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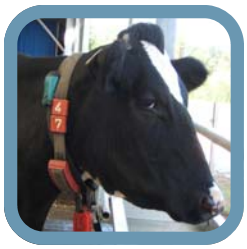

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Ministry of Agriculture, Food and Rural Affairs

Ontario

Equine Neurological Disease Surveillance Update

Kathy Zurbrigg, Veterinary Science and Policy Unit, OMAFRA

Veterinarians are reminded that laboratory-confirmed cases of West Nile (WNV), Eastern Equine Encephalitis (EEE), Rabies and Equine Herpes Virus (EHV1-Neuropathic strain) in Ontario are posted by county on the OMAFRA website:
www.omafra.gov.on.ca/english/livestock/horses/facts/nhd_surv2011.htm

To date, there have been eight cases of WNV reported by the Animal Health Laboratory (AHL), University of Guelph: two in Simcoe county, three in the City of Toronto, one in the City of Brantford, one in Grey county and one in the United County of Leeds and Grenville.

Three cases of EEE have been reported by the laboratory, all from Eastern Ontario: two in the County of Stormont, Dundas and Glengarry and one in the United County of Leeds and Grenville.

Fact sheets on Equine Encephalitis diseases and controlling mosquitoes on the farm are available on the OMAFRA website:
www.omafra.gov.on.ca/english/livestock/horses/facts/info_equv.htm

www.omafra.gov.on.ca/english/livestock/horses/facts/info_mosq.htm

N.B. The Public Health Agency of Canada (PHAC) reported 37 human clinical cases of WNV in Ontario as of Sept 24, 2011.

WNV Testing of Birds and Mosquito Pools in Ontario

As of October 5, 2011, the Canadian Cooperative Wildlife Centre (CCWC) reported testing of 121 birds in Ontario for WNV. The results include 16 positive and 105 negative. Reports can be found on the CCWC website:
www.ccwhc.ca/wnv_report_2011.php

As of September 24th 2011, PHAC reported 278 WNV-positive mosquito pools in Ontario.

Updates on human, bird and mosquito-pool positives for WNV can be found on the PHAC website:
www.phac-aspc.gc.ca/wnv-vwn/index-eng.php

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Establishment of a New Eastern Canadian Site for the Canadian Global Food Animal Residue Avoidance Databank at the University of Guelph

Ron Johnson, Ontario Veterinary College, University of Guelph
Trish Dowling, Western College of Veterinary Medicine, University of Saskatchewan

The new Eastern Canadian regional centre of the Canadian Global Food Animal Residue Avoidance Databank (CgFARAD) is now operational. The CgFARAD is a non-profit centre that provides veterinary pharmacological expertise regarding drug and chemical (pesticides, intoxicants) residues in food animals when drugs are used in an extra-label manner, or food animals are exposed to harmful chemical intoxicants, respectively. Support for the establishment of the Eastern Canadian site of the CgFARAD at the University of Guelph was made possible by an OMAFRA Knowledge Translation and Transfer award (April 30, 2011) and provincial commodity group and stakeholder support (Ontario Pork, Chicken Farmers of Ontario, Dairy Farmers of Ontario, Turkey Farmers of Ontario, Ontario Cattlemen's Association, Grand Valley Fortifiers) obtained by Dr. Ron Johnson (Associate Professor, Biomedical Sciences, Ontario Veterinary College). Dr. Johnson (DVM, PhD, DACVCP) and Dr. Trish Dowling (DVM, MSc, DACVIM, DACVCP) are Co-Directors of the CgFARAD, with Dr. Dowling overseeing the Western Canadian regional centre and Dr. Johnson overseeing the Eastern Canadian regional centre.

Guidance on withdrawal-time information when drugs are used in an extra-label manner is provided only to veterinary practitioners authorized to practice in Canada. Requests to the CgFARAD can be submitted through the CgFARAD website (*www.cgfarad.usask.ca*). The mandate of the CgFARAD is to protect the Canadian food supply when it is necessary for veterinarians to prescribe drugs in an extra-label manner, and not to promote extra-label drug use. CgFARAD personnel will also assist veterinarians in determining safe withdrawal times when animals are accidentally exposed to pesticides, heavy metals or other chemicals.

Since its inception in late 2002, the CgFARAD has usually seen an increasing caseload each year, with an estimated greater than 1700-1800 cases expected this year, and an anticipated 18% growth in caseload over the next three years. The establishment of a new Eastern regional centre of the CgFARAD will enable the handling of increasing numbers of queries to the CgFARAD as well as assist with the CgFARAD's strategic objectives, which include a commitment to enhanced service, technical capabilities and stakeholder (government, commodity groups, pharmaceutical industry and academia) relations.

Do Farm Employees "Cheat" with Biosecurity Protocols?

Janet Alsop, Veterinary Science and Policy Unit, OMAFRA

Livestock commodity groups in Canada are currently developing, or have recently developed, national biosecurity standards. One of the objectives of these standards is to maintain the high health status that the Canadian livestock and poultry industry enjoys and that permits us to be a major exporter of live animals and their products. As with many other things in life, writing the standards is the easy part. It is the actual on-farm implementation that is more challenging.

Recently, Manon Racicot, from the Faculty of Veterinary Medicine at the University of Montreal and the Office of Animal Biosecurity, Canadian Food Inspection Agency, and her colleagues assessed compliance with biosecurity protocols in the Quebec poultry industry [(1)]. Using video surveillance, they specifically investigated the frequency of biosecurity errors at barn entry and exit. The farms were selected based on their proximity to the University, having at least one

(Continued on page 4)

employee, having a biosecurity protocol and the willingness of the producer to participate. A hidden camera was installed at the entrance of one barn on each of eight different poultry farms (six broilers, one layer, and one breeder). As a requirement of the University ethics committee, another visible, but non-functional, camera was installed elsewhere in the barn to ensure that participants knew that they would be filmed. Participants were informed that human traffic on poultry farms was being studied, although the fact that the project was specifically evaluating biosecurity protocols was not stressed. All employees on the selected farms and all visitors during the study period signed a confidentiality agreement that prevented identification of specific people and farms.

At the beginning of the study, Dr. Racicot met with each producer to determine each farm's biosecurity protocols. From this discussion, a laminated poster listing entry and exit biosecurity measures was produced and placed in the barn entrance. Each farm had between two and seven biosecurity practices, which differed among the farms. However, two practices were mandated on all of the farms by commodity associations: signing a logbook and changing footwear before entering.

The farms were filmed for 24 hours per day for two weeks after the posters were in place (short term) and then six months later, for another two weeks (medium term). For the short term assessments, there were 434 visits made by 74 different individuals - 43 employees/barn owners and 31 visitors. For the medium term assessments, there were 449 visits by 69 different individuals - 45 employees/barn owners and 24 visitors. In both study periods, a total of 44 different types of non-compliance errors were recorded. The number of errors per farm depended in part on the number of biosecurity measures on that farm. On average, four errors were observed per visit. Fewer than 3% of the visits were performed without error. The most frequent errors were:

- Ignoring the separation between the outer (contaminated) and inner (clean) area of a barn anteroom.
- Not changing footwear when entering a barn.
- Not washing hands when entering a barn.

The frequency of the errors was higher during the medium term assessment than during the short term assessment, probably because awareness was higher during the two-week period after the posters were installed. The most frequent error in the study was ignoring the delineation between the contaminated and clean areas, especially if it was defined only by a red line or a footbath, if the visit was short (less than 17 minutes) or if the anteroom was crowded due to the presence of more than one person.

The researchers made several suggestions for increasing compliance in the barns in their study:

1. Use a physical barrier, e.g., a bench, to divide the contaminated and clean areas of an anteroom.
2. Increase the size of the anteroom to allow adequate space for more than one person at a time.
3. Designate boots for a specific barn.
4. Provide coveralls for all personnel and visitors.
5. Lock barn entrances.
6. Use employees who are highly biosecurity compliant to escort visitors.
7. Solicit employee participation in establishing biosecurity measures.
8. Review biosecurity measures with employees several times each year.

The bottom line is that, although a livestock or poultry producer may have excellent biosecurity protocols, if these protocols are not routinely followed, either intentionally or unintentionally, by employees or visitors, then they are of no value in excluding disease from the facility. Probably the most important factor limiting adherence to biosecurity is a lack of understanding of both the rationale behind the protocols and the potential ramifications of ignoring them. Unless these are communicated in an effective manner, and reinforced regularly, poor biosecurity practices will continue to be an issue on some Canadian farms.

1. *Racicot M, Venne D, Durivage A, Vaillancourt J-P. Description of 44 biosecurity errors while entering and exiting poultry barns based on video surveillance in Quebec, Canada. Prev Vet Med 2011;100:193-199.*

Teat Dip Cups: Does Design Affect Performance?

Kristin Ferguson, OMAFRA Summer Student and
Ann Godkin, Veterinary Science and Policy Unit, OMAFRA

Beginning on August 1st 2012, the regulatory limit for bulk milk somatic cell counts (SCCs) in Ontario will be reduced from 500,000 cells per mL to 400,000 cells per mL. Dairy cattle herd owners will have a vested interest in assessing their herd's performance now in order to reduce their risk of incurring a penalty at the new level.

Proper milking procedures are critical for reducing the spread of mastitis in a herd. A review of what is done at milking time and how well it is done is essential when evaluating protocols producers use to reduce mastitis. Often producers assume that they are doing a good job, but full milking time evaluation of the **quality** of performance of milking procedures has not been carried out.

Post-milking dipping of teats is a critical component of *Staphylococcus aureus* mastitis prevention. In more than 50 years of research, post-milking teat dipping with approved products has been amazingly consistent in reducing the incidence and prevalence of *S. aureus* mastitis. Most Ontario producers, if asked, report using post-dipping, yet, in 2011, the most frustrating mastitis problem in Ontario remains *S. aureus* mastitis. Failure of *S. aureus* control, in the face of reported use of a proven effective practice, suggests that teat dipping is not being effectively done. Hence, the results that would be expected are not being achieved.

When examining why dipping is not being done properly, there is a need to investigate barriers to efficient and effective dipping. One aspect of dipping that we have investigated is the quality of the teat dip cups used on farms. We hypothesized that teat dip cups that are difficult to use, or whose design makes it difficult to fully achieve the desired teat skin coverage, could present a logistical barrier to consistently excellent post-milking teat dipping.

The ideal teat dip cup should:

- be able to contain sufficient dip for reasonable efficiency;
- be easily squeezed so that dip cup sections can fill completely but hand fatigue is minimized;
- have a dip cup diameter and depth that allows full insertion and coverage of **all** sizes of teats;
- be easy to carry;
- be easy to transport when moving cow to cow;
- be easy to take apart for effective cleaning;
- be easy to slide under the cow without interference from floors;
- be easy to use to reach the "far" teats, and
- not be easy to spill.

This past summer, in a pilot study, we evaluated four teat dip cups commonly used by Ontario producers to look at techniques to evaluate dip cup performance and ease of use. These selected cups were compared at milking time using the University of Guelph Ponsonby research herd.

Methodology

Milking staff used each of the four cup types. We compared the area of the teat skin surface that each cup covered. Teats were scored for coverage following milking and were photographed to capture changes. Each cup was tested on a few cows but not for a full milking time. During these initial evaluations, we also solicited staff opinions on other aspects of each cup's design, including spillage, volume held, "squeezability" and ease of getting full teat coverage on a variety of cows and teat shapes. Examples of the degree of coverage achieved in careful dip application are shown in the pictures **Figure 1**.

Results

We found that there was no difference between cups and coverage of teat dip on the teat. Each cup had the potential to cover teat skin adequately when used correctly, although staff felt some were easier to use than others.

(Continued on page 6)

Figure 1. Examples of assessments of degree of teat skin coverage compared to liner contact area.

Comments Noted by Milking Staff and Observers

Cup # 1: If the reservoir of this cup was filled too full, when dipping was done, teat dip overflowed and contaminated the hands of the person milking. This led to wasted dip and messiness.

Cup # 1. Non-return dip cup
Price: $15.75
Bottle: 300 mL

Cup # 2. Returning Teat Dipper
Price: $8.00
Bottle: 300 mL

Cup # 2: To ensure that the reservoir was full enough to provide proper coverage, the bottle had to be squeezed almost to its maximum extent and held there. Repeating this multiple times when milking a larger herd could result in hand fatigue.

(Continued on page 7)

Cup # 3: The spill-proof lip stopped the teat dip from overflowing and spilling out if the reservoir was filled too full, but this lip also prevented the reservoir from being easily emptied if the teat dip became contaminated with organic material.

Cup # 3. RJB Top Dipper
Price: $12.40
Bottle: 250mL

Cup # 4. RJB Side Dipper
Price: $19.25
Bottle: 250mL

Cup # 4: This "horizontal dip" cup was good for dipping cows with very low udders. It had the same problems with the spill-proof lip as mentioned above. Horizontal dipping led to a greater risk of hands contacting the rear teats when the cup was used to dip front or "far" teats. This could contaminate the hands or gloves with bacteria from teat skin, as is shown in **Figure 1**. If the cup was angled to avoid contacting the near teats, poorer coverage of the far teats occurred.

Conclusions

Milking staff were interested in discussions about the impact of design of teat dip cups on the functionality and utility of each cup.

This evaluation was limited in scope, as each cup was tested on only a few cows. Only four readily available and typical dip cups were included in the evaluation. Other styles with a variety of unacceptable characteristics are in use in the field and were not considered worthy of evaluation. Unsuitable styles include those with rigid-sided reservoirs and cups with very small dipping chambers that cannot properly accommodate larger or longer teats.

Using the four dip cups, little measurable difference was found during our evaluation when time was taken to use each style of cup carefully. Teat dip cup design choice can be based mainly on producer preference, although cups do have differences that should be considered.

Milk quality advisors should observe the type of teat dip cups in use at farms when they do milk quality and milking procedure evaluation. At milking time, the proportion of teats fully covered with dip post-milking should be recorded. Milking time observation of teat dipping, dip cup type and dip cup performance should be used to assess the suitability of the current cups in use for a particular producer.

Results of a Pilot Study on the Effect of Colostrum Intake by Suckling Piglets on Pre-weaning Mortality and Weaning Weight

Paisley Canning, Veterinary Student, Ontario Veterinary College, University of Guelph, and Tim Blackwell , Veterinary Science and Policy Unit, OMAFRA

Adequate colostrum intake is considered critical for newborn piglets. The nutritional and immunological benefits of colostrum are important for piglet survival and weight at weaning. From data collected previously from Ontario swine herds, there is commonly a 10-fold difference in serum maternal immunoglobulin G (IgG) concentrations in piglets within the same litter, suggesting a large variation in the quantity and composition of colostrum ingested by littermates [(1)]. The importance of this difference in IgG concentration on pre-weaning mortality and piglet growth has not been well studied. A pilot project was completed to investigate the relationships between birth weight, the concentration of IgG at one to four days of age, survival to weaning and weaning weight.

Two hundred piglets between one and four days of age from two farms in southwestern Ontario were weighed and had blood collected by jugular venipuncture. Farm 1 is a porcine reproductive and respiratory syndrome virus (PRRSv)-positive, Mycoplasma *hyopneumoniae* (M. *hyo*)-positive 600-sow farrow-to-finish operation. Farm 2 is a PRRSv-negative, M. *hyo*-positive 300-sow farrow-to-finish farm. Piglets were weaned at 22 to 29 days of age. The birth weight, sow parity, IgG concentration in serum, age at weaning and weaning weight were recorded for each piglet. To detect maternal IgG concentrations, the sera collected at one to four days of age were tested using a radial immunodiffusion assay[a]. The Student's t-test, linear regression, and analysis of covariance were used to examine associations between variables. Below are the main conclusions from this pilot study.

- There was a significant difference in weaning weight between piglets from sows of different parities when adjusted for birth weight, age at weaning and IgG concentrations (p-value < 0.0001). However, only 20 sows were included in the pilot study and the number of sows sampled was not evenly distributed across parities.
- All 200 piglets consumed colostrum as estimated by IgG levels (minimum: 2.6g/L, maximum: 65g/L).
- The average concentration of serum IgG in piglets was not significantly different between farms (p-value = 0.73).
- The concentration of IgG in piglets that died before weaning (mean= 22.17 g/L) was not significantly different than the concentration of IgG in piglets that survived until weaning (mean 25.17 g/L) (p-value = 0.22).
- The average birth weight of piglets that died before weaning (mean= 1.36kg) was significantly less than piglets that survived (mean = 1.68kg) (p-value = 0.006).
- The IgG concentration did not significantly affect weaning weights on either farm (p-value = 0.07, r-squared = 0.0207).
- Birth weight significantly affected weaning weight on both farms (p-value = 0.0001, r-squared = 0.30).

This pilot study suggests that, on these two farms, IgG concentrations in newborn pigs were not a major determinant of survival to weaning or weaning weight. These results may reflect the small sample size (200 pigs) or the possibility that, despite the 20-fold spread in IgG concentrations, the majority of pigs received adequate immunity to protect them against the endemic challenges in their respective herds.

1. *Tenbergen R, Blackwell T, Ojkic D. The Range in IgG Values in Suckling Piglets on 11 Ontario Swine Farms. Ceptor Animal Health News. Volume 18, Issue No. 3, November 2010.*

a *RID IgG Single Subclass Test Method: IAV-CIS230 Animal Health Laboratory (AHL) Guelph, ON*

Discoloured Bones in Slaughter Hogs

Norma Varela and Bob Friendship, Department of Population Medicine, University of Guelph, and Janet Alsop, Veterinary Science and Policy Unit, OMAFRA

Hog carcasses with discoloured bones were reported in Ontario slaughter plants during the porcine circovirus type 2 (PCV2) outbreak in 2004-2006. Before PCV2 vaccines became available in 2006, antibiotics were administered to growing pigs to treat secondary bacterial infections. Despite reports of a significant drop in antibiotic use in the past five years, particularly in the grow-finish period, and an increase in antibiotic-free swine production, personnel in Ontario slaughter plants still observe carcasses with yellowish-green bone discolouration (0.28% of 759,957 carcasses examined in 2010). The discolouration can be caused by tetracyclines that become bound to calcium in the bone. Muscles and organ tissue eliminate tetracyclines rapidly compared to bone, and producers who use tetracyclines according to label instructions and who follow the recommendations on the label regarding withdrawal times do not need to be concerned about marketing animals with tissue levels of tetracyclines that would be above the minimum allowable limits for safe pork. However, the bones may contain tetracyclines and discolouration may be observed. This sometimes forces the packers to de-bone the carcass, and the additional handling is an added expense to the industry.

At the University of Guelph, Dr. Norma Varela used different dosages, methods of drug delivery and types of tetracycline in a feeding trial with 35 barrows. Animals receiving the highest (extra-label) level of tetracycline and the longest duration of exposure (660 ppm of chlortetracycline for 12 weeks) had discoloured bones when they were slaughtered approximately five weeks after the medication was stopped. Guillot and co-workers from the University of Montreal recently published research that demonstrated bone discolouration caused by chlortetracycline (CTC) fed at 800 ppm (extra-label dosage) for either 28 or 56 days, and showed that the discolouration is reversible, but takes more than eight weeks [(1)].

From these studies, it appears that the risk of discolouration is related to the dose of tetracyclines, the duration, the withdrawal time and the age of the pig. There is interaction of these factors and some individual variation; therefore, the discolouration is not easy to predict. The identification of discolouration is also somewhat subjective. Mildly affected carcasses may be ignored in the plants, but as an export-oriented industry, this issue should be considered.

The take home message is that tetracyclines administered in the feed at some extra-label dosages and durations may take eight weeks to be cleared from bone tissue. Veterinarians and producers need to consider this when choosing a medication program in the grower-finisher barn.

1. *Guillot M, Alexander K, Pomar C, Del Castillo JR. In growing pigs, chlortetracycline induces a reversible green bone discoloration and a persistent increase of bone mineral density dependent of dosing regimen. Res. Vet. Sci. 2011;90 (3):484-490.*

Update on Results of the Ontario Johne's Dairy Program

Ann Godkin, Veterinary Science and Policy Unit, OMAFRA, and
Nicole Perkins, Ontario Johne's Program Coordinator

As of September 1, 2011, we are almost half way through the Ontario Dairy Industry Johne's program. The program started in January 2010 and will be completed by May 2013. Herd owners are offered the chance (a testing "window") to test their herds, based on county or region. Each window is approximately six weeks in length, allowing for the inclusion of at least one DHI test date per herd.

Using either the milk or blood Johne's ELISA test, 78,868 Ontario dairy cows from 1,154 herds have been tested. Of the cows tested, 563 cows (0.7%) have had a positive Johne's test result. Only 108 cows (0.1%) in 74 herds have had High-Positive (titre > 1.0) test results. So far 63 of those herds have removed the High-Positive cows as required by the program.

Of the 1,154 herds tested, 260 (23%) have had at least one test-positive cow. For 894 herds, or approximately 77% of the herds tested so far, the news has been good – all cows have had negative test results on the test day. While this does not mean these herds are "free" of Johne's, it does mean that the prevalence of infection is likely to be low.

Of the herds with positive tests, 224 (19% of the 1,154 herds tested) have had 5% or fewer cows with positive test results, and 24 herds (2% of the tested herds) have had between 5 and 10% of cows test positive. At the high end of the Ontario prevalence scale, 12 herds (1% of herds tested) have had 11% or more of cows with positive test results.

Unfortunately, 74 herds received herd test results that showed at least one cow with a High-Positive result. While this seems like bad news, participation in the program offers these herd owners and their veterinarians an opportunity to assess the full herd infection picture and it assists the owner in obtaining veterinary advice to manage Johne's disease. These herd owners have received $500 per High-Positive cow (removed according to program requirements) to help them to reduce Johne's spread to the rest of the herd.

Many herd owners think that their herd does not have Johne's disease and, therefore, testing is not important. The program reimburses a producer's testing costs. Completing the Johne's Risk Assessment and Management Plan (RAMP) with the veterinarian provides the owner with herd management information, with a special focus on calf health and feeding issues. On a provincial basis, having as many herds as possible test and complete the program allows us to estimate the extent of Johne's disease in Ontario.

To date, both producer and veterinarian participation has been excellent. As of late September, 943 herds (82% of the herds that have started the program) have completed all requirements and received compensation, and 232 veterinarians have been trained to do the RAMPs.

The Ontario Johne's Dairy Program: High-Positive Cows – Don't let them scare you away!

Ann Godkin, Veterinary Science and Policy Unit, OMAFRA, and
Nicole Perkins, Ontario Johne's Program Coordinator

As of early fall 2011, the 14th testing period or "window" of the Ontario Johne's Dairy program has ended. Approximately half of Ontario's dairy producers have had a chance to have their herd tested for Johne's disease at no charge. To date, 943 herds have completed the full herd test, the risk assessment and management plan (RAMP) with their veterinarian and, if applicable, have removed High-Positive cows identified on the herd test. These herds have been reimbursed by the program and have received their certificates of completion. Others are in various stages of completion.

(Continued on page 11)

We want to make sure that producers understand the opportunity that this program provides to them. **The "window" for their county is the only opportunity for producers to participate and receive reimbursement for testing**. The schedule for testing is on *www.johnes.ca* or is available from herd veterinarians.

While almost 75% of eligible herds have participated in some windows, this has not consistently been the case. One reason given by some producers regarding why they have not enrolled is their worry about having to get rid of their "best" cows if they test positive. This indicates that there is some confusion about cow removal in the Ontario program. Cow removal remains rare and, if its role is fully understood, is not a reason to avoid enrolling in the program.

Which cows are removed?

When cows are tested using milk or blood ELISA tests, each cow receives an ELISA score. Based on these scores, cows are classified as Negative, Low Positive or High Positive for Johne's. For reimbursement of test costs, the only cows that must be removed are those with High-Positive results. High-Positive (or high-titre) cows have a test result of 1.0 or higher. These cows need to be removed because they are shedding the Johne's bacteria in manure and possibly in milk. For reimbursement, the program requires that High-Positive cows go to deadstock (rendering) or burial, and not to future dairy or meat production. Many Low-Positive cows will remain in herds. With veterinary advice, these cows can be managed to prevent Johne's from spreading to other cattle in the herd. **All cow removal, including the High Positives, is voluntary – any producer can decide to keep any cow they want regardless of what the Johne's test results show.**

Payment for cows

Payment of $500 per High-Positive cow removed is offered to affected herd owners to help them manage Johne's risks. Testing costs ($8 per cow test) are reimbursed by the program when all requirements are fulfilled within the program's timeframe but, **if a producer wants to keep a particular cow, even a High-Positive one, they can do so – they simply will forfeit reimbursement for testing costs**.

Only the producer and their veterinarian know what the herd Johne's test results show. We encourage producers to seek veterinary advice about managing any test-positive cows they retain in the herd.

How likely is it that a herd will have a High-Positive cow?

The program statistics show that 94% of the herds tested have NOT had a cow with a High-Positive test result. High-Positive cows remain rare (0.1% of 78,868 cows tested).

In many cases, the herd owners, whose herd test has shown a High-Positive cow, are not surprised with their results. Many of these herds have a history of previous Johne's disease cases prior to joining the program. The program offers these herds a chance to "benchmark" their full herd's Johne's status by helping them to test all cows at one time.

It is very unusual for an Ontario herd to have a High-Positive cow without some indication that this might occur, based on the herd's history. If a producer is concerned, they should discuss the risks and benefits of testing with their veterinarian.

Will the herd's "best cow" be a High Positive for Johne's?

It is unlikely that the best cow will have a High-Positive test result. High-Positive cows have advanced infection, which is why they produce a very high level of antibody. If not already sick at testing time, most are close to developing the diarrhea and weight loss that are the signs of Johne's disease. A High-Positive cow may appear healthy on the day of testing; however, research clearly shows that their milk production has been declining. Even though some High-Positive cows appear healthy, they are shedding very large numbers of Johne's bacteria in manure. These bacteria can infect young cattle. Many times, when producers take a closer look at a particular cow with a High-Positive test result, they see that she already has signs of Johne's disease.

(Continued on page 12)

Program benefits – herds and province

Herd owners should use the Ontario Johne's program to find out where their own herd stands with regard to Johne's disease. The herd test provides a "snapshot", a picture at one point in time, which helps to predict if Johne's is likely to be present and whether it should be a big or small priority for a particular herd manager.

Even if a producer does not suspect a Johne's problem, testing under the program helps us to put the full Ontario dairy industry on the record. If most herds in Ontario are "low Johne's", this would be good news for everyone. Documenting this with 4,100 herds enrolled and tested via the Ontario Johne's program will benefit both cattle breeders and milk producers alike.

In summary

- The Johne's program offers each producer a one-time opportunity to test their herd for Johne's disease.
- Once the herd is tested, the producer can decide whether or not they want to continue and do all program requirements (RAMP and removal of High-Positive cows).
- Tests done as part of the program are reimbursed at $8 per cow tested.
- All cow removal is voluntary.
- High-Positive cows identified in herds continuing in the program must be removed to deadstock or burial.
- Producers receive $500 per High-Positive cow removed as part of the program.

Update on the Johne's Beef Program – Last Call!

Ann Godkin, Veterinary Science and Policy Unit, OMAFRA

The Johne's Beef program began in December 2010 and provides an opportunity for seed-stock producers to test mature cattle, two years of age and older. Blood samples are collected by the herd veterinarian and tested at the Animal Health Laboratory using the Johne's serum ELISA test. Laboratory results are returned to the veterinarian, who provides interpretation for the producer. During a follow-up farm visit, based on the Johne's information provided by the testing, the veterinarian and owner work through an on-farm consultation using the beef cattle Johne's Risk Assessment and Management Plan (Beef RAMP). Together the veterinarian and the producer discuss changes to management that the herd owner can adopt to prevent the introduction and spread of Johne's disease.

To date, 78 herds have enrolled. As of October 1, 2011, 44 herds have completed all of the required steps and have had reimbursement cheques issued. The remainder of the herds are progressing through the various stages to completion.

This program, with funds provided by the Ontario Cattlemen's Association and the Agricultural Biosecurity program, reimburses the herd owner for the herd testing cost and the veterinary consultation fees. **Only the producer and the veterinarian know the results of the Johne's tests for a particular herd**.

The program ends in December 2011. There is still some funding available. **All herds must complete the program requirements by December 2011 in order to receive reimbursement**. Fall pregnancy testing is a good opportunity for herd blood sampling.

To enroll a herd in one of the few remaining places in the program, interested veterinarians should contact the project co-coordinator, Dr. Ann Godkin (519-846-3409 or ann.godkin@ontario.ca) as soon as possible. **Please contact the co-coordinator before testing to ensure that sufficient funds remain available.**

Accelerated Colostrum Feeding to Dairy Calves

Neil Anderson, Veterinary Science and Policy Unit, OMAFRA

Abomasal bloat and emphysematous abomasitis may occur rarely, sporadically, or in clusters of dairy calves on a farm. There have been calls for research that would consistently reproduce the disease and for prevention and control strategies. (1) Signs similar to those seen in naturally occurring disease have been induced experimentally using infusions of *Clostridium perfringens* (2) or a readily fermentable substrate (3). Nonetheless, there has been scant, if any, research in recent years. Practitioners and diagnostic laboratories continue to see cases. This article explores the role of accelerated colostrum feeding as a predisposing cause.

Accelerated Colostrum Feeding

The common advice is to feed newborn calves four litres (L) of colostrum as soon as possible after birth to provide 150-200 g of IgG that is needed to diminish the chance of failure of passive transfer (FPT). (4,5) Since average colostrum contains about 50 g of IgG/L, simple math was used to arrive at the four L. As a result, producers are force-feeding four L of colostrum in one meal - a practice based on science, assumptions, mathematical extrapolation, convenience, misinterpretation or expert advice. The defining characteristic of **accelerated colostrum feeding** may be a single feeding of four L by esophageal feeder within four hours of birth. Salient features include the volume delivered, speed of ingestion, labour devoted to the task, or quantity of nutrients in the feeding.

Questioning Four Litres in One Meal

Accelerated colostrum feeding may have become rooted so deeply in calf management that what may be traumatic to the calf has become normal to us. Certainly, immunoglobulins benefit a calf. But does the volume of colostrum or method of delivery (6) do harm? Producers who follow the advice complain about calves not suckling at their next meal. This makes calf-feeding frustrating and time consuming for producers and, perhaps, stressful for calves. Some abandon the technique, whereas others carry on while questioning the practice. During the first three days of life and with suckling their dams, daily colostrum intake for Holstein calves may vary from nine to twenty-one percent of their birth weight (7) and they consume their colostrum in several meals. With suckling, each meal is comparatively small, and since abomasal capacity is less than two L, should we force feed more than two L in a meal? Why do advisors recommend gorge-feeding colostrum yet tell producers that over-feeding is a hazard for milk-fed calves? It's difficult to find information about pain, discomfort, reflux or aspiration, or a long inter-meal interval following force-feeding with four L of colostrum. Yet, information in post-mortem reports for neonatal calves should make us wary about over-feeding colostrum, especially by esophageal feeder.

Ruminal Acidosis and Anaerobic Conditions

Esophageal feeders facilitate prompt and rapid administration of fluids to calves. Physical damage to the pharynx or esophagus, aspiration into the lungs, ruminal acidosis, or establishment of anaerobic conditions in the forestomachs may be unwanted side effects. Abnormal fermentation of milk in the forestomachs produces an accumulation of acid that leads to ruminal and systemic acidosis. Significant volumes of milk entering the forestomachs may change conditions from aerobic to anaerobic. Whereas suckling stimulates closure of the groove under natural conditions, use of esophageal feeders, feeding large volumes at a calf's first meal, or bucket feeding can lead to failure of the reflex, failure of groove closure and milk entering the rumen. Distension of the abomasum with large volumes of milk at one time can allow milk to overflow or reflux into the rumen. Similarly, the pressure from overfilling can force the groove to open partially and allow milk to leak into the rumen. Ruminal acidosis in itself may cause diarrhea. (8,9)

In calves fed by nipple-bottle, fluids pass directly into the abomasum. In neonatal calves fed by esophageal feeder, fluids initially enter the reticulum, then the cranial sac and the remainder of the rumen. As the rumen fills, fluids spill into the omasum and the abomasum. A volume of 400 mL may be administered into the esophagus before overflow begins from the rumen. (10)

(Continued on page 14)

Milk, milk replacer or milk fat overflowing without gastric digestion into the duodenum triggers feedback mechanisms located in the first few centimetres of the duodenum. The mechanisms prevent or control the passage of whole milk before it is digested in the abomasum. In effect, undigested milk in the duodenum slows gastric emptying and reduces gastric acid secretion. (11) Overfilling the abomasum may cause overflow of undigested milk into the duodenum and contribute to an unwanted cascade of events.

A Tsunami of Colostrum and a Clostridial Meltdown

Ruminal acidosis with subsequent rumenitis, omasitis and abomasitis may be underestimated and under-diagnosed in milk-fed calves. (9) A scan of about 300 post-mortem reports for Ontario calves less than six weeks of age showed that one-third included rumenitis/reticulitis/omasitis/abomasitis in the diagnoses.

Because I knew a producer with cases at his farm in 2009, I telephoned him and asked for his observations. He said 'I remember that last calf and always will.' His 45-kg Holstein calf received four L of colostrum by esophageal feeder at three hours of age and an additional two L at 13 hours of age, an inter-meal interval of 10 hours. The next morning it could not stand, was severely dehydrated, and had abdominal distension and loose manure. The calf died at less than 30 hours of age. The rumen contained watery fluid with clots and had areas of acute hemorrhage, especially around the esophageal groove. The abomasum was severely distended with watery fluid and large amounts of clotted milk. It had severe acute mucosal congestion with emphysema and areas of mucosal necrosis. After culturing *Clostridium perfringens* from the abomasum and small intestine, the pathologist gave a final diagnosis of severe acute clostridial abomasitis. Although the final diagnosis focuses on a bacterial cause that may lead us to prescribe antibiotics or vaccinations to prevent new cases of the disease, we must think about events predisposing to the disease.

Consideration of the sequence of events leading to clostridial abomasitis may stimulate sober thought about our recommendations. At three hours of age, the farmer rapidly overfilled the calf's forestomachs with high-solids-content, readily-fermentable, colostrum (i.e., faster and a greater volume than a suckled meal). The flood destroyed tissues and overpowered metabolic processes. Imagine colostrum overfilling the rumen, fermentation, acid production, rumenitis, systemic acidosis, and compromised metabolic and circulatory systems; colostrum overflowing from the rumen into the omasum and abomasum; an overfilled abomasum with a stretched wall, ruptured capillaries, hemorrhage, blood clots, and hypoxia in local tissue; undigested milk spilling into the duodenum and signals being sent to the abomasum to slow gastric emptying and reduce acid production; and an abomasum overfilled with colostrum, slow emptying, overwhelmed abomasal acid-defence mechanisms, abomasal pH in the clostridial-friendly range greater than 4.5, anaerobic conditions, proliferation of *Clostridium*, congestion, emphysema and toxin production with local and systemic damage. The second feeding of colostrum was an aftershock, the final blow. Clearly, the predisposing cause of death was rapid overfilling of the forestomachs – a colostral tsunami and clostridial meltdown triggered by an expert's advice to feed four L of colostrum at one meal and a farmer's willingness to comply.

Neither the calf's suffering nor the owner's distress appear in any reports. 'I was filling them too full' was the owner's summation. He believed more was better and he had several calves die with similar signs before this one. Their deaths were painful to him. He changed to a maximum of 3 L and hasn't had any comparable cases in over two years.

This case and others with similar predisposing causes but longer duration raise a prickly question about the logic of slug-feeding four L of colostrum into newborn calves. Slug-feeding four L of colostrum is a treatment for FPT, a laboratory report. How can we weigh a decrease in the prevalence of FPT in a herd against the potential suffering of individual calves from overfilling with colostrum? Generally, experiences with FPT and morbidity or mortality have involved calves fed restricted volumes of milk. (12) FPT may be unimportant to well-fed calves raised in a clean environment, management that is common on our dairy farms today.

(Continued on page 15)

Decelerating Colostrum Feeding

Chigerwe [13] offers practical alternatives to force-feeding four L of colostrum in one meal by esophageal feeder. Chigerwe's protocol restricts the use of an esophageal feeder to calves that do not suckle or suckle ≤2 L for their first meal and ≤1 L for their second meal. The protocol also limits the volume administered per meal by esophageal feeder to two L or less. Using his techniques, there is a very high probability of successful passive transfer. For example, in his protocol suckling is the primary route of administration. The first feeding should be at 1, 2, 3, or 4 hours of age. Calves that suckle two to three L of colostrum within the first four hours of age should not be 'topped up' to 4 L by esophageal feeder. Likewise, calves that suckle one or two or more L at the next feeding (up to 12 hours later) should not be given additional colostrum by esophageal feeder. Intervention with an esophageal feeder should only be undertaken with calves that suckle less than two L at their first or second feeding.

Rumenitis or abomasitis should be placed near the top of the list of differential diagnoses for acutely ill neonatal calves, poor-doers or slow drinkers. In general, prevention strategies often focus on controlling the necessary cause - clostridial agents - through the use of sanitation, antibiotics, or vaccines. Enhanced prevention strategies should include elimination of the predisposing causes of the disease complex. As advisors, we should modify our recommendations for **accelerated colostrum feeding** towards smaller volumes per meal, more meals to achieve a four-L target, and adjustment of dosages suitable to the calf's birth weight. **Enhanced early nutrition** may lessen the importance of **accelerated colostrum feeding** and hasten a return to practical and safe volumes for colostrum feeding.

Gross and histological images of emphysematous abomasitis may be viewed at the link to Van Kruiningen's paper. [14]

www.ncbi.nlm.nih.gov/pmc/articles/PMC2711473/

Acknowledgements

I am grateful to Dr. Jim Fairles and his colleagues at the University of Guelph Animal Health Laboratory for assistance with post-mortem reports, and to my Veterinary Science colleagues and our summer students (Paisley Canning, Kristen Ferguson, Robbin Pinkney) for valuable insights during clinical forum discussions this summer.

References

1. *Songer GJ, Miskimins DW. Clostridial abomasitis in calves: case report and review of the literature. Anaerobe 2005;11:290-294.*
2. *Roeder BL, Chengappa MM, et al. Experimental induction of abdominal tympany, abomasitis, and abomasal ulceration by intraruminal inoculation of Clostridium perfringens type A in neonatal calves. Am J Vet Res 1988;49:201-207.*
3. *Panciera RJ, Boileau MJ, Step DL. Tympany, acidosis, and mural emphysema of the stomach in calves: report of cases and experimental induction. J Vet Diagn Invest 2007;19:392-395.*
4. *Trotz-Williams LA, Leslie KE, Peregrine AS. Passive immunity in Ontario dairy calves and investigation of its association with calf management practices. J Dairy Sci 2008;91(10):3840-3849.*
5. *Weaver DM, Tyler JW, VanMetre DC, Hostetler DE, Barrington GM. Passive transfer of colostral immunoglobulins in calves. J Vet Intern Med 2000;14:569-577.*
6. *Borderas F, von Keyserlingk MAG, Weary DM, Rushen J, de Passille AM, Van Amburgh ME. Letter to the Editor: The Effects of Force-Feeding Sick Dairy Calves: A Comment on Quigley et al. (2006). J Dairy Sci 2007;90(8):3567-3568.*
7. *Lineweaver JA, Hafez ESE. Feed intake and performance in calves fed ad libitum and four times daily. J Dairy Sci 1969;52:2001-2006.*
8. *Gentile A. Ruminal acidosis in milk-fed calves. Large Animal Veterinary Rounds 2004;4(9)* www.larounds.ca/crus/laveng_1104.pdf
9. *Gentile A. d-Lactic Acidosis in Calves as a Consequence of Experimentally Induced Ruminal Acidosis. J Vet Medicine Series A 2004;51:64-70.*
10. *Chapman HW, Butler DG, Newell M. The route of liquids administered to calves by esophageal feeder. Can J Vet Res 1986;50:84-87.*
11. *Bell FR and McLeay LM. The effect of duodenal infusion of milk, casein, lactose and fat on gastric emptying and acid secretion in the milk-fed calf. J. Physiol 1978;282:51-57.*
12. *Tyler JW, Hancock DD, Wiksie SE, Holler SL, Gay JM, Gay CC. Use of serum protein concentration to predict mortality in mixed-source dairy replacement heifers. J Vet Intern Med 1998;12:79-83.*
13. *Chigerwe M, Tyler JW, Summers MK, Middleton JR, Schultz LG, Nagy DW. Evaluation of factors affecting serum IgG concentrations in bottle-fed calves. J Am Vet Med Assoc 2009;234(6):785-789.*
14. *Van Kruiningen HJ et al: Clostridial abomasal disease in Connecticut dairy calves. Can Vet J. 2009;50(8): 857–860.* www.ncbi.nlm.nih.gov/pmc/articles/PMC2711473/

Refusal to Suckle after Colostrum Feeding

Neil Anderson, Veterinary Science and Policy Unit, OMAFRA

Refusal to suckle the first meal after colostrum feeding may be common on some dairy farms. Observational data for 244 calves from one farm showed that 47% did not suckle their first meal of milk replacer after having received their colostrum. About half of the non-drinkers did not drink at the next meal. Within the non-drinkers, some were fed by nipple bottles and some by esophageal feeders, and volumes varied, with a target of three to four L. Analyses showed that refusals were similar for calves fed ≤3L vs. >3L of colostrum. However, calves fed colostrum by esophageal feeder were less likely to suckle their first meal of milk replacer. Overall, refusals at the next meal by calves fed by esophageal feeder were 57% for calves fed ≤3L colostrum and 64% for calves fed >3L (**Figure 1**).

The association of esophageal feeding and failure to suckle at the next meal does not imply causation; it merely gives us a hint to look deeper into the matter. For example, is the outcome associated with the act of intubation, volume of colostrum, speed of administration, or physiological changes in the forestomachs or systemically? These data do not provide an answer.

Amongst the 244 study calves mentioned in the 'refusal-to-suckle' case study described above, there were nine deaths - four following complications of umbilical infections and five with abomasitis and/or rumenitis as part of the necropsy findings. Because of the findings of abomasitis, milk refusals, and slow starts, the owners chose to shift colostrum feeding closer to Nature's way - suckling and smaller volumes per meal. The owners will monitor their change in management by submitting dead calves to the Animal Health Laboratory at University of Guelph.

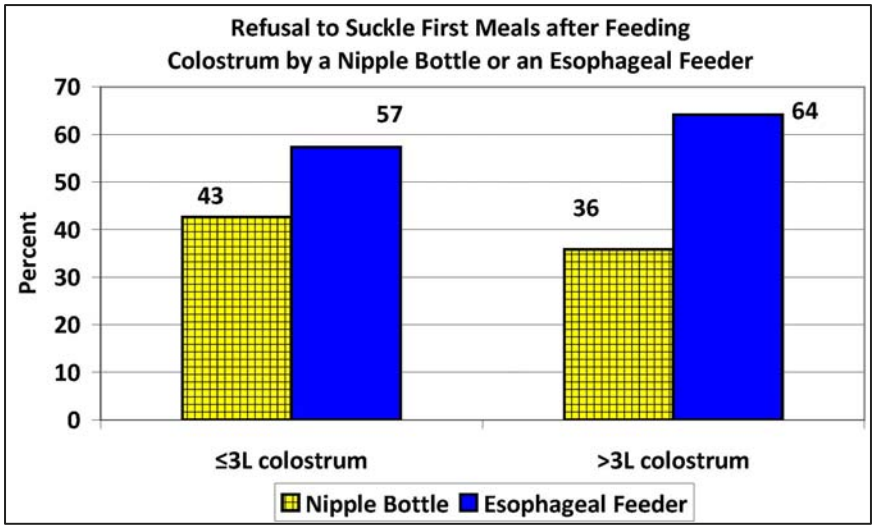
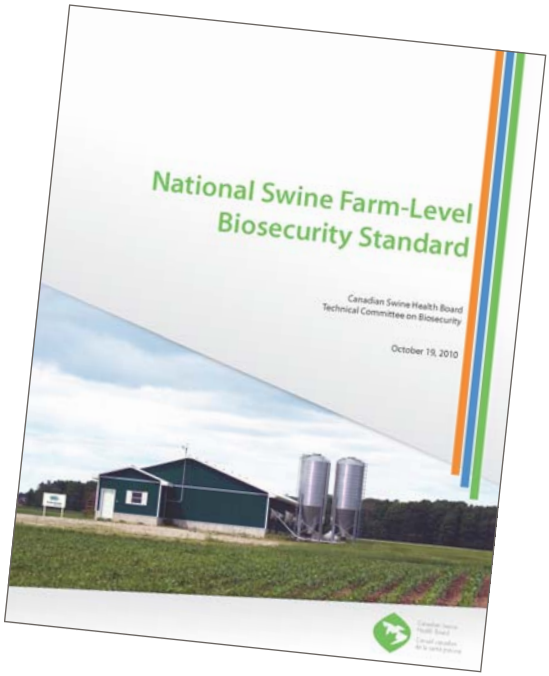


Figure 1. The proportion of calves that refused their first milk-replacer meal was *associated* with feeding colostrum by esophageal feeder (X^2_{MH}=26, p=0.0000). The outcome may have been related to unmeasured factors, for example, volume, speed of administration, physical, physiological, or metabolic.

Available Resource

National Swine Farm-Level Biosecurity Standard

This new publication, prepared by the Canadian Swine Health Board (CSHB) Technical Committee on Biosecurity, is available on the CSHB website at
www.swinehealth.ca/CSHB_Biosecurity_StandardE.pdf



Continuing Education/Coming Events

October 30-November 2, 2011	Antimicrobial Stewardship in Canadian Agriculture and Veterinary Medicine Conference: How is Canada doing and what still needs to be done? - Toronto Airport Marriott Hotel, Toronto, Ontario. *www.antimicrobialcanada.com* (See pages 19 and 20)
November 1, 2011	Small Ruminant Veterinarians of Ontario Fall Continuing Education Meeting—Goat Health Management—"Practical Info Session for Veterinarians," Marriott Toronto Airport Hotel, Toronto, Ontario. Speaker—Dr. Paul Plummer, Iowa State University *www.srvo.ca/meetings.php*
November 2, 2011	Ruminant Feed Industry Day 2011, Maryhill Heritage Park Community Centre, Maryhill, Ontario. *www.omafra.gov.on.ca/english/livestock/beef/conference/feedindustryday.htm*
November 1-5, 2011	American College of Veterinary Surgeons (ACVS) Veterinary Symposium—The Surgical Summit, Hyatt Regency Chicago, Chicago, Illinois. *www.acvs.org/symposium/CE*
November 9 & 10, 2011	Pennsylvania Dairy Cattle Nutrition Workshop, Holiday Inn, Grantville, Pennsylvania *www.das.psu.edu/research-extension/dairy/nutrition/continuing-education*
November 16, 2011	Dairyland Initiative Workshop: Designing Supplemental Positive Pressure Ventilation Systems to Improve Air Hygiene in Calf & Heifer Barns, Gruenhagen Conference Center, University of Wisconsin-Oshkosh, Oshkosh, Wisconsin. *www.vetmed.wisc.edu/ce*
November 16 & 17, 2011	Ontario Association of Bovine Practitioners (OABP) Fall Continuing Education Program and Annual General Meeting, Holiday Inn, Guelph. *www.oabp.ca/Upcoming%20Events/CE%20Events.htm*

(Continued on page 18)

Continuing Education/Coming Events (continued)

November 17 & 18, 2011	5th U.S. BVDV Symposium—Preventing, Detecting and Controlling the Spectrum of Diseases Caused by BVDV, Town and Country Resort Hotel and Convention Center, San Diego, California. Sessions include: Practical BVD Control for US Dairies and Diagnosis, Surveillance, and Vaccination. *www.bvdvmtg2011.org*
November 18-22, 2011	American Association of Equine Practitioner's 57th Annual Convention, San Antonio, Texas. *www.aaep.org/convention.htm*
November 21, 2011	Michigan Veterinary Medical Association Animal Welfare Conference, MSU Pavilion, Michigan State University, East Lansing, Michigan. *http://michvma.affiniscape.com/displaycommon.cfm?an=1&subarticlenbr=58*
November 30-December 1, 2011	Group-Housed Dairy Calf Systems, Doubletree Hotel, Syracuse, New York. *www.ansci.cornell.edu/prodairy/calfsystems/* or contact Heather Howland, Conference Coordinator, at hh96@cornell.edu or (607) 255-4478.
January 17, 18 & 19, 2011	CanWest DHI Herd Management Conference. Speakers include Dr. David Reid (Bou Matic) and Alex Venne (Diamond V). January 17—Chesterville; January 18—Tavistock; January 19—Drayton. *www.canwestdhi.com* or contact Bill Grexton, bgrexton@canwestdhi.com
January 19-21, 2012	Western Canadian Association of Bovine Practitioners (WCABP) Conference, Sheraton Cavalier Hotel, Calgary, Alberta *www.wcabp.com*
January 22-24, 2012	National Mastitis Council 51st Annual Meeting, Trade Winds Resort, St. Pete Beach, Florida. *www.nmconline.org/meetings.html*
January 26-28, 2012	Ontario Veterinary Medical Association Conference and Trade Show, Westin Harbour Castle, Toronto, Ontario *www.ovma.org/upcoming_events/conference/index.html*
February 5-10, 2012	11th International Colloquium on Paratuberculosis (ICP), Camperdown Campus, University of Sydney, Sydney, Australia. *www.icp2012.com.au*
March 10-13, 2012	American Association of Swine Veterinarians 43rd Annual Meeting, Hyatt Regency, Denver, Colorado. *www.aasv.org/annmtg*
June 3-8, 2012	XXVII World Buiatrics Congress, Lisboa Congress Centre, Lisbon, Portugal *wbc-2012.com/index.php/en_US/home*
June 10-13, 2012	22nd International Pig Veterinary Society Congress—Happy Pigs - Healthy People, International Convention Centre, Jeju, South Korea. *http://ipvs2012.kasv.or.kr*
July 29-August 2, 2012	17th International Congress on Animal Reproduction (ICAR), Vancouver Convention Centre, Vancouver, British Columbia. *www.icar2012.com/8*
February 18-22 2013	International Sheep Veterinary Congress, Christchurch Convention Centre, Christchurch, New Zealand. *http://conference.intsheepvetassoc.org*

ANTIMICROBIAL STEWARDSHIP IN CANADIAN AGRICULTURE AND VETERINARY MEDICINE CONFERENCE:

How is Canada doing and what still needs to be done?

October 30th- November 2nd 2011 • Toronto Airport Marriott Hotel

www.antimicrobialcanada.com






Sunday, October 30/11

Conference begins with a reception at 5:30 pm followed by dinner and presentations:

"Striving for Gold – Winning with Integrity" - Beckie Scott, Canadian Gold-medal Olympian

One World, One Health - Duane Landals, World Veterinary Association

A global view of the resistance crisis - Don Low, Mount Sinai Hospital, Toronto

What do we hope to achieve through this meeting? - Organizing Committee

ANTIMICROBIAL RESISTANCE: NO ACTION TODAY, NO CURE TOMORROW
WORLD HEALTH ORGANIZATION, 2011

Monday, October 31/11

Antimicrobial resistance in animals and people in Canada: How big is the problem?

Stewardship of antimicrobial drugs in animals and people in Canada: How well are we doing?

Are Canadian regulations hindering good antimicrobial stewardship in animals? Should we change the model?

International aspects of stewardship: Where does Canada fit in?

Reception - Poster Viewing and Dinner

Tuesday, November 1/11

When science meets the real world: Does theory match reality in Canada?

Stewardship of antimicrobials in animals in Canada: How can we improve?

The majority of Tuesday features CONCURRENT SESSIONS focusing on:

Aquaculture; Beef Cattle; Companion Animals; Dairy Cows; Horses; Small Ruminants; Poultry; Swine; Veal and the Young Dairy Calf. Details on reverse of sheet.

Wednesday, November 2/11

Conference summary: What's needed to improve antimicrobial stewardship in animals in Canada in the next 5 years? Conference closes at 12:30 pm

ANTIMICROBIAL STEWARDSHIP IN CANADIAN AGRICULTURE AND VETERINARY MEDICINE CONFERENCE:

How is Canada doing and what still needs to be done?

October 30th- November 2nd 2011 • Toronto Airport Marriott Hotel

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Highlights from CONCURRENT SESSIONS include:

Aquaculture Experts discussing antimicrobial stewardship in aquaculture within the context of resistance issues, guideline development, optimizing usage, and the drug approval process include Peter Smith from the National University of Ireland, Nicol Janecko and Carl Uhland, Dianne Morrison and Manisha Mehrotra.	**Beef Cattle** The most current research in antimicrobial resistance and antimicrobial stewardship in beef cattle will be presented by leading experts in the field in North America, including Sheryl Gow, Tim McAllister, Calvin Booker, Paul Morley, Morgan Scott and Reynold Bergen.
Companion Animals Guideline development for antimicrobial use in companion animal veterinary practice is currently the work of a CVMA Committee. This Concurrent Session will be focused on the process of veterinary guideline development with advice from experts such as David Lloyd (UK), Ulrike Gronlund-Andersson (Sweden), Scott Weese (Canada), Joe Blondeau (Canada).	**Dairy Cows** Dale Moore will give a keynote address about antibiotics in dairy farming. Other speakers (Vineet Saini, Ann Godkin, Ron Erskine, Alex Hamilton, Ron Johnson) will discuss a wide range of stewardship topics, including farm use audits, attitudes to antibiotic use and distribution, resistance and educational resources for enhancing stewardship.
Horses Steeve Giguère will discuss whether there is good antimicrobial stewardship in equine medicine. Other speakers, including Maureen Anderson, Jay Donecker, Trish Dowling and Francesca Sampieri, will discuss stewardship issues in horses, including MRSA and resistance, antibiotic-associated colitis, and decision making on antibiotic use by equine vets.	**Poultry** Antimicrobial resistance in bacteria from poultry in Canada and the United States will be discussed (Agnes Agunos, Patrick Boerlin, Paula Cray), and Scott McEwen will assess Salmonella as drivers of resistance in poultry. Leigh Rosengren will discuss farm-level antibiotic use decisions and the use-resistance challenges, and Stewart Ritchie will describe examples of successful antimicrobial stewardship in poultry production.
Swine Stewardship and resistance issues will be discussed by experts, including Scott Brown and Anne Deckert. Paul Dick will discuss alternatives to antimicrobials in swine production and Manon St-Hilaire will discuss the experience of farming without antimicrobial drugs. Stewart Cressman and Amy Cronin will give producer perspectives on antimicrobial stewardship.	**Veal and the Young Dairy Calf** Jaap Wagenaar from the Netherlands will discuss antibiotic resistance in the large Dutch veal calf industry and Dutch efforts to reduce antibiotic use by 50%. Other topics presented by Nancy Charlton, Kendra Keels, Reny Lothrop, Abdullahi Mahdi and André Roy will include current antibiotic stewardship concerns, prudent use guidelines, antibiotic residue monitoring, and On-Farm Food Safety and producer education programs.
Small Ruminants Antimicrobial resistance and antimicrobial stewardship in sheep and goats provincially, nationally and internationally will be discussed by speakers, including Barbara Caswell, Rex Crawford, Manisha Mehrotra, Paula Menzies, Paul Plummer, and Lisa Scott.	

For more information:

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Deadline for next issue: December 14, 2011

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