV infection. It may be that a small percentage of sows suffer pathology similar to that observed in turkeys.

CEPTOR is Available Electronically.

Since its inception in May of 1993, CEPTOR's readership has continued to grow. We now print and distribute more than 900 copies to veterinarians, educators and industry personnel in Ontario and throughout Canada. CEPTOR does not accept sponsorship or advertising to offset the publishing costs. In an attempt to reduce current costs, we are asking our readers to switch from a paper to an electronic copy of CEPTOR, if possible. Readers considering the switch should have high-speed internet/email access, as there are often a large number of graphics in each issue. CEPTOR is emailed as a PDF file. Many of you contact us for permission to reprint CEPTOR articles in client handouts or for your own newsletters. Copying and pasting from a PDF file would make this process quicker and easier!

If you would like to receive CEPTOR electronically, please email Kathy Zurbrigg.
kathy.zurbrigg@ontario.ca

Emergency Slaughter in Place

Bob Hayes, Food Inspection Branch (FIB), OMAFRA

Last month, several training sessions were held throughout Ontario to provide information on the procedures for emergency slaughter and other amendments to the Meat Regulation, O. Reg. 31/05. A total of 64 appointed veterinarians and 131 Meat Hygiene Officers attended. Seventeen OMAFRA staff and nine industry members participated in two sessions held at 1 Stone Road in Guelph in mid-October.

These sessions generated much interest and enthusiasm and FIB is busy fielding questions and providing further information. Veterinarians must be appointed under the *Food Safety and Quality Act* and have received training for emergency slaughter. Contact Dr. Gabriel Ferdinand or Dr. Robert Hayes (Pager number 1-800-263-1420) with inquiries for appointment under the *Food Safety and Quality Act* or for Emergency-Slaughter training.

Meat from animals slaughtered under the emergency slaughter provisions is now eligible for sale. In addition, on-farm slaughter is still permitted for personal consumption. On-farm slaughter meat may not be sold.

Update on Pigeon Paramyxovirus-1

Babak Sanei, Animal Health and Welfare, OMAFRA
Bruce McNab, Office of the Chief Veterinarian for Ontario, OMAFRA

Pigeon and poultry producers in Ontario should be aware that the Animal Health Laboratory (AHL) of the University of Guelph has noted an increase in the number of cases of pigeon paramyxovirus-1 diagnosed in submissions to the laboratory. The AHL normally sees a few cases per year, but has seen 17 cases during the first 11 months of 2006. Pigeon paramyxovirus-1 is closely related to Newcastle Disease Virus (NDV). The velogenic or highly pathogenic form of NDV is a federally reportable disease. The Canadian Food Inspection Agency (CFIA) takes aggressive action against velogenic NDV. But the CFIA does not take action against the non-reportable pigeon paramyxovirus-1 because it does not usually cause significant disease among commercial poultry.

The pigeon paramyxovirus-1 currently occurring in some pigeon operations in Ontario warrants monitoring for three reasons:

1. It is causing illness and mortality in infected, non-vaccinated pigeon flocks. This year, appears to be affecting more flocks than usual.
2. Although pigeon paramyxovirus-1 is usually low pathogenic (lentogenic) or medium pathogenic (mesogenic) in non-vaccinated chickens and turkeys, it can become more pathogenic if it cycles for a number of viral generations in such flocks.
3. Pigeon paramyxovirus has the potential to spread to commercial chicken and turkey flocks if there is a gap in biosecurity practices.

Owners should consult their veterinarians about vaccinating their birds for paramyxoviruses. As always, biosecurity is important to prevent spread and exposure to unwanted viruses. This is particularly important to flocks that are normally not vaccinated for NDV, such as meat production broiler chickens and turkeys. Owners of all flocks should be careful to ensure birds,

farm personnel and equipment do not have direct or indirect contact with birds (wild or farmed) infected with pigeon paramyxovirus-1 or other paramyxoviruses.

Ontario Surveillance:
An Update on Avian Influenza, West Nile Virus and Lyme Disease

Bruce McNab, Office of the Chief Veterinarian for Ontario, OMAFRA

Avian Influenza

Ontario continues to participate in the 2006 national surveillance project for in wild birds, coordinated by the Canadian Cooperative Wildlife Health Centre (CCWHC). Information gained through the survey is helping people interested in animal and public health to better understand the frequency and distribution of different influenza viruses in the wild. As of mid-November, over 8,000 wild birds had been tested nationally, including over 600 from Ontario. None of those were positive for the Asian H5N1 HPAI. Various low pathogenic strains have been detected, as expected. For more information and survey results, go to http://wildlife1.usask.ca/. Anyone noticing dead wild birds, particularly waterfowl or significant numbers of any type of dead wild birds in one location in Ontario, should contact the Guelph office of the CCWHC at 1-866-673-4781. For more information on avian influenza in Ontario see www.ontario.ca/birdflu

West Nile Virus

The West Nile Virus (WNV) season has come to an end for another year. As of mid-November there were 42 human cases reported, including 17 with neurological signs, five requiring hospitalization and one death attributed to WNV. There were 256 positives among the 972 wild birds tested by the CCWHC. At least one positive wild bird was found in each Public Health Unit Region, demonstrating WNV activity occurred across the entire province. Over 19,000 pools of mosquitoes from traps were tested and 182 were found to be WNV positive. Three horses, of 45 submissions to the AHL requesting testing for WNV, tested positive. Two of the three positive horses had not been vaccinated for WNV and the third had an unknown vaccination history. For more information and maps summarizing WNV surveillance in people, birds, mosquitoes and horses see www.health.gov.on.ca/english/public/program/pubhealth/westnile/wnv_mn.html

Lyme Disease

In a recent presentation to Ontario public health officials, Health Canada's Dr. Robbin Lindsay described a study conducted during the summer of 2006 that confirmed the presence of established populations of black legged ticks and small rodents infected with *B. burgdorferi* in St. Lawrence Islands National Park, south east of Gananoque. Established areas of Lyme disease in Ontario had been previously reported by Dr. Ian Barker, Ontario Veterinary College, at Long Point, Point Peele and Rondeau, on the north shore of Lake Erie. The full extent of the established areas in Ontario is not known. Infected ticks can also be spread at lower densities throughout the province adventitiously on birds migrating from endemic areas. Public health officials report five to ten Ontario-acquired cases of Lyme disease in people each year. It may be prudent for veterinarians to consider Lyme disease as a potential rule-out in arthritic dogs, and caution clients to prevent exposure to ticks.

Hub-Spokes-Rim Pen Layouts for Group-Reared, Milk-Fed Calves

Neil Anderson, Animal Health and Welfare, OMAFRA

Producer enquiries indicate a need for floor plans to suit automatic and free-access calf-feeding methods. A hub-spokes-rim layout merits consideration for group-reared, milk-fed calves using automated feeding systems. Enclosing the layout in straight-sided or round, cold barns could provide healthy environments for calves and hospitable workplaces for producers.

The "hub", a central warm room, could shelter computerized or free-access feeding systems, water lines, milk, supplies, records, and workers. This multi-sided room could provide wall space for nipples, water, and starter on the calf-pen side. Windows for viewing would be an asset. The "spokes" are gates that divide the calf housing into several pens. Each pen should house eight (8) or fewer calves. A gate on the opposite end could hold hay feeders. The "rim", an outside alley, provides access for hay-feeding, bedding, handling calves, and cleaning. It should be wide enough for those activities. Since this calf housing will be cold, bedding should be straw, especially during fall, winter, and spring.

Figure 1. Three examples of hub-spokes-rim pen layouts for milk-fed calves. The designs include a central warm room for automatic or free-access feeding equipment, cold housing for groups of calves in pens, and an exterior alley to provide access for bedding, cleaning, and handling. The basic design consolidates the most frequent husbandry operations, primarily feeding, and cold sensitive systems at the hub. It also facilitates feeding groups of calves with automated methods.

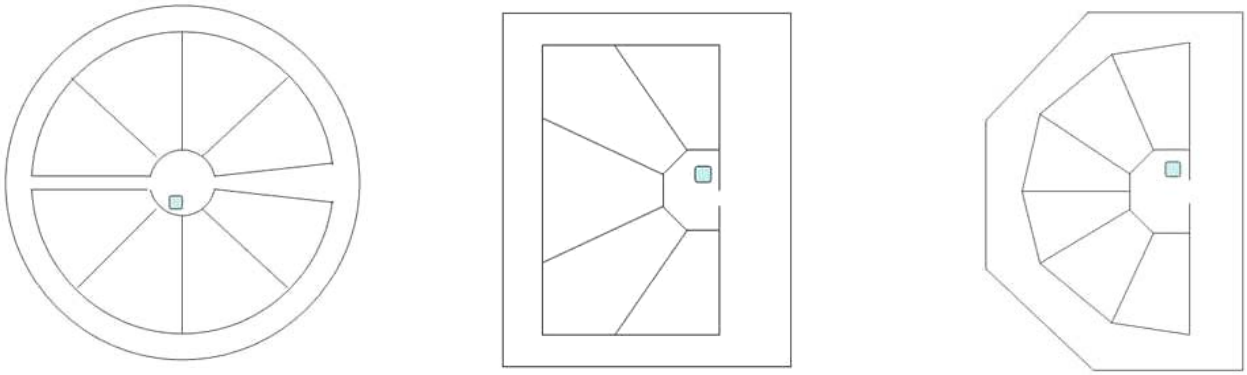


Figure 1

Figure 2. A shed converted to a hub-spokes-rim layout. The rectangular "hub" is a heated room during cold months. It has an entrance/exit on facing ends. Two pens face each of the other two sides of the hub. A service alley is under the roof of the naturally ventilated building. The barn provides comfort for calves and workers using a free-access feeding system.

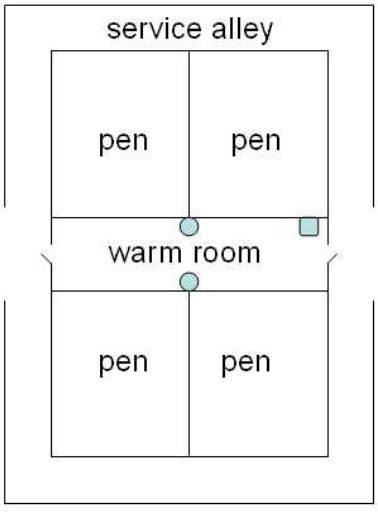


Figure 2

The Roundhouse – Unique Handling and Housing for Farm Livestock

Neil Anderson, Animal Health and Welfare, OMAFRA

Round was the shape of choice for buildings during the Iron Age about 2600 years ago. Roundhouses excavated at brochs in Scotland are examples. Recently, Mr. Geoff Simpson chose round, rather than rectangular, to build unique handling and housing facilities for cattle. His concepts from the United Kingdom may interest Ontario producers.

Figure 1

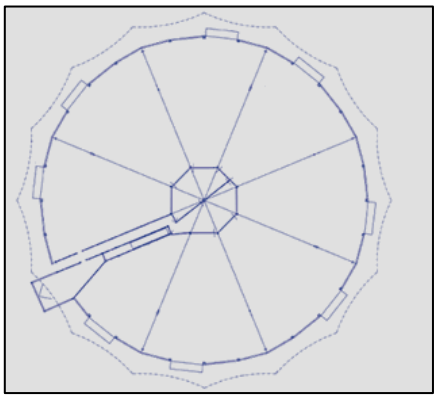


Figure 2

The photo above (**Figure 1**) shows the exterior of Simpson's *Roundhouse.* The diagram to the right (**Figure 2**) shows a layout with 8 pens for heifers or dry cows. First, Mr. Simpson designed the interior for ease of handling and comfort. Next, he added a round roof. The *Roundhouse* has a central kingpin, 8 trusses and 16 perimeter supports. There are no internal walls. Geoff Simpson and his partner, John Allinson, own Roundhouse Building Solutions Ltd. Their website contains photos, a link to a video, and layouts for beef cattle, sheep and pigs. You can learn more by going to www.roundhouseltd.co.uk.

Figure 3

An article in Stackyard News, an online agricultural newspaper, describes the barn. The adjacent photo (**Figure 3**) from their website shows the central handling facilities. The centre section has sufficient space to hold all animals from one pen for handling, processing or while cleaning their pens. You can read their report at www.stackyard.com/news/2006/07/machinery/04_roundhouse.html.

Closer to home, a round barn stands on the site of the Outdoor Farm Show near Woodstock. SunNorth Systems (Seaforth, ON) used their curtain-wall technology to build it as a riding arena for horses. Country Heritage Park in Milton, Ontario, is the home of a magnificent round barn. Case IH partnered in the restoration. For a photo, see www.countryheritagepark.com (Click on Sponsors/Partners Affiliations.)

Tenderfeet – Dairy Cows with Thin, Bruised and Ulcerated Soles

Neil Anderson, Animal Health and Welfare, OMAFRA

An outbreak of lameness among lactating dairy cows began about 18 months after the cows entered a new free-stall dairy barn. The herd's professional claw trimmer found thin soles (commonly ⅛-inch), sole bruising and ulcers.

The claw lesions appeared to have a mechanical origin. Therefore, I led an inspection of the paths taken by the cows. An obvious hazard was the footbath floor in each return alley from the parlor.

Figure 1 shows aggregate projecting above the concrete in a footbath. Sharp protrusions were obvious when one passed the palm of a hand over the surface. Two sharp pieces of aggregate are circled in the photograph. Copper sulfate and formaldehyde were the chemicals used in the footbath. The concrete had a broom finish done at the time of construction.

Figure 1

In addition to lameness, cows were reluctant to enter the parlor. The floor could be the reason for their apprehension. The owner installed a rubber mat to protect claws at the next passage of cows through the parlor. Time will tell if it prevents new cases of bruising or remedies the slowness to enter the parlor. When looking for environmental causes of lameness, we need to inspect cow paths. We may need to remove our shoes and socks to feel what cows feel.

Environmental Mastitis in a Sand-Bedded, Free-Stall Barn

Ann Godkin, Animal Health and Welfare, OMAFRA, and
Ken Leslie, Department of Population Medicine, Ontario Veterinary College

A producer reported high levels of clinical mastitis two years after moving into a new, sand-bedded, free-stall barn. Mastitis cases occurred throughout all stages of lactation. Some weeks, only two to three cases occurred. During the early summer of 2006, the rate of clinical mastitis had increased to two to three cases per day. Bulk tank milk SCCs, since movement to the new barn, had always been below 100,000 cells/ml, but were now rising. Cultures of milk samples from a few of the affected cows showed *E. coli*, *Serratia marcesens* and *Arcanobacter pyogenes*.

Deep "valleys" were visible in the back one-third of many stalls. Concrete curbs were visible on about half the stalls. Owners pulled manure out of the backs of the stalls at each milking time (2X) and usually once around mid-day. They added sand to the fronts of the stalls once per month. When needed, they raked sand from the fronts of the stalls to the back.

As part of the herd investigation, sand bedding samples were collected and submitted for analysis of bacterial contamination to the Mastitis Research Laboratory at the Ontario Veterinary College. Samples were collected from the fronts and backs of five stalls in both lactating cow groups, at both ends and the middle of two outside rows of stalls. For comparison, samples from new sand stored outside the barn were also collected on the same day as delivery.

Bacterial culture results are in the table and graphs shown below. **Table 1** demonstrates that bacterial counts in the new sand were low. Counts in the stalls were higher. Total bacteria counts from the backs of the stalls were higher than those from the fronts for four of the five stalls sampled. Coliforms had the highest counts of the three species separated out for identification, and varied widely from stall to stall. On three stalls, the coliform counts from the backs were much higher than the fronts, while, on two, the difference in counts was small.

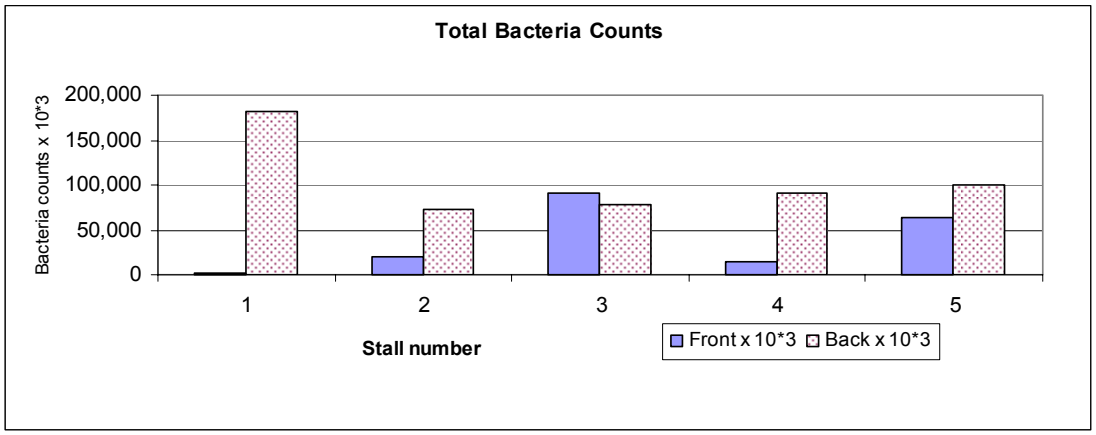
Researchers suggest that bacterial numbers exceeding one million colony forming units per millilitre (CFU/ml) put cows at risk of mastitis. All of the stall samples collected (five fronts, five backs) had total counts that exceeded this benchmark. After differentiation, for coliforms, three of the backs and none of the fronts were over one million CFU/ml. For the environmental *Streptococcus sp.* and *Staphylococcus sp.* results, five of the backs and four of the fronts exceeded one million.

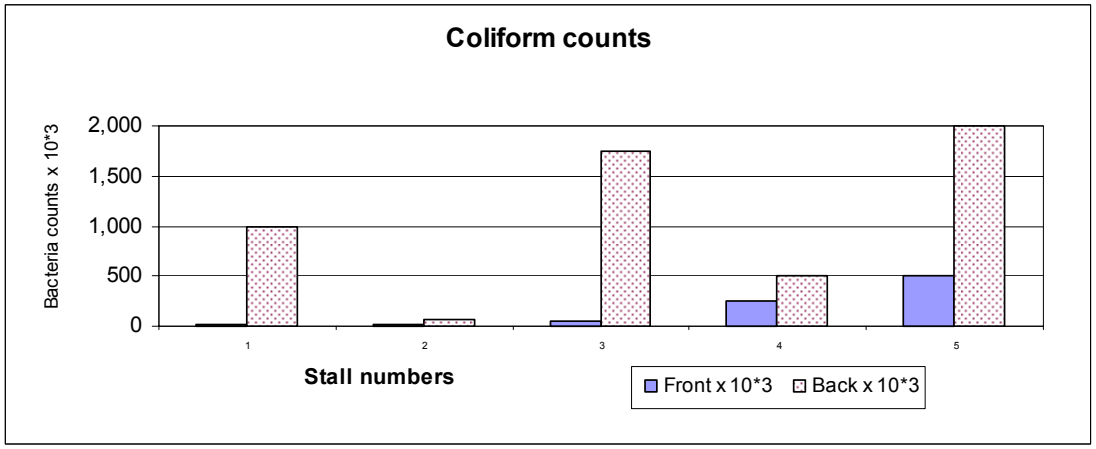
To reduce the daily exposure of the cow's udders to environmental mastitis bacteria, changes to stall management were recommended. Specifically, it was recommended that the stall surfaces be leveled (front to back and side to side) each day. New sand was to be added every other day to the backs of the stalls so that the level maintained meant that the back curbs of the stalls could not be seen. Removal of manure and dirty sand twice daily at milking time was to continue.

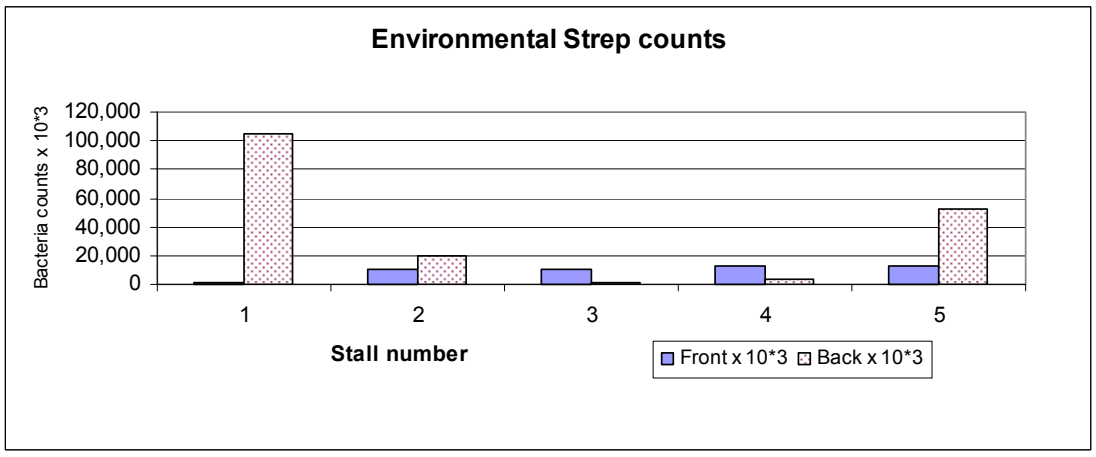
Table 1: Bacteria Counts in Sand Bedding in Five Stalls (Sampled Front and Back) in a New Free-Stall Barn, and Sand Before Use (New Sand #1 & #2).

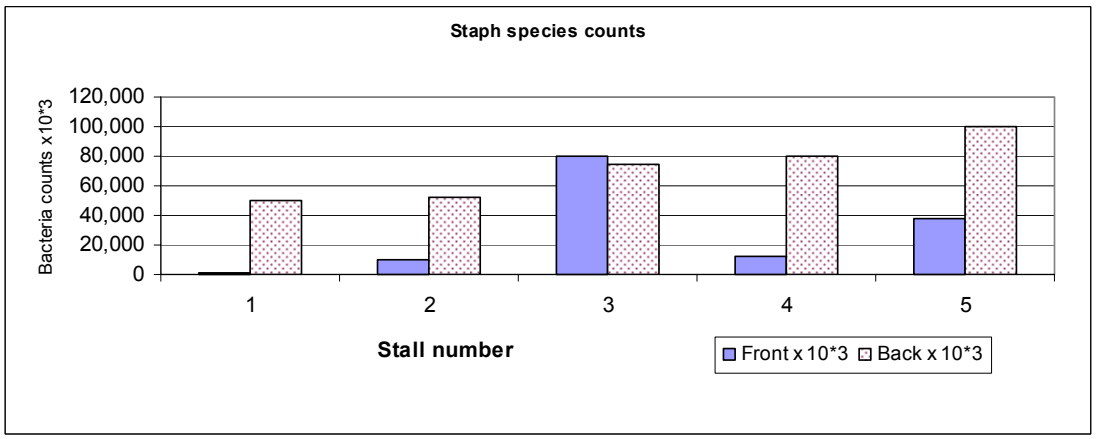
Bacteria Counts in Sand Bedding (CFU/ml x 10*3)									
Barn	**Stall**	**Coliforms**		**Environmental Streps**		**Staph. species**		**Total Bacterial Counts**	
		Front	**Back**	**Front**	**Back**	**Front**	**Back**	**Front**	**Back**
South side	Stall 1 (3rd from west)	25	1,000	750	105,000	750	50,000	1,575	181,000
	Stall 2 (17th from west)	17.5	75	10,000	20,000	10,000	52,500	20,042	72,587
	Stall 3 (6th from east)	50	1,750	10,000	1,250	80,000	75,000	90,100	78,002
North side	Stall 4 (4th from west)	250	500	12,500	3,250	12,500	80,000	15,250	91,250
	Stall 5 (12th from west)	500	2,000	12,500	52,500	37,500	100,000	63,000	100,000
New Sand # 1		**5**		**10**		**1.25**		**16.25**	
New Sand # 2		**.5**		**.5**		**5**		**5.5**	

Graphs 1 to 4. Bedding Counts from Five Stalls (Fronts & Backs).
(Note that the scale on the y axis varies among the graphs.)









IBR Abortion with a Twist

Brendan O'Connor, Veterinary Pathologist, Prairie Diagnostic Services, Saskatoon, SK
(reprinted with permission of and thanks to Animal Health Perspectives,Prairie Diagnostic Services and Saskatchewan Agriculture and Food, Saskatchewan, November 2006)

We are all familiar with the usual pattern of IBR abortion storms due to Bovine Herpesvirus-1 (BHV-1) infection in non-immune cattle herds. It typically causes a high number of cows or heifers, in late gestation, to abort over a short period of time. The fetus usually dies in utero and is quite autolysed when it is expelled a few days later. Nonetheless, the pathologist usually sees typical microscopic lesions of multifocal necrosis in the liver in these cases. The diagnosis can be confirmed by additional tests, such as immunohistochemistry (IHC), fluorescent antibody testing (FA/FAT) or virus isolation (VI) on that organ. We usually do not find significant lesions in other organs.

Abortion rates of 50 per cent or more can occur over a few weeks in some affected herds. Annual vaccination of the breeding herd is widely practiced in Western Canada and usually prevents abortion. As a result, BHV-1 is identified as the cause in only about 10 per cent of the aborted bovine fetuses submitted to the PDS diagnostic laboratory each year. This report describes an outbreak of IBR abortion which occurred shortly after vaccination and in which there was an unusual pattern of lesions present in the fetuses.

This is how the episode occurred, as I understand it, from the information provided to me. In February 2006, the owner of 340 Simmental-cross beef cows called his local veterinary clinic to purchase IBR vaccine for his herd. He was a regular client and his request for supplies for his annual vaccination program was a routine one. His veterinarian knew the herd had been vaccinated against Infectious Bovine Rhinotracheitis virus (IBRV) in previous years so he agreed to provide a modified-live IBR-BVD vaccine, recommended for use in pregnant cattle, which have previously been vaccinated.

The client failed to mention to the veterinarian that he had not vaccinated his replacement heifers the previous year and that he had also purchased a number of bred cows, of unknown vaccination history, from an auction sale a few weeks previously. He injected the whole herd with the modified-live vaccine on February 9. On March 1, one cow aborted and there were five more abortions within a week. All abortions occurred in two-, three- or four-year-old cows.

By this stage, calving was already underway. Eighty of the 340 cows calved normally. However, by the time the episode was over, one-third of the previously unvaccinated heifers and the recently purchased cows had lost their calves. No similar losses occurred in the rest of the herd.

To investigate the cause of the abortions, the veterinarian carried out post-mortem examinations on several calves and submitted a full range of tissues to the laboratory for histopathologic examination and additional testing. The first case I examined was aborted about six weeks before term and the findings were typical of IBR abortion. There was focal necrosis in the liver and the result of the IHC test was positive for BHV-1. The results of virus isolation attempts were negative, most likely due to the severe autolysis of the tissues.

Thereafter, several other submissions were examined and included full-term calves, that were born alive and died soon afterwards, as well as fetuses, aborted in the last four to six weeks of gestation. All of these cases were confirmed to be due to IBR virus, indistinguishable from

BHV-1 by IHC or VI. Most lacked liver lesions but had severe viral encephalitis and nephritis. One case also had ophthalmitis.

The conclusions from this case are:

1. Liver lesions may not be present in all cases of IBR abortion and other organs, such as the brain, kidneys and eyes may be targeted under certain circumstances;
2. When providing modified live IBR vaccine for intramuscular use in pregnant cattle it is critical to confirm that *all* the animals have been vaccinated previously, otherwise abortion and perinatal deaths may occur in a naive group.

CanWest DHI Provincial Johne's Disease Testing Results

Jocelyn Jansen and Ann Godkin, Animal Health and Welfare, OMAFRA

As part of the extension efforts with the Johne's Disease (JD) Prevention Project, we want to keep veterinary practitioners up-to-date on the results of all JD testing. The following test result information has been created using aggregate data from all herds that have tested at CanWest DHI for JD, not just those on the JD Prevention Project. Results are from March 2005 to October 2006. All testing is with the CanWest DHI milk ELISA test. Remember that herd testing is voluntary. These are not data from a formal survey with a randomly selected group of herds. This means this data does not provide information on provincial JD prevalence rates.

CanWest DHI Testing: Number (percent) of Herds with ≥1 JD Milk ELISA Positive Cow, by Province

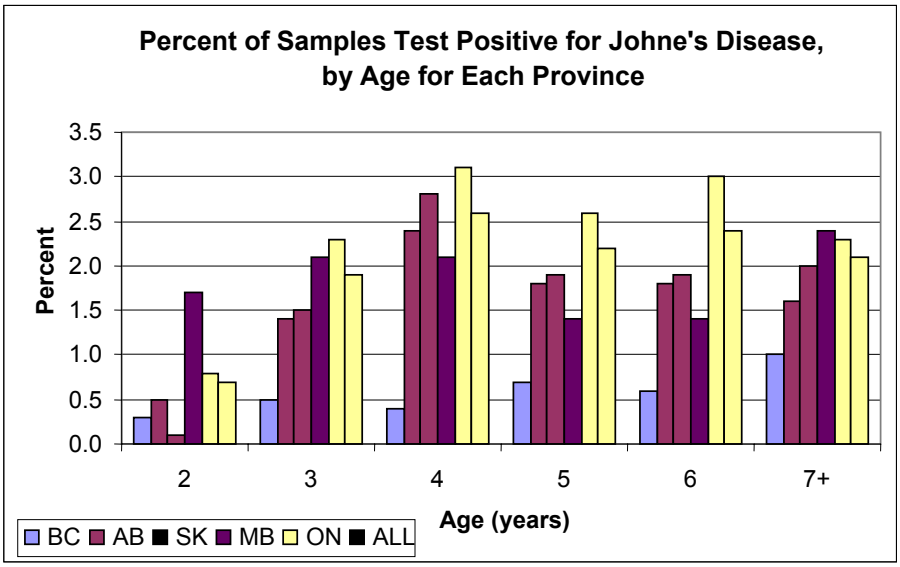
Province	Number (percent) of Herds with ≥1 Positive Cow*	Total # of Herds
British Columbia	12 (25.5%)	47
Alberta	23 (39.0%)	59
Saskatchewan	7 (23.3%)	30
Manitoba	21 (48.8%)	43
Ontario	154 (37.0%)	416
Total	**217 (36.5%)**	**595**

*Herds must have tested ≥60% of the lactating cows to be included in this table.

CanWest DHI Testing: Individual Cow JD Test Results, by Province

Province	# Positive Cows	# Suspect Cows	# Negative Cows	Total
British Columbia	21 (0.5%)	10 (0.2%)	4114 (99.3%)	4,145
Alberta	79 (1.5%)	24 (0.5%)	5098 (98.0%)	5,201
Saskatchewan	43 (1.5%)	6 (0.2%)	2768 (98.3%)	2,817
Manitoba	65 (1.9%)	9 (0.3%)	3335 (97.8%)	3,409
Ontario	544 (2.2%)	104 (0.4%)	24199 (97.4%)	24,847
Total	**752 (1.9%)**	**153 (0.4%)**	**39514 (97.8%)**	**40,419**

CanWest DHI Testing: Percent of Samples Positive for JD, by Age for Each Province



Note: Some herds have chosen not to test 2-year-old cows.

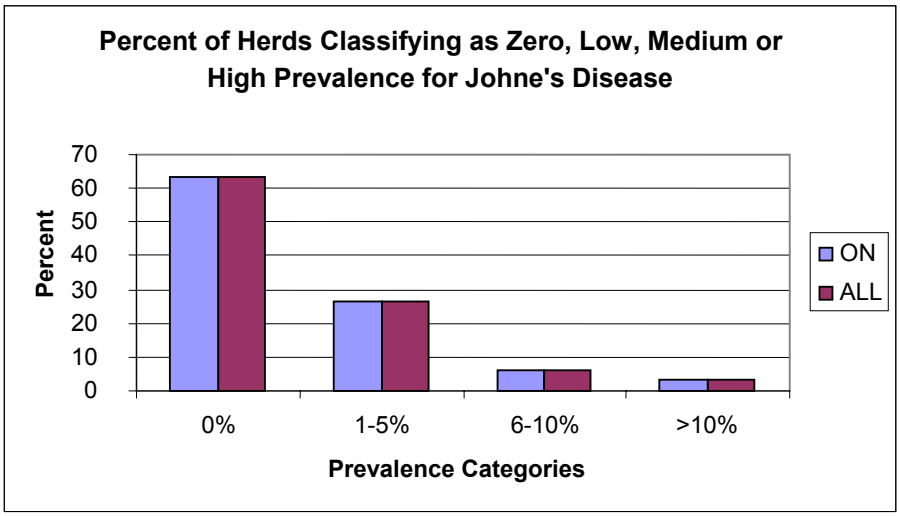
For example, in British Columbia, 0.3% of all 2-year-olds tested had milk ELISA test result titres that were classified as positive for JD. This does not include any animals that had titres that were classified as suspicious.

CanWest DHI Testing: Ontario: JD Test Results by Herd Size

	Category: Ontario Herds Classified by Percent Positive for JD*				
Herd Size**	**0%**	**1-5%**	**6-10%**	**>10%**	**Total**
<50	108 (70.6)	30 (19.6)	8 (5.2)	7 (4.6)	153 (100.0)
50-100	134 (63.2)	49 (23.1)	18 (8.5)	11 (5.2)	212 (100.0)
>100	20 (39.2)	26 (51.0)	5 (9.8)	0 (0.0)	51 (100.0)
Total	262	105	31	18	416

*Herds must have tested ≥60% of the lactating cows to be included in this table.
**Lactating and dry cows.
Percent positive range = 0% to 34.6%.

CanWest DHI Testing: Ontario Compared to all 5 Provinces: Percentage of Herds Classifying as Zero, Low, Medium or High Prevalence for JD



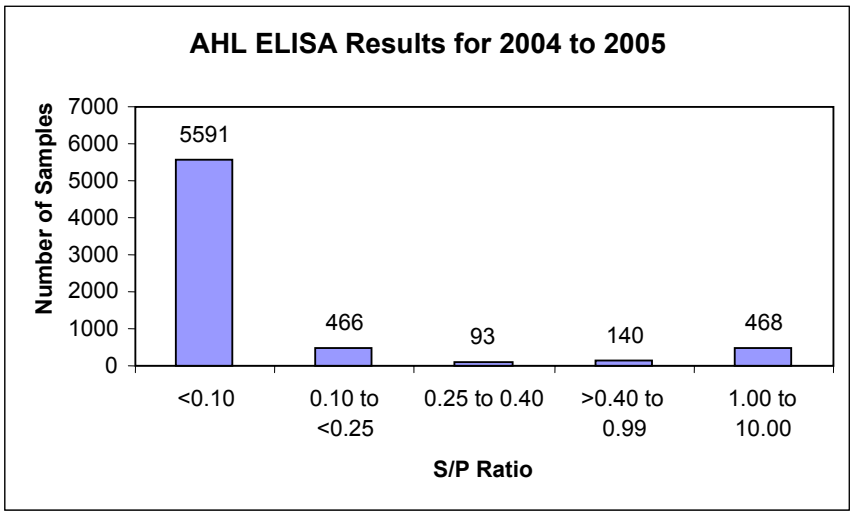
AHL Johne's Disease Test Results for Dairy and Beef Cattle (2004 - 2005)

Jocelyn Jansen, Animal Health and Welfare, OMAFRA

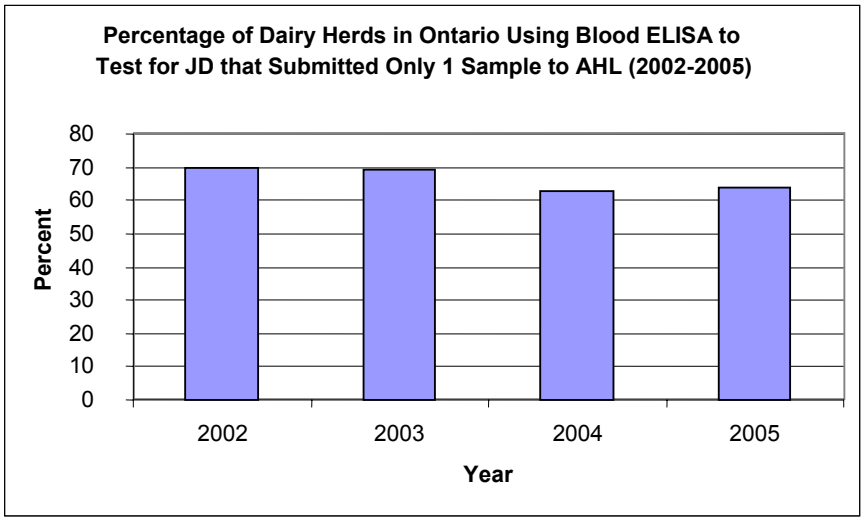
A total of 6,758 blood samples from dairy and beef cattle were submitted to the Animal Health Laboratory (AHL) in Guelph for testing using the Johne's Disease (JD) IDEXX ELISA during 2004 and 2005. The results were as follows:

5,591 (82.7%) classified as "negative" (S/P ratio < 0.10)
466 (6.9%) classified as "suspicious" (S/P ratio 0.10 – 0.24)
701 (10.4%) classified as "positive: (S/P ratio ≥ 0.25)

Samples from dairy cattle (6,469) accounted for most of the ELISA submissions. Of these, 9.8% of the samples tested positive for JD.



In total, there were 1,087 "case submissions" to the laboratory. A case submission includes samples from a group of animals with a similar problem, submitted on the same day from the same owner and location. This suggests that about 1,000 dairy herds submitted at least one sample to the laboratory over the two-year period. On average then, the number of samples submitted per herd remained low. While the sensitivity and specificity of the ELISA are high (>90%) for identifying JD infection when clinical signs are present in the sampled animal, the sensitivity of the test for identifying sub-clinically infected individual animals is low (10 to 40% reported, depending on age and other factors). Thus, the sensitivity of identifying a positive herd remains low if few samples per herd from non-clinical animals are submitted.

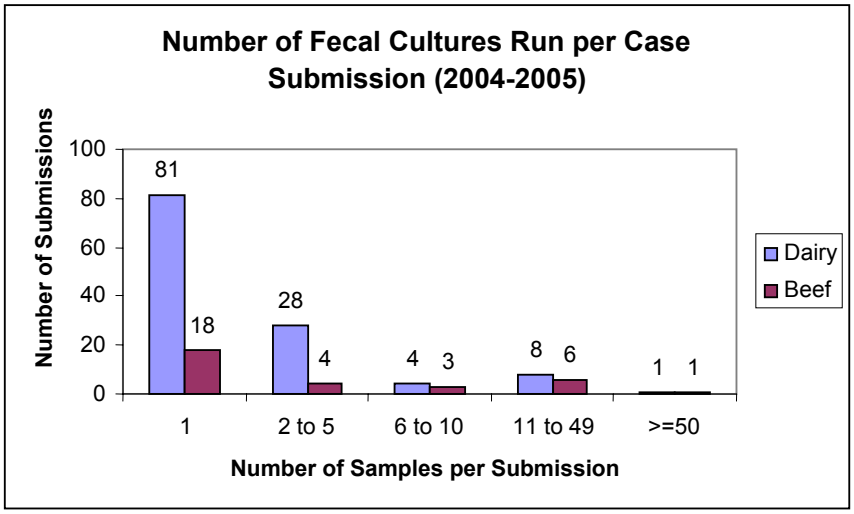


Seventy-eight of 96 clinics that submitted samples for JD testing received at least one positive test result.

A total of 732 fecal samples from dairy and beef cattle were submitted to the AHL for JD testing during the same period of time. Fecal culture results were as follows:

78.4% negative
21.6% positive

Fecal samples were submitted to determine the status of animals with clinical signs suggestive of JD, to confirm ELISA test-positive results, or to estimate the prevalence of JD in a group of animals or the herd. Sixty-six percent of dairy herds submitting fecal samples to the AHL submitted 1 sample, while 56% of beef herds submitted 1 sample. Some 1-sample submissions were pooled fecal samples of 2-5 animals.



Final Call for Johne's Disease Prevention Project

Ann Godkin and Jocelyn Jansen, Animal Health and Welfare, OMAFRA

We are on a final push to complete the enrolment of the 400 spaces that have been allotted to Ontario in the second part of the JD Prevention Project. To date (late November 2006), 311 producers have been enrolled. We still have room for more herds and would be grateful if you could let us know as soon as possible of any herds you plan to enrol. You can do this by contacting Mary Van den Borre at the Fergus OMAFRA office, mary.vandenborre@ontario.ca , (519) 846-0941. We want to close down registration, having used up all of our "spots", by the end of December this year.

Thanks to all of you who have already taken the time to enrol producers on the project and perform the risk assessment for dairy heifer replacements. The interest shown by practitioners and producers has been very rewarding and bodes well for continued JD prevention.

BSE Resources Online

The California Dairy Quality Assurance Program (CDQAP) has a Bovine Spongiform Encephalopathy (BSE) online resource center for dairy producers and their advisors. It contains frequently asked questions and answers, as well as a video on preventing BSE in dairy herds. www.cdqa.org

Ontario Sheep Health Program – A Flock Health Program for Veterinarians

Paula Menzies, Department of Population Medicine, Ontario Veterinary College

Several years ago, the sheep industry, working with researchers at the University of Guelph, developed a flock health program designed to give a structure to the relationship between the veterinarian and producer. The Ontario sheep industry has been in a strong growth phase for almost two decades, mainly because of excellent and diverse markets for all classes of lamb and mutton available to it. Its main market area, Toronto, is one of the most ethnically diverse communities in the world. However, the province only produces approximately half of what it consumes. One of the biggest constraints on marketing Canadian lamb is the lack of a sufficient supply of lamb year round.

The traditional method of managing sheep production is annual spring lambing and fall marketing of heavy lambs for slaughter. Market prices tend to be lowest in the fall when pastures are done and highest at Christmas, Easter and early spring when the fewest lambs are available. To overcome these issues, a large proportion of producers have adopted practices that both increase productivity and target lamb production for the best markets.

This intensive production cycle requires a very high level of management in order to maintain the health of the ewe so that she is able to lamb frequently, and to prevent disease outbreaks in housed situations in which the density of lambs tends to be high. The Ontario Sheep Health Program (OSHP) was designed to aid producers and veterinarians to control diseases and improve reproductive and lamb-rearing performance of these prolific ewes. The program stresses health management as opposed to treatment of disease. It also encourages producers to also focus on biosecurity, on-farm food safety and monitoring of productivity. It is compatible with other Ontario and Canadian sheep management programs.

Overview of the Ontario Sheep Health Program

The goal of the OSHP is to promote better flock health, a valid veterinary-client-patient relationship and to encourage producers to analyse flock productivity and set goals. The complete program can be found at www.uoguelph.ca/~pmenzies/OSHP_Home.htm.
The OSHP is comprised of three (3) sections:

- Flock health management assessment form, which includes a flock health status report and a recommendations form.
- Biosecurity assessment form, which includes a biosecurity status report.
- Flock productivity calculation and goal setting form.

The Ontario Sheep Marketing Agency (OSMA) (www.ontariosheep.org/) is the producer organization that oversees enrolment and status assignment. In order to enrol in the program, the producer contacts OSMA, fills out an application form and remits a fee. A binder with the required forms is forwarded to the producer. Forms can also be downloaded from the website and the $75.00 fee is remitted when complete forms are submitted. They then contact their flock veterinarian to set up the initial visit for completing the requirements.

The requirements to have status in the program are:

- Year 1 – complete the flock health management section with the flock veterinarian. Complete the biosecurity status report. Set goals for those productivity parameters that are required but, for the first visit, it is not necessary to calculate current productivity. Annual veterinary visits must be done to maintain status.
- Years 2 and on – as for year 1, but must also calculate flock productivity for those parameters that are required.

Flock Health Management Assessment
This form is divided into nine sections, which cover most of the common disease issues: reproductive management; lambing time diseases of ewes; improving survival of lambs; nutritional diseases; parasitic diseases; predator losses; diseases causing lameness; control of diseases that cause wasting in adult sheep and sheep management tools, such as handling facilities and record keeping. Each section has prompting questions that the veterinarian can use to guide discussion. A section is provided for notes. At the end of the review, veterinarians can use the summary of specific flock health recommendations in order to leave written instructions for the client. The client may also wish a summary of risk level for the different diseases, as assessed by the veterinarian.

Biosecurity Assessment
Except for flocks also enrolled in the Ontario Maedi Visna Flock Status program, there are no biosecurity requirements for the OSHP. The intent of this section is to make producers aware of practices that may introduce disease and/or spread disease around in a flock. The assessment is divided into two (2) sections: **risk from animals,** which includes risk from introduction or contact with sheep of unknown health status, as well as risk from other ruminants, deadstock, manure and non-food animals (e.g. cats, vermin); and **risk from people and equipment,** which includes risk from veterinarians, shearers, livestock vehicles and feed and water. If the owner and veterinarian wish, scores can be assigned to each section – with risk from animals counting twice as much as the risk from humans and equipment. For each of 14 sections, a score of 0 (low risk), 1 (moderate risk) or 2 (high risk) is assigned. The higher scores are associated with riskier biosecurity.

Flock Productivity Assessment
For this section, producers may use the paper forms to calculate annual productivity, or they may use an Excel (Microsoft) spreadsheet that has been specifically designed for the OSHP. Producers that use Ewe Byte sheep management software can produce a report that calculates the same productivity measures. The parameters that must be calculated by the end of the first year are: annual adult mortality and cull rates; annual lambing rates, lambs born / exposure to the ewe; lambs born / lambing; length of lambing period; stillbirth and pre-weaning mortality rates; and lambs weaned per exposure and per lambing. For these parameters the producer must also set a goal. There are many more optional parameters that the producer may calculate – both annually or by breeding group for those that have more than one lambing (e.g., accelerated lambing programs).

The sheep industry in Ontario is recovering from the loss of markets because of BSE in cattle. Ewe lamb retention numbers are increasing. Sheep producers have not traditionally been big users of veterinary services, possibly to the detriment of flock health and food safety. The OSHP offers an accessible, structured program that will help the producer to implement practices that will not only reduce disease but improve productivity.

Acknowledgements
Chara Coulter, Project Manager of the Ontario Sheep Marketing Agency, The Ontario Ministry of Agriculture, Food and Rural Affairs, The Gartshore Memorial Sheep Research Trust Fund and the University of Guelph.

Additional Sheep Programs Available to Ontario Producers

Paula Menzies, Department of Population Medicine, Ontario Veterinary College

Ontario Sheep Flock Improvement Program

This program, run by the Ontario Ministry of Agriculture, Food and Rural Affairs, assesses the genetic value of sheep and also offers some productivity calculations – although it does not include information from ewes that do not lamb. This program not only offers genetic indexes but also maternal and sire Expected Progeny Differences. It is currently free to Ontario producers. www.omafra.gov.on.ca/english/livestock/sheep/facts/info_sfip.htm

Canadian Sheep and Lamb Food-Safe Farm Practices

This program is a national on-farm food safety program that attempts to minimize risks to the consumer from physical hazards (e.g., broken needles), chemical hazards (e.g., drug residues) and biological hazards (e.g., Salmonella). Record keeping with respect to drug use and inventory records is the cornerstone of this program along with annual audits.
www.cansheep.ca/english/coffs_practices.htm

Ontario Maedi Visna Flock Status Program

There are currently three (3) maedi-visna (MV) control programs in Canada – all voluntary and similar in approach (test and remove plus biosecurity). The Quebec and Ontario programs use an ELISA developed by the Canadian Food Inspection Agency, while the Western Flock Health Program uses a CAE ELISA. MV is a common disease in central Canada but currently, because of this program, a nidus of MV low risk seed-stock producers exists, particularly those with maternal genetics. www.uoguelph.ca/~pmenzies/mv/index.html

Canadian Voluntary Scrapie Flock Certification Program

This program offers three (3) pathways to achieve certified status for scrapie: Pathway 1 requires national identification of the sheep, an annual inventory and testing of all mature dead sheep for scrapie and it takes a minimum of five (5) years to reach certified status; Pathway 2 has the same requirements as #1 but, on the initial visit, all ewes are genetically tested at codon 171 and all QQ ewes are then tested for scrapie using the 3rd eyelid test (minimum 50 ewes); Pathway 3 also has similar surveillance requirements as pathway 1 but offers a shorter course if the producer genetically tests either the entire flock or just the rams, and then breeds for resistance to scrapie. The program was released late fall. www.scrapiecanada.ca/

Continuing Education/Coming Events

Jan. 10 - 11, 2007	Dairy Farmers of Ontario Annual Meeting, Fairmont Royal York Hotel, Toronto. (905) 821-8970, www.milk.org/corporate/view.aspx
Jan. 12 - 15, 2007	Equine Reproductive Management and Artificial Insemination, Equine Reproduction Lab, Colorado State University, Fort Collins, CO. Contact Course Coordinator, (970) 491-8373, equinesc@colostate.edu, http://equinescience.colostate.edu/content/view/41/39/.
Jan. 13 - 17, 2007	North American Veterinary Conference (NAVC), Orlanda, FL. Contact Colin Burrows, Executive Director, NAVC, 5003 SW 41st Blvd, Gainesville, FL 32608; (352) 375-5672, Fax: (352) 375-4145. www.tnavc.org/mynavc/Home/tabid/235/Default.aspx
Jan. 16, 2007	Techniques for Handling and Utilizing Cooled Equine Spermatozoa, Equine Reproduction Lab, Colorado State University, Fort Collins, CO. Contact Course Coordinator, (970) 491-8373, equinesc@colostate.edu, http://equinescience.colostate.edu/content/view/41/39/
Jan. 16 - 19, 2007	"This Global Business of Pork," Banff Pork Seminar, Banff, Alberta www.banffpork.ca
Jan. 18 - 20, 2007	Western Canadian Association of Bovine Practitioners Annual Conference, Saskatoon Inn, Saskatoon, SK. Contact Phyllis Mierau, 1-866-269-8387, info@wcabp.com, www.wcabp.com
Jan. 21 - 24, 2007	National Mastitis Council 46th Annual Meeting, San Antonio Marriott Riverwalk, San Antonio, Texas. www.nmconline.org
Jan. 25 - 27, 2007	Ontario Veterinary Medical Association Annual Conference, Westin Harbour Castle, Toronto. 1-800-670-1702, www.ovma.org
Jan. 30, 2007	Tie Stall Housing Design Seminar, Linwood Community Centre, Linwood. Agricultural Information Contact Centre 1-877-424-1300, ag.info@ontario.ca (Alternate dates and locations: Feb. 13, 2007 - Woodstock OMAFRA Office, Woodstock, and March 20, 2007 - Alfred College (Room 264), Alfred.)
Jan. 31, 2007	26th Annual Centralia Swine Research Update, Kirkton-Woodham Community Centre, Kirkton. www.centraliaswineresearch.ca/
Jan. 31 & Feb. 1, 2007	Free Stall Housing Design Seminar, Linwood Community Centre, Linwood. Agricultural Information Contact Centre 1-877-424-1300, ag.info@ontario.ca (Alternate dates and locations: Feb. 14 & 15, 2007 - Woodstock OMAFRA Office, Woodstock, and March 21 & 22, 2007 - Alfred College (Room 264), Alfred.)
Feb. 14 - 16, 2007	Johne's Disease Seminars for veterinary practitioners with Dr. Mike Collins, held in three locations: Winchester, Stratford and Guelph. Contact Ann Godkin or Jocelyn Jansen (519) 846-0941.

Feb. 14 - 16, 2007	Organic Livestock Health and Management, Alfred State College, Alfred, NY. Contact Lisa McCrory, (802) 434-4122, lmccrory@together.net or Linda Tikofsky, (607) 255-8202, lg40@cornell.edu; www.qmps.vet.cornell.edu/
Feb. 15 - 17, 2007	"Soaring in Formation," Ontario Association of Veterinary Technicians Conference, Sheraton Downtown, Toronto. (519) 836- 4910, www.oavt.org
Feb. 18 – 22, 2007	79th Annual Western Veterinary Conference, Mandalay Bay Convention Center, Las Vegas, NV. info@wvc.org or www.wvc.org
March 3 - 6, 2007	American Association of Swine Veterinarians 38th Annual Meeting, Orlando, Florida. (515) 465-5255, www.aasv.org/annmtg/index.html
March 6 - 8, 2007	"Producing for Expanding Markets," Ontario Large Herd Operators 9th Dairy Symposium, Four Points Sheraton, London. www.lho-ontario.ca/symposiums.htm
March 6 - 8, 2007	Organic Livestock Health and Management, University of New Hampshire, Durham, NH. Contact Lisa McCrory, (802) 434-4122, lmccrory@together.net or Linda Tikofsky, (607) 255-8202, lg40@cornell.edu; www.qmps.vet.cornell.edu/
March 19 - 21, 2007	American Dairy Science Association (Midwestern Section) and American Society of Animal Science Annual Meeting, Polk County Convention Center, Des Moines, Iowa. www.asas.org/midwest/2007/

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Kathy Zurbrigg, Animal Health and Welfare, Ontario Ministry of Agriculture, Food and Rural Affairs
Wellington Place, R.R. # 1, Fergus, Ontario N1M 2W3
Tel.: (519) 846-3418 Fax: (519) 846-8101 E-mail: kathy.zurbrigg@ontario.ca

Comments: .....

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Deadline for next issue: February 23, 2007

Ontario
Ministry of Agriculture, Food and Rural Affairs

Animal Health and Welfare
2nd Floor, Wellington Place
R.R. #1, Fergus, Ontario
N1M 2W3