

CEPTOR



Animal Health News

Volume 9, No. 1, March 2001

ISSN1488-8572

CEPTOR is published by: OMAFRA, Veterinary Science - Fergus, Wellington Place, R.R. # 1, Fergus, Ontario N1M 2W3

Staff: David Alves, Neil Anderson, Tim Blackwell, Scott Gillingham, Ann Godkin,

Paul Innes, Jocelyn Jansen, John Martin, Robert Wright

Tel: 519-846-0941, 519-846-0965 Fax: 519-846-8101 E-mail: john.martin@omafra.gov.on.ca

Web site: <http://www.gov.on.ca/OMAFRA/english/livestock>

Editor: John Martin Graphics and Layout: Ora Zondervan

FMD and BSE 1

BSE and FMD Foreign Animal Disease (FAD) vigilance
- Reminder to practitioners 2

Foot and Mouth Disease - What to look for! 4

Don't bring foot and mouth virus home with you 5

Recommended precautions when visiting
or returning from Europe 7

Foot and mouth disease (FMD) information 9

Rabies in Ontario. 10

What type of long-acting penicillin is it? 12

Sniffing out threats to our livestock 13

Bovine abortion 14

BVD Report 2000 15

Examination of the mare's placenta 17

NAHMS (National Animal Health Monitoring System)
feedlot information: Feedlot '99 19

A Correction
Three meals per day for cold housed calves. 20

Resources 21

Continuing Education 22

CEPTOR feedback form 23

FMD and BSE



Just as winter was retreating and the spring lambing was about to start across the UK, news reports have vivid pictures of burning animal carcasses. We have heard harrowing stories of the effect on the farming community of foot and mouth disease (FMDV), coming right on the heels of "mad cow disease" (BSE).

This Pan Asia 'O' strain of FMDV is extremely invasive. It was first identified in northern India in 1990. From there, it spread eastward through Tibet and Bhutan to appear in China, Laos and Malaysia, finally crossing to Taiwan in infected animals from the mainland. Westward, the virus has been identified in the Middle East, being responsible for a serious outbreak in Saudi Arabia despite vaccination. This virus strain appears to replace any indigenous strains and persist for a considerable time. The last reported outbreak before the UK was in South Africa. It has now, again, been reported in Saudi Arabia and the Emirates. The Argentina outbreak is reported as strain 'A'.

The prionic theory of the TSE's has a shorter history, but has the potential for a far more profound impact on the understanding of disease. The words "incubation period" and



Ontario

Agriculture, Food and Rural Affairs
Veterinary Science - Fergus

Serving Ontario through
veterinary science, technology transfer,
outbreak investigation, and
animal health surveillance

Tel: 519-846-0941
519-846-0965
Fax: 519-846-8101

“infection” may no longer have meaning if no foreign nucleic acid is found at the root of the TSE’s. Experts at the World Health Organization (WHO), Office International des Epizooties (OIE), European Union (EU) and other countries are examining how prions may fundamentally affect agriculture.

In this issue of “**Ceptor**”, we are reminded of the persistent, catastrophic nature of foreign animal diseases, and the precautions by our colleagues in the Canadian Food Inspection Agency (CFIA) to keep these diseases out of Canada. The “old” FMD and the “new” BSE are real-time reminders of the importance of a strong veterinary infrastructure for surveillance and control of Foreign Animal Disease (FAD) risks. We hope the other topics presented are timely and useful to veterinarians and their clients and would appreciate your feedback.

John Martin and David Alves

BSE and FMD Foreign Animal Disease (FAD) vigilance -Reminder to practitioners

BSE

The recent discovery of Bovine Spongiform Encephalopathy (BSE) in more European Union member states has led to stricter testing and control measures across the EU. The diagnoses have also resulted in significant trade restrictions on animal based commodities of EU origin throughout the world. **In Canada, BSE has never been detected in cattle of Canadian origin.** Nevertheless, international trade pressures and heightened public concern make it increasingly important for Canada to demonstrate that effective surveillance measures are in place to detect BSE.

BSE

BSE is a reportable disease under the Canadian Food Inspection Agency (CFIA) *Health of Animals Act*. Any suspect case of BSE must be reported immediately. Brain tissue samples from cattle over one year of age with any neurological signs submitted to a provincial, federal or university diagnostic lab, or to a provincial or federal abattoir, are forwarded to the CFIA for confirmatory immunohistochemistry testing as part of the national surveillance program. OMAFRA and the University of Guelph Animal Health Laboratory work with the CFIA to collect BSE surveillance data for Ontario as part of the national BSE database. Since 1992, over 5000 animals have been tested nationally without detection of BSE.

Veterinary practitioners are the front line in any Foreign Animal Disease or emerging disease surveillance program.

The clinical signs associated with BSE, as well as other Transmissible Spongiform Encephalopathies, should be kept in mind when considering a list of differential neurologic diagnoses. The Office International des Epizooties (OIE) lists the main clinical signs associated with BSE as:

- Apprehension, fear, increased startle or depression
- Hyper-aesthesia or hyper-reflexia



Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

- Adventitial movements: muscle fasciculations, tremor and myoclonus
- Ataxia of gait, including hypermetria
- Autonomic dysfunction: reduced rumination, bradycardia and altered heart rhythm

Clinical submissions are an important element of the national BSE/TSE surveillance program. **Practitioners are encouraged to submit entire carcasses to a diagnostic laboratory for full post-mortem analysis whenever central nervous signs are part of the history, or if a TSE is on the list of differential diagnoses.**

FMD

The recent outbreak of Foot and Mouth Disease in the EU is reason to be on the lookout for vesicular lesions or unexplained lameness in cloven-hoofed animals. OMAFRA is supporting the CFIA in their lead role in this issue. Any questions or concerns regarding FMD should first be directed to your regional CFIA office.



The FMD virus is resistant to many common disinfectants. Surfaces should be cleaned as well as possible of all organic matter and debris before disinfection. The CFIA recommends using Virkon® (potassium monopersulfate 21.4%), available at most farm supply outlets, or vinegar diluted 1:1 with water as disinfectants. More detailed information on disinfectants can be found on the OIE website at www.oie.int/eng/maladies/fiches/A_A010.HTM. General information on FMD and travel precautions, national preventive steps, and disinfectants are available from the CFIA.

This situation is a reminder that FADs such as Foot and Mouth are a constant threat to Ontario livestock. Veterinarians are encouraged to use their expertise and the resources mentioned here to discuss the issue of heightened biosecurity with their clients.

Contact information:

- | | | |
|-------------------|---|---|
| CFIA | - | Dr. Jim Clark (519) 837-9400 |
| | - | Dr. Penny Greenwood, BSE contact (613) 225-2342 |
| OMAFRA | - | Dr. David Alves, Provincial Veterinarian (519) 826-3127
david.alves@omafra.gov.on.ca |
| AHL (U of Guelph) | - | Dr. Grant Maxie (519) 824-4120 x 4544 |

Office International des Epizooties (OIE) - www.oie.int

Canadian Food Inspection Agency (CFIA) - www.cfia-acia.agr.ca

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) - www.gov.on.ca/omafra

Ministry of Agriculture, Fisheries and Food (MAFF), UK - www.maff.gov.uk

Paul Innes and David Alves



Get even . . . with the people that have helped you.

- Anon



Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

We Need Your Help!

From time to time, the Provincial Veterinarian needs to get important information, such as Foreign Animal Disease alerts, to all veterinarians in the province. The fastest and most efficient method to disseminate this information is by electronic mail. If your practice has e-mail access, please send your e-mail address to vetscience@omafra.gov.on.ca. Access to this information will be limited to the Provincial Veterinarian and some members of the Veterinary Science unit. It will not be distributed to other parties or organizations, and will only be used to send out information of urgent importance to you and your clients.



Foot and Mouth Disease - What to look for!

The lesions of foot and mouth disease differ in cattle, pigs and sheep, and also vary with the severity of the disease.



Cattle

Cattle have the most severe lesions. In order, you will see:

- a fall in milk yield;
- high fever, 40 - 41EC;
- severe dejection;
- a painful stomatitis;
- abundant salivation, saliva hanging in long strings from the lips;
- lip smacking and shivering;
- vesicles developing on the buccal mucosa, dental pad and tongue, and at the same time on the feet especially between the clefts and around the coronary band;
- tender and sore feet, with sores and blisters.

Pigs

The disease may be milder than in cattle. There will be:

- sudden fever;
- blisters developing on the snout or tongue;
- lethargy; when forced to move, the pig will squeal loudly and hobble painfully;
- blisters forming on the coronary band, on the heels and in the cleft.

These blisters may extend right around the coronary band with a resulting separation of the hoof.

Sheep

- Sudden severe lameness; sheep lie down and are unwilling to rise as a flock. When made to rise, the sheep will stand in a half-crouching position with hind legs brought forward and be reluctant to move.
- Blisters at the coronary band, in the cleft of the foot and, occasionally, on the bulbs of the heels. If the blistering extends around the coronary band, hoof separation can occur. Blisters in the mouth are not often apparent but can develop on the dental pad and the tongue. A ruptured vesicle with secondary bacterial infection could resemble orf (sore mouth).

In the UK outbreak, there have been reports of:



Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

- C sudden deaths in lambs from heart failure,
- C abortions,
- C listlessness,
- C and off-food.
- C less than 5% of the flock showing lesions.

As photographs of the lesions do not show well in black and white, for good colour photographs in all three species, visit the Ministry of Agriculture, Food and Fisheries (MAFF), U.K. website at www.gov.uk/animalh/diseases/photos3.htm.

If you see any of these clinical signs in animals under your care, call the District CFIA Veterinarian immediately and do not leave the farm until instructed.

For further information,

visit the CFIA website at www.cfia-acia.agr.ca/english/heasan/disemala/fmduke.shtml

MAFF, "Important update for sheep farmers"@ 7 March 2001.

Sheep Veterinary Society, "Foot and Mouth Disease", www.sheepvetsoc.org.uk

Radostits, Gay, Blood and Hinchcliff. Veterinary Medicine 9th Edition. p 1062.

John Martin

Don't bring foot and mouth virus home with you



Could you, your family member or friend be the source of the next outbreak of foot and mouth disease (FMD) in Canada? This question should weigh heavily on the minds of many as they return from visits to the United Kingdom or other countries.

Here are several facts about the survival of the virus and recommendations to decrease the risk to our livestock. Read them carefully and follow them faithfully. You could be preventing a major epidemic in Canada.

1. **Survival of FMD virus in the environment.** Foot and Mouth Disease Virus (FMDV) is very resilient. FMD virus can survive for long periods in dark, moist conditions but is inactivated by a combination of drying, pH and temperature. It survives freezing temperatures. It was found viable in contaminated milk after pasteurization at 72°C for 15 seconds (Pirtle 1991). The virus can survive for extended periods outside the host in protected locations. In temperate climates, FMDV was recovered from cattle stalls 14 days after removal of infected cattle and from urine after 39 days. It was recovered from soil after 28 days in autumn, after 3 days in summer, and from dry hay at 22°C after 20 weeks storage (Pirtle 1991). The virus is inactivated by sunlight, extremes in pH, and high temperatures.

2. **Effect of pH on FMD.** FMD virus is extremely sensitive to pH. Virus survival is optimal between pH 7.2 and 7.6. At pHs above 9 and below 6 the virus is rapidly destroyed. For this reason, either acids (e.g. citric or acetic acid) or bases (e.g. caustic soda – sodium hydroxide or washing soda - sodium carbonate) are effective at inactivating the virus. These work better in combination with detergents to ensure penetration of the organic material. At warmer temperatures, the effect of pH on virus survival is increased whereas at colder temperatures it is reduced.

Survival of FMD virus in the environment.

Conditions	Survival
Dry feces	14 days
Slurry	6 months
Urine	39 days
Earth - Summer - Winter	3 days 28 days

3. **Cleaning clothes, shoes, hairbrushes, combs, suitcases or other objects.** The most important form of transmission of FMDV from humans to animals is mechanical, as the virus can persist on clothing, shoes, or luggage for at least 9 weeks (Cottral 1969). Human travelers are definitely a possible source of infection via this mode of transmission.

Travelers may choose from four common ways to clean or wash clothes, shoes, suitcases and travel items before returning to Canada – dry cleaning, washing soda, bleach, or Virkon®. The choice will depend upon the fabric or material being cleaned.

- a. **Use washing soda (sodium carbonate – an alkali – 10 parts in 100 parts hot water) or concentrated chlorine bleach (sodium hypochlorite – an oxidizing agent – 1 part in 3 parts water to give 2-3% available chlorine).** These products are available at grocery stores. **Use hot water (60°C). Use the long cycle** to assure adequate contact time. These are not to be used on hands, face or skin.
 - b. **Dry clean all clothes that cannot be washed.**
 - c. **Use Virkon® (potassium monopersulfate),** a commercial disinfectant-virucide approved for FMD disinfection in the UK. It is sold in Canada by DISPAR and is available from most farm supply outlets. Virkon® would be useful for disinfecting footwear and other objects. The maximum contact time necessary is 30 minutes. This is not to be used on hands, face or skin. The Canadian Food Inspection Agency (CFIA) is using a 2-% solution (50 gm package in 2.5 litres of water) in their disinfecting footpads at Canadian airports of entry.
 - d. **Use Virkon®, washing soda or bleach for shoes, suitcases, or other personal objects.** Use the 2-% solution given above. Allow the disinfectant to dry on the shoes for 10 to 30 minutes of contact time. As an alternative, CFIA also recommends a thorough cleaning and then standing the shoes (the soles at least) in a tray of acetic acid solution for 30 minutes. Prepare the 2.5% acetic acid solution by mixing equal parts of store-bought vinegar and tap water.
 - e. As an extra precaution, clothes and shoes that have been cleaned should not be worn near livestock for at least 9 weeks. Do the cleaning before leaving the city for return to your country home.
4. **Humans as carriers.** Humans can play a role in the transmission of FMDV. The virus can be carried by clinically affected humans for up to approximately 14 days after the onset of the disease. Humans can inhale the virus, trapping it in the respiratory tract for as long as 36

hours (Hyslop 1973). It can then be expelled in the saliva or breath and these can serve as a source of infection to susceptible animals. Human infections occur, but are extremely rare.

- a. **Wash and shampoo very thoroughly with soaps and detergents** before leaving the UK and upon return to Canada. Soap up using warm water and allow about 10 minutes of contact time. Use shampoo (usually alkaline) for washing your hair.
- b. **Do not go near livestock or farms for 14 days.** The CFIA advises travelers, who have been in countries with FMD, to stay away from livestock and livestock farms for 14 days after their return to Canada.

References:

Information for this article came from a very comprehensive Australian Animal Health manual on decontamination found at: <http://www.brs.gov.au/aphb/aha/ausvet.htm>; a document on the effects of the environment on FMD virus found at: <http://www.aphis.usda.gov/vs/ceah/cei/travrisk.pdf>; from personal communications with CFIA.

1. Cottral GE. Persistence of foot-and-mouth disease virus in animals, their products and the environment. *Bull Off Int Epizoot.* 1969. Mar-Apr; 70 (3): 549-68.
2. Hyslop NS. Transmission of the virus of foot and mouth disease between animals and man. *Bull World Health Organ.* 1973; 49 (6): 577-85.
3. Pirtle EC, Beran GW. Virus survival in the environment. *Rev Sci Tech* 1991. Sep; 10 (3):733-48.

Neil Anderson

Recommended precautions when visiting or returning from Europe

Check the UK Ministry of the Environment advice to the general public on countryside activities and visits in England, www.wildlife-countryside.detr.gov.uk/ruraltf/guidence.htm



Other countries have set up similar sites:

- Scotland - www.scotland.gov.uk 'The Comeback Code'
- Wales - www.wales.gov.uk 'Tourism Charter'
www.visitwales.com
- Northern Ireland - www.northernireland.gov.uk

Administrations of other countries that are affected have or will be issuing similar guidelines based on their particular circumstances. Make sure you check with your travel agent and customs officials at the international airport locations.

What you should not do . . .

- **Do not** go near cattle, sheep, pigs or deer and never feed farm animals. If you find yourself near these animals, walk away from them.
- **Do not** go onto farmland which has been or is being used by livestock.
- **Do not** leave any waste food in the open countryside or on farmland.



Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

- **Do not** use footpaths that are closed, particularly if they are near infected farms.
- **Do not** let any dogs off the leash.

Visiting a farm?

As an extra precaution, get permission from the owner first, even if the farm belongs to a relative. Then, follow the Ministry of Agriculture, Food and Fisheries instructions in the Foot and Mouth Disease Factsheet - “Advice on Precautions to be Exercised by People Working in the Countryside” (www.maff.gov.uk). If you can, delay your trip to a later date.

Regardless of where you are, obey all the restrictions in place in that area.

In Europe

Foot and Mouth Disease has now spread to France, the Netherlands and, possibly, Germany; so precautions are being taken across Europe. Many of the same precautions should be taken as for Britain. Obey any restriction of movement in the area you are visiting, such as posted “No entry” signs. The situation may change from day to day.

On returning to Canada

Do not bring back any meat, dairy or other animal products with you from Britain or Europe. It is now illegal to take any meat, dairy or other animal products out of Britain, even for personal consumption.

If you are going onto a Canadian farm within 14 days of your return, be sure to mark the appropriate square on the Immigration Canada Landing Card. If possible, postpone the farm visit for 14 days. Further information can be found on the Ministry of Agriculture website, www.maff.gov.uk.

John Martin



**Happy
Easter**

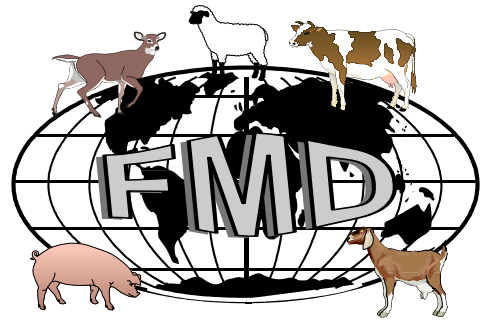


Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

Foot and mouth disease (FMD) information

The foot and mouth disease outbreaks in the European Union, South Africa, South America, and Asia alert us to our need for vigilance and surveillance, and a strong veterinary infrastructure. Our Canadian Food Inspection Agency (CFIA) has stepped up surveillance at ports of entry. Here are several references to information that should be useful to veterinarians, their livestock clients, and industry personnel visiting Ontario farms.



1. Clinical Information on the disease

- A comprehensive tutorial on FMD and FMD Virus <http://aleffgroup.com/avisfmd/>
- Colour photographs of actual lesions in pigs, cattle and sheep www.maff.gov.uk, click on “Foot and Mouth Disease”, scroll down panel on right of screen to “clinical signs, pigs, sheep and cattle.”

2. Canadian information

Canadian Food Inspection Agency Homepage, <http://www.cfia-acia.agr.ca/english/toce.shtml>
OMAFRA web site, <http://www.gov.on.ca/omafra>
Agricultural Information Contact Centre, 1-877-424-1300

3. Canadian contacts

- Canadian Food Inspection Agency - call your local CFIA office at the number listed in the blue pages of your telephone directory or toll free at 1-877-227-0677, 8:00 a.m. to 8:00 p.m.
- Ontario Ministry of Agriculture, Food and Rural Affairs
Dr. David Alves, Provincial Veterinarian, Veterinary Science, OMAFRA, Guelph, Ontario. (519) 826-3127 or david.alves@omafra.gov.on.ca

4. Daily updates about the foot and mouth disease outbreak

Promed: <http://www.promedmail.org>
UK MAFF: <http://www.maff.gov.uk/animalh/diseases/fmd/fmd.htm>
<http://www.maff.gov.uk/animalh/diseases/fmd/default.htm>
UK Media (TV) www.bbc.co.uk
www.itn.co.uk
Newspapers: The London Times www.thetimes.co.uk
The Guardian www.guardian.co.uk
The Daily Telegraph www.telegraph.co.uk
The Guardian newspaper provides an interactive map that traces the FMD outbreak in the United Kingdom.

5. Other useful websites

USA APHIS' FMD factsheet, <http://www.aphis.usda.gov/oa/pubs/fsmd00.html>
UK Ministry of Agriculture, Fisheries and Food's homepage, <http://www.maff.gov.uk>
Disinfectants approved by UK MAFF,
<http://www.maff.gov.uk/animalh/diseases/fmd/disinfectant.htm>

Neil Anderson, John Martin, David Alves



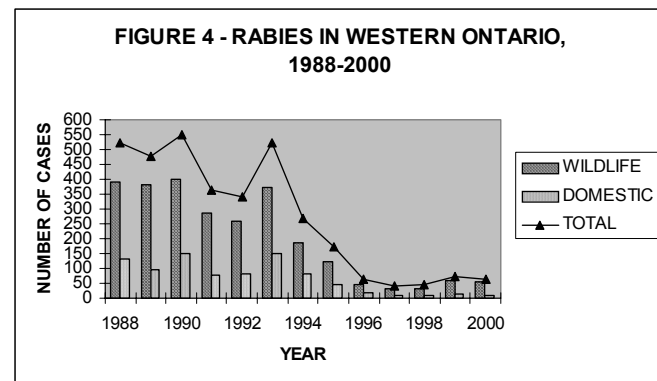
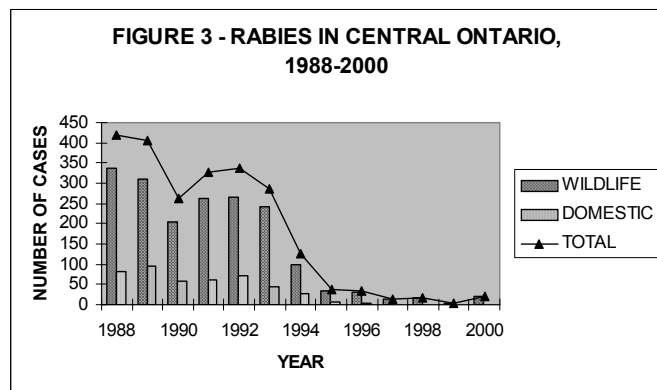
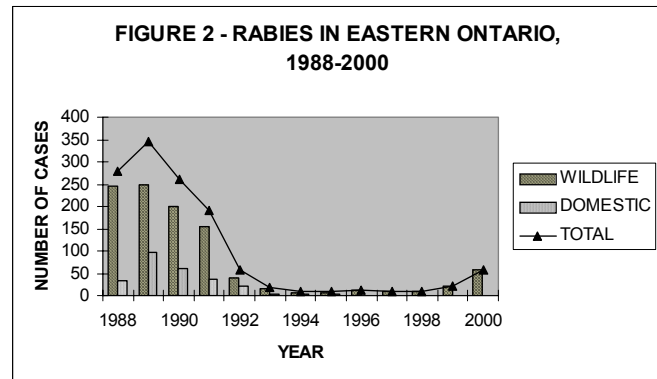
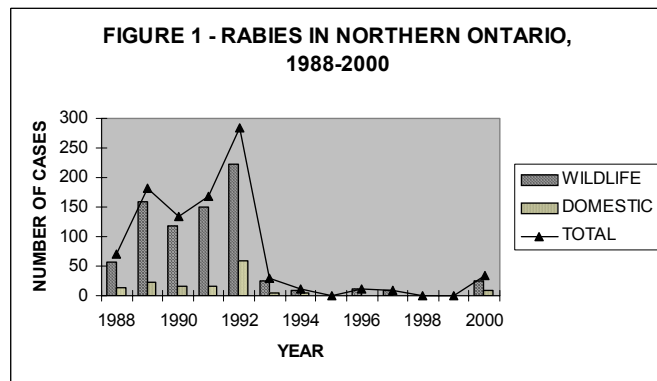
Rabies in Ontario

Earlier this year a western Ontario farmer was attacked and killed by his horse. Histological examination of the horse's brain tissue confirmed rabies. The horse was unvaccinated and was suspected to have come in contact with a skunk. This case serves as a reminder that Ontario is a rabies endemic area, even though cases in farm animals are infrequent.

Since the rabies baiting program began in 1989, rabies has dropped to its lowest level in Ontario since the early 1960's. During the 1980's, Ontario averaged 2,000 cases of rabies per year. The dramatic change over the last 7 years has greatly reduced the risk of humans, pets and livestock acquiring rabies, but the **risk is not zero**. **Figures 1-5** show the number of rabies cases over the last 12 years, for each of the regions in Ontario ⁽²⁾. The number of rabies cases by county/district and species for 2000 is shown in **Table 1** ⁽²⁾.

The most recent CVO Update has attempted to clarify the confusion over the use of rabies vaccines with 3-year claims ⁽¹⁾. Take home points were:

- All cats and dogs three months of age and older must be vaccinated against rabies.
- In some parts of Ontario, several classes of livestock must be vaccinated against rabies where they are accessible to the general public, i.e. petting zoos (see CVO Update Vol.17, No.1).
- Rabies vaccination must be performed by a licensed veterinarian, using a vaccine that is licensed in Canada and in accordance with the label directions.
- The veterinarian performing the vaccination must provide a certificate of immunization and, in the case of a dog or cat, must provide a rabies identification tag.
- Regulation 567 of the Health Protection and Promotion Act does not require annual vaccination but current vaccination according to label directions.



- Veterinarians using rabies vaccines with a 3-year label claim may issue a certificate valid for 3 years, unless they feel the animal is at sufficient risk of exposure to warrant annual vaccination.

All rabies vaccines labelled for cattle and horses in Canada recommend annual vaccination. Two of the four vaccines labelled for sheep have a 3-year claim.

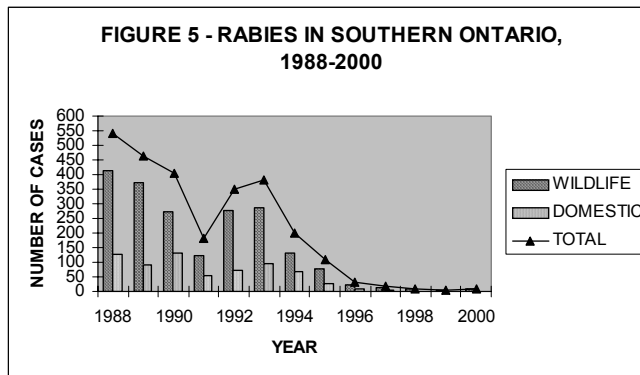


Table 1: Rabies Cases by County/District and Species for 2000.

Region	Total Cases	County/District (No. Cases)	Species (No. Cases)
Northern	35	Cochrane (35)	red fox (23); bovine (5); dog (4); wolf (1); groundhog (1); striped skunk (1)
Eastern	57	Carleton (6); Dundas (1); Frontenac (7); Grenville (19); Leeds (15); Leeds-Grenville (7); Ottawa-Carleton (2)	raccoon (40); big brown bat (17)
Central	19	Durham (2); Hastings (2); Northumberland (1); Peterborough (10); Simcoe (3); Victoria (1)	striped skunk (13); big brown bat (6)
Western	64	Bruce (14); Dufferin (5); Grey (15); Halton (1); Huron (10); Peel (1); Perth (3); Waterloo (6); Wellington (9)	striped skunk (43); red fox (7); bovine (5); equine (3); dog (3); big brown bat (2); little brown bat (1)
Southern	8	Brant (1); Kent (2); Middlesex (4); Niagara (1)	big brown bat (7); silver-haired bat (1)

If an animal is suspected of being rabid, or a person thinks that their animal(s) has been exposed to rabies, call the nearest office of the Canadian Food Inspection Agency (CFIA), which is listed in the blue pages of the phone book - an inspector from the agency will investigate all calls. The Rabies Reporter is a newsletter about current issues in rabies research and control. It is produced through the Ontario Ministry of Natural Resources, the Food Production and Inspection Branch of the Canadian Food Inspection Agency, the Ontario Ministry of Health and Long-Term Care, and the Geographic Information Systems Laboratory at Queens University. To be added to the mailing list contact: The Rabies Reporter

Rabies Research Unit, Ontario Ministry of Natural Resources
P.O. Box 4840, Peterborough, ON K9J 8N8
Phone: (705) 755-2270

For more information on rabies, see:

<http://www.mnr.gov.on.ca/mnr/rabies/aware.html>

<http://www.cfia-acia.agr.ca/english/anima/heasan/disemala/rabrage.shtml>

1. Martin A. Regulations on rabies vaccination clarified. CVO Update 2000; Vol.17, No.1.
2. Ontario Ministry of Natural Resources, Rabies Reporter Home Page. <http://www.gis.queensu.ca/RReporter/>

Jocelyn Jansen, Bob Wright



What type of long-acting penicillin is it?

When selecting an antibiotic to treat a bacterial infection in a pig, swine producers choose a product based on effectiveness, cost and ease of administration. When using injectable antibiotics, producers prefer products that do not require multiple daily injections. Pigs prefer these as well. Therefore antibiotics that do not require daily injections are much preferred over those that do.

The so-called long-acting penicillins have been popular with swine producers for many years. **There are two types of long-acting penicillin products on the market and this can cause confusion when deciding on dosages and withdrawal times.**

The traditional long-acting penicillin products listed in **Table 1** contain two different types of penicillin; procaine penicillin G and a more slowly released form of penicillin called benzathine penicillin. These two types of penicillin are contained in equal proportions of 150,000 International Units (I.U.) each per milliliter (mL or cc) for a total of 300,000 I.U. of penicillin per mL.

Table 1. Long-acting penicillin products that contain benzathine penicillin.

Long-acting Penicillins which contain both Benzathine and Procaine Penicillin	Dose	Frequency	Colour	Withdrawal Time
Benzapro (Medprodex)	1 cc/4.5-22.5 kg 2 cc/22.5-67.5 kg 2 cc/> 67.5 kg	Repeat after 3 to 5 days	Pink	14 days
Longisil (P.V.U.)	1 cc/4.5-22.5 kg 2 cc/22.5-67.5 kg 2 cc/> 67.5 kg	Not given	Pink	14 days
Penlong XL (Rogar/STB)	1 cc/4-20 kg 2 cc/20-65 kg 3 cc/100 kg	Repeat after 3 to 5 days	White	14 days
Duplocillin (Intervet)	1 cc/20 kg	Repeat after 3-5 days	White	14 days
Pendure Neat (Ayerst) NOT APPROVED FOR SWINE	2 cc/70 kg for cattle	Repeat after 3-5 days	Pink	14 days

All these products, at one time were coloured pink to make it easier for livestock producers to distinguish "regular" penicillin (white) from "long-acting" penicillin (pink). **Times change, and now some long-acting penicillins are coloured white.**

The second type of long-acting penicillin product (**Table 2**) contains no benzathine penicillin and like "regular" or "short-acting" penicillins contains 300,000 IU of procaine penicillin G per mL and no other type of penicillin. The term "long-acting" is used in part due to the fact that these products contain antioxidants intended to extend their bioactivity in the animal body. Long-acting also refers to the fact that they have been cleared for a higher label dosage (1cc/15

kg) and have a longer withdrawal time (10 days) than other "regular" procaine penicillin G products of the same concentration.

Table 2. Long-acting penicillin products that do not contain benzathine penicillin.

Long-acting Procaine Penicillin G	Dose	Frequency	Withdrawal Time
Derapen (Ayerst)	1 cc/15 kg	1x/day	10 days
Propen LA (APA)	1 cc/15 kg	1x/day	10 days
Ultrapen LA (P.V.U.)	1 cc/15 kg	1x/day	10 days

Each of these 3 products is white in colour.

The "regular" penicillins are not labelled as long-acting but have the same concentration of procaine penicillin G as these long-acting products. However, the label withdrawal times for the regular penicillins are 5-8 days and their dosages are lower than the 1cc/15 kg which is approved for the long-acting products. Always make sure when you pick-up a bottle of "regular" or "long-acting" penicillin that you are aware of what type of product it is and the manufacturer's recommended dosage and withdrawal times.

With increasing emphasis on residue avoidance and the prudent use of antimicrobials in swine production, it is important that swine producers are not confused when they administer a penicillin product to a pig. **Neither the colour of the medication nor the words “long-acting” indicate with certainty the product, its concentration, dose or withdrawal times. Read the label and consult with your veterinarian to avoid costly mistakes.**

Tom Sanderson, Tim Blackwell

Sniffing out threats to our livestock

Each day, at airports all over Canada, Canadian Food Inspection Agency's (CFIA) sniffer beagles detect restricted or prohibited items brought in by travelers arriving in Canada. These fruits, plants, or meat could contain plant or animal pests and diseases, which could threaten Canada's agriculture and environment. One dog had many thousand "hits" before retirement. They are an essential part of our first-line of defense against pests and diseases that could threaten Canada's agriculture, population and environment.



The dogs inspect every piece of luggage or hand baggage from international travellers passing through the baggage reclaim area of the airport. Seven days a week, CFIA inspectors are on duty to inspect passengers' baggage in search of plants, animals, and other products that could harbour pests or diseases.

For more information, see: <http://www.cfia-acia.agr.ca/english/corpaffr/publications/detecte.shtml>

Neil Anderson

Bovine abortion

Neospora spp. continues to be the pathogen most frequently identified in bovine fetuses submitted to the Animal Health Laboratory, University of Guelph (AHL) for gross and/or histological examination (**Table 1**). From May 1999 to April 2000, 48 of the 58 cases of *Neospora* spp.-associated abortion originated from dairy herds; 2 were from beef herds and 8 were from cattle herds of unknown commodity. As the AHL receives more submissions from dairy than beef herds, this may partly explain the greater frequency in dairy cattle; however, it may also reflect the relative prevalence of *Neospora* spp. infection in dairy compared to beef herds. (These laboratory data can be used for surveillance of trends - population estimates are not possible, however.)

Table 1.

Most Frequent Etiologic Diagnoses # cases / (%) ¹	93/94	94/95	95/96	96/97	97/98	98/99	99/00	May 00/Jan 01
<i>Neospora</i> spp.	8 1.6%	30 5.6%	46 11%	60 12.5%	57 15.8%	53 14%	58 15%	32 15%
Bovine viral diarrhea virus (BVD)	24 4.9%	15 2.8%	9 2.2%	11 2.3%	10 2.8%	8 2.1%	20 5.3%	8 3.7%
Bovine herpes virus type 1 (IBR)	7 1.4%	6 1.1%	4 0.98%	0	0	1 0.26%	2 1%	0
Bacterial abortion - other ²	46 9.3%	71 13%	56 14%	55 11.5%	39 10.8%	47 12.3%	37 9.8%	37 17.1%
<i>A. pyogenes</i>	11 2.2%	9 1.7%	9 2.2%	23 4.8%	14 3.9%	11 2.9%	14 3.7%	6 2.8%
<i>Bacillus licheniformis</i>	11 2.2%	6 1.1%	7 1.7%	9 1.9%	8 2.2%	5 1.3%	4 1.1%	6 2.8%
<i>Ureaplasma</i> spp.	15 3%	5 0.9%	14 3.9%	13 2.7%	6 1.7%	9 2%	8 2%	8 4%
Mycotic abortion	16 3.3%	20 3.7%	19 4.7%	23 4.8%	14 3.9%	14 4%	4 1%	7 3%
Mycotic - <i>Candida</i> sp./yeast ³	-	-	-	-	-	0	5 1%	0
Placentitis, etiology not identified ⁴	-	-	-	-	-	65 17%	58 15.4%	45 20.83%
No significant lesions, etiology not identified	347	361	234	275	361	157 41%	151 40%	67 31%
Total abortions submitted ¹	492	537	405	480	361	383	376	216

1 Pathology cases

2 Includes *E.coli.*, *Leptospira* spp., *Salmonella* spp, *Staphylococcus* spp, *Listeria monocytogenes*, *Coxiella* spp., *Actinobacillus* spp, & those with lesions compatible with bacterial abortion

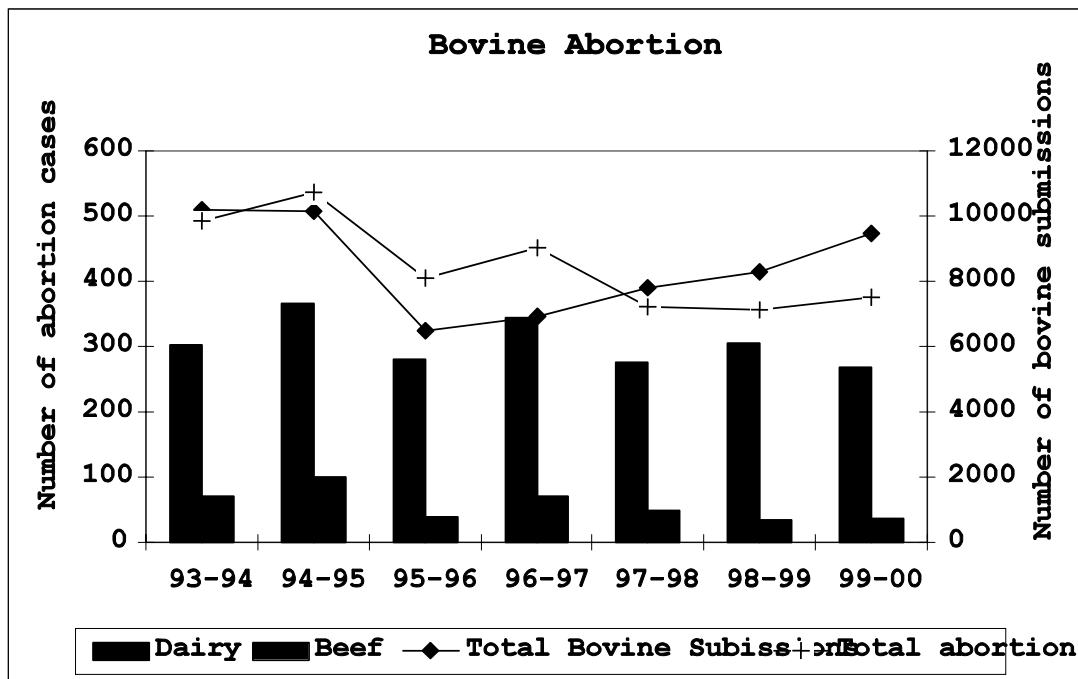
3 Previously included with mycotic abortion.

4 Previously included with idiopathic abortions. Etiology possibly not identified as not all submissions requested bacterial, *Mycoplasma* sp or virus culture

Although placentitis was described in 58 cases, etiologic agents were not identified. In more than 43% of these submissions requests for bacterial *Mycoplasma* or viral culture were sporadic. Etiologic diagnosis of abortion can be improved with appropriate sample submission (see AHL User's Guide).

Overall, the number of bovine abortions submitted for gross and histological examination annually, since 1997/1998, is similar (**Figure 1**) and represents about 4 to 4.5% of the total AHL bovine case submissions. Bovine submissions to the AHL have steadily increased since 1995/1996 to 9500 in 1999/2000. Abortions represented 10% of sample submission to the AHL at the herd level in 1998/1999 and 7% in 1999/2000. Interpreting trends between years must be done cautiously due to the unknown level of bias affecting submission rates to the AHL.

Figure 1.



Beverly McEwen, Animal Health Laboratory, University of Guelph, David Alves

BVD Report 2000

The number of cases of Bovine Viral Diarrhea virus diagnosed by the Animal Health Laboratory of the University of Guelph was lower in 2000 than in the previous year, but similar to 1998 figures. There were 136 cases compared to 219 in 1999, even though bovine submissions to the lab increased slightly over the same 12 month period. **Figure 1** shows the cumulative cases relative to bovine submissions from 1991-2000.

Thirty-four of the 136 cases in 2000 were from eastern Ontario. The relative increase in cases in eastern Ontario seen in 1999 did not continue into 2000, and cases from this region relative to submissions actually dropped more than in the rest of the province. **Figure 2** shows the monthly cases since 1998 by region (K denoting eastern Ontario and G denoting all other regions combined).

The majority of cases continue to come from dairy operations. Of 123 cases, for which the commodity type was identified, there were 90 dairy, 31 beef and 2 veal. There was no statistical difference among cases in morbidity, mortality, or age distribution across commodity class or region. However, we are following trends closely (especially in eastern Ontario). Veterinarians

can use their expertise, vaccination and biosecurity to keep their clients' cattle protected from BVD.

Figure 1. BVD cases relative to bovine submissions to the AHL, 1991-2000

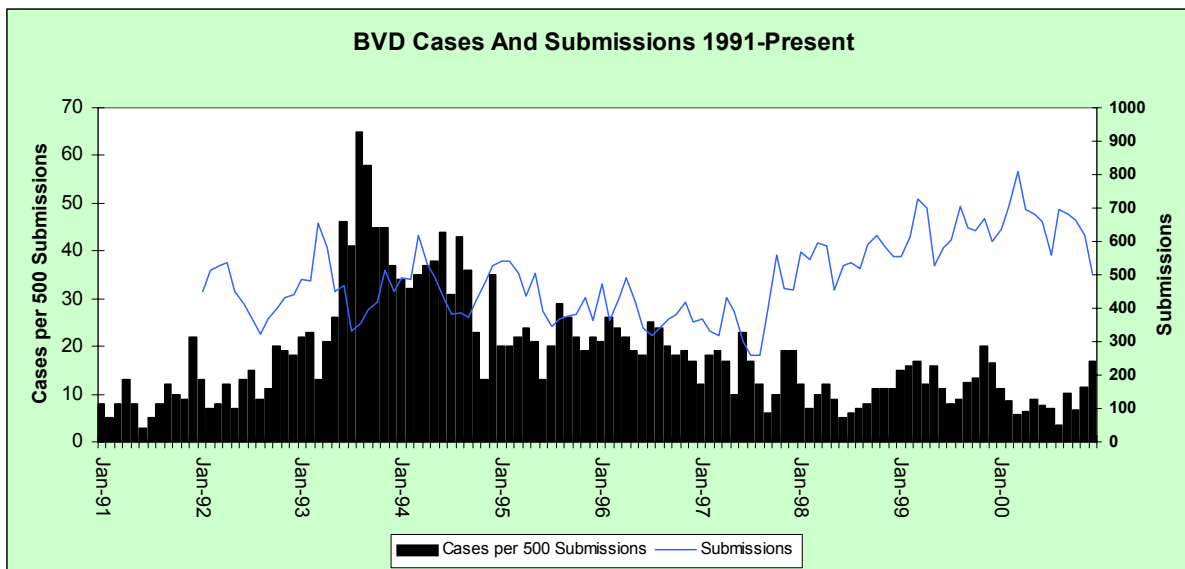
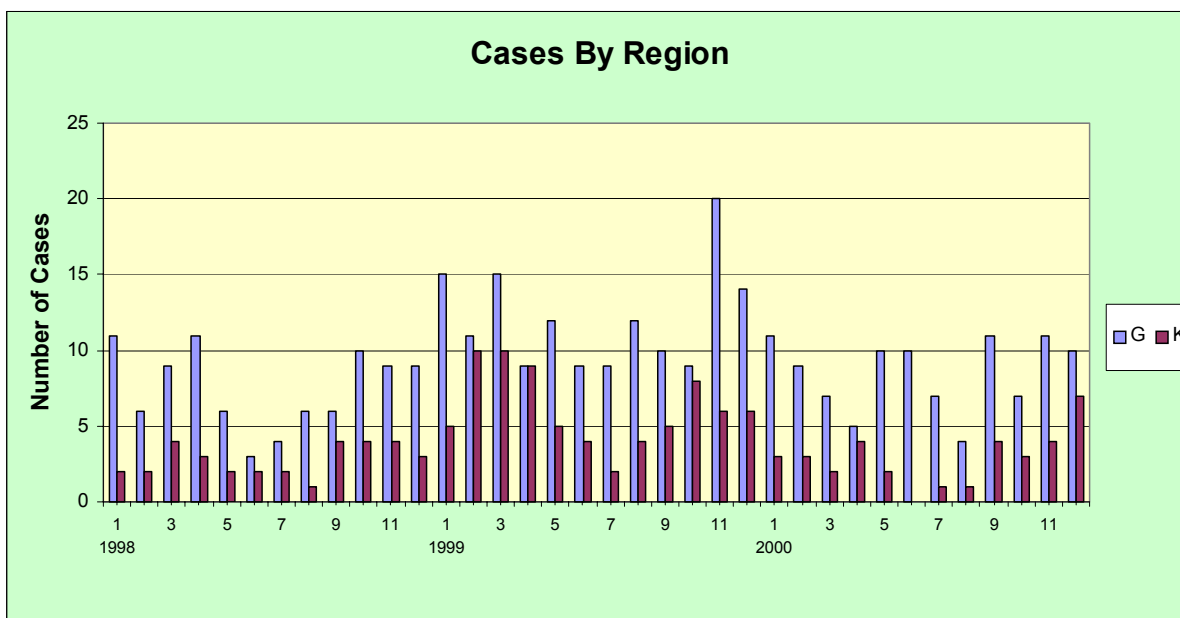


Figure 2. BVD cases by region. K=eastern Ontario, G=all other regions.



Paul Innes

Diagnostic data courtesy of the Animal Health Laboratory, University of Guelph

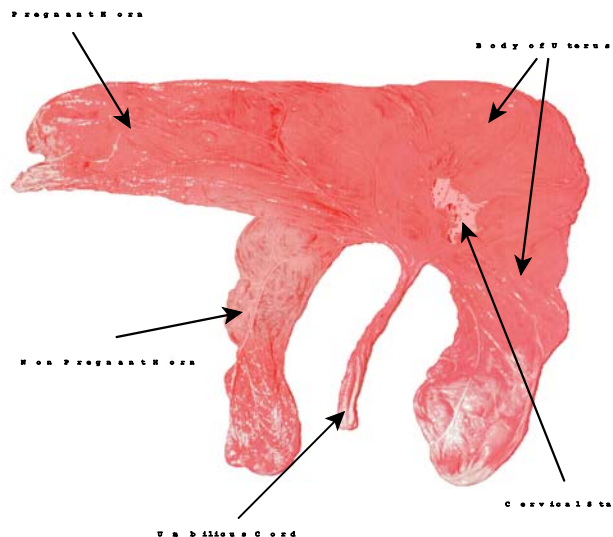
Examination of the mare's placenta

The placenta of a mare should be examined for tears immediately after foaling ⁽¹⁾. A piece of placenta remaining in the uterus will very quickly cause a uterine infection, colic and, occasionally, laminitis. Placental examination is also quite useful in diagnosing peripartum problems. However, many of the normal structures may be easily mistaken for lesions. The mare's placenta is made up of two distinct membranes, the amnion, the opaque membrane which immediately surrounds the foal, and the chorioallantois which joins to the uterus. On initial examination, the practitioner will encounter a placenta which has been turned "inside-out". The "velvety" chorionic surface will be inside while the glistening allantois surface is outermost. This inversion occurs when the foal, still enveloped in the amnion, breaks through the chorioallantois at the cervical star. The foal moves into the cervix and vagina pulling the chorioallantois by way of the umbilical cord, everting it through the hole at the cervical star.

Examination of the placenta starts with obtaining an accurate weight. Digital postage scales capable of weighing up to 30 lbs. are inexpensive and work well. The normal placenta of the near-term thoroughbred mare should weigh about 11% of the body weight of the foal or approximately 5.7 ± 0.08 kg (12.5 lbs.) ⁽²⁾. Placenta weights are important indicators of edema and reactions to infectious and non-infectious agents that may affect foal mortality. Dystocias and neonatal mortality have been associated with placenta weights of 8 - 14 kg.

While the glistening allantois surface is still outermost, check for any tears or any abnormalities. The most common area for tears is the tip of the non-pregnant horn. Once you have examined the placenta for tears, turn it "right-side" out, exposing the "velvety" chorionic surface. Lay the placenta out in a "Y" or "F" shape. The 3 arms of the "Y" correspond to the placenta occupying the 2 uterine horns and the equally long uterine body. The uterine body is identified by the pale and, in some cases, fibrotic cervical star. This is usually the point of rupture through which the foal exits.

Figure 1. Placenta of the Mare (chorioallantois - chorionic surface)



Examination of the normal placenta may reveal slight edema and/or thickening of the tips of the uterine horns, small (0.1 -1.0 cm) bare foci scattered at random over the chorionic surface, and distinct folds of the chorionic surface of the non pregnant horn. These folds are prominent since they were not stretched by the pregnancy. Often a brown "liver-like" material is found floating in the allantoic cavity. It is a hippomane. Dr. Jim Rooney believes that it arises as an out-pouching of the allantois which eventually forms a pedicle and separates to float free in the allantoic cavity⁽³⁾. Other references suggest that it is a collection of debris, thought to be deposits from the foetal urine and cells⁽⁴⁾. Histologically, it appears to be a concentric deposition of amorphous material like a urinary calculi.

The umbilical cord should be measured. The umbilical cord of the thoroughbred horse is usually between 36 and 83 cm in length. Some have been reported up to 105 cm in length. However, the greater the length of the umbilical cord, the greater the chance for umbilical torsions. It is common to see five or six twists of the umbilical cord with no apparent problem. Severe haemorrhage and edema of the umbilical cord is generally observed in excessive torsion.

The presence of meconium staining should be noted. It indicates fetal stress, as seen with herpesvirus abortions and ergot alkaloid toxicity.

Practitioners should refer to page 13 of the 'Animal Health Laboratory - User Guide' for complete instructions on submission of samples⁽⁵⁾. Veterinarians may also choose to submit the entire placenta and fetus for examination to the laboratory. Entire placentas should be packed with ice and shipped in sealed watertight containers. Plastic pails with tight fitting lids work well for this purpose. If you choose to collect placental samples, **Table 1** provides guidelines for sample collection and potential lesions in these areas.

Table 1.

Guide to Collection of Placental Samples		
Sampling Area (Place samples in separate, clearly marked containers.)	Potential Lesions	Cause
Chorioallantois - chorionic surface – margin of cervical star and uterine body – samples from each of uterine body, pregnant and non pregnant horn	placentitis diffuse placentitis fresh placenta with edema	ascending bacteria, mycotic infections extending from cervical star Leptospirosis Herpesvirus (EHV-1), ergot alkaloid toxicity
Chorioallantois - allantoic surface – junction of uterine body and horns	thick exudate	Nocardia sp..
Umbilical Cord	haemorrhage and edema	torsions of cord
Amnion	lesions uncommon except for edema	edema associated with ergot alkaloid toxicity

1. *Schlafer DH. Gross examination of equine fetal membranes: what's important - what's not. Proc. of the Equine Symposium: The Periparturient Mare and Neonate, Society of Theriogenology/American College of Theriogenologists, San Antonio, Texas. Nov. 2000.*
2. *Whitwell KE, Jeffcott LB. Morphological studies on the fetal membranes of the normal singleton foal at term. Res. Vet. Sci. 1975; 19:44-55.*

3. Rooney JR, Robertson JL. *Equine Pathology*. Ames: Iowa State University Press, 1996: 240.
4. Dickerson JW, Southgate DA, King JM. The origin and development of Hippomane in the Horse and Zebra. *J. Anatomy* 1967; 101 (2):285-293.
5. *Animal Health User Guide - Dec 2000*. Available from: Animal Health Laboratory Services Division, University of Guelph.

Bob Wright

NAHMS (National Animal Health Monitoring System) feedlot information: Feedlot '99

NAHMS posted new baseline reference information about feedlot health and management from their 1999 study to their website. Look in the WHAT'S NEW or BEEF FEEDLOT sections at <http://www.aphis.usda.gov/vs/ceah/cahm>.

Feedlot '99 topics include attitudes toward pre-arrival processing, vaccination against respiratory disease, injection practices, and labor. Here are several highlights.

Overall, 32.4% of feedlots received pre-arrival processing information on cattle always or most of the time.

A greater percentage of large feedlots (70.2%) than small feedlots (54.6%) considered pre-arrival processing information very important.

Approximately three out of five feedlots administered a vitamin injection to cattle.

Approximately 72% of cattle placed in feedlots were vaccinated against clostridial disease.

Overall, 15.9% of cattle received two or more clostridial vaccinations at the feedlot. Of those cattle, that received a clostridial vaccination, more than four out of five were vaccinated subcutaneously in the neck region, while the majority of the remainder were administered the toxoid intramuscularly in the neck region.

Almost all cattle were administered an injectable vaccine against viral respiratory pathogens. Of those cattle vaccinated, 96.9% were vaccinated against bovine herpesvirus 1, the virus that causes IBR. Over 94% of cattle were vaccinated against BVD.

Overall, 8.7% of cattle were administered an intranasal vaccine against IBR. 97.5% of feedlots vaccinated cattle against IBR with either an intranasal or injectable vaccine.

19% of cattle received an antibiotic injection for the prevention or treatment of disease.

Overall, about two-thirds of cattle received an injectable anthelmintic. Approximately 98% of cattle that received an anthelmintic injection were administered these in the neck region, and three out of four of these injections were given using a subcutaneous route.

Almost all feedlots used corn in the finishing ration of cattle. Small feedlots were more likely to use corn byproducts than large feedlots (43.6 compared to 29.9%, respectively).

Nearly 97% of large feedlots were at least somewhat familiar with a beef quality assurance program. 86% of small feedlots were at least somewhat familiar with such programs.

Neil Anderson



Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

A Correction

In the December 2000 issue of **CEPTOR**, the article on page 21 describing an increase in the total volume of milk replacer and the frequency of feeding contained an error. The error was the critical ambient temperature at which one would change the feeding strategy. It is 42°F and not 32°F. Here is a revised and corrected version. I regret the error.

Three meals per day for cold housed calves

As fall fades away and winter strikes, we prepare ourselves to stay warm. We dig out our sweaters, boots, hats and gloves. This is also the time to remember the special needs of our calves in cold housing. Rather than putting a sweater on them, put on at least one extra meal a day. That's what they need to meet their requirements for heat loss from cold temperatures.

The common advice is to increase the milk replacer by 1 percent for every 1 degree the temperature falls below 42°F. **Table 1** shows temperatures in Fahrenheit and Celsius and the corresponding recommendation for an increase in milk replacer. For example, the increase in milk replacer is approximately 20% when the calf housing is at -5°C. A total daily feeding of 4 litres in warm weather increases to a requirement of approximately 5 litres at -5°C or 5.2 litres at -10°C. Some producers gradually increase the volume offered at each of two meals. Others find the volume required in extremely cold weather to be more than they care to feed at a single meal. Therefore, they feed a third meal during the day.

If calves are giving you the cold stare this winter, they are likely asking for another meal, not a sweater. Extra milk replacer is the key to keeping them warm and healthy in cold weather.

Table 1. The percent increase in milk replacer recommended to meet requirements for heat loss in cold calf housing.

Temperature in the Calf Housing		Percent Increase in Milk Replacer
32°F	0°C	Increase 10 %
22°F	- 5°C	Increase 20 %
12°F	- 10°C	Increase 30 %

Neil Anderson

The man who doesn't read books has no advantage over the man that can't read them.

- Mark Twain

Press on. Nothing in the world can take the place of persistence.

- Ray A. Kroc



Ontario

Agriculture, Food and Rural Affairs Veterinary
Science - Fergus

Resources

Synchronization System Planner for Beef Cattle. This is a downloadable Excel program with 11 different synchronization systems and a cost analysis module. You will find the software in the January Features section at: <http://www.iowabeefcenter.org/> or contact: Dr. Daryl R.

Strohbehn, email: stroh@iastate.edu, Extension Beef Specialist, Iowa Beef Center, Iowa State University, 337 Kildee Hall, Ames, IA 50011; Phone: (515) 294-0847; Fax: (515) 294/3795.



Better Milk Pasteurizer© calf milk pasteurizer. RR # 4, Box 288B, Winona, MN. 55987; Phone: (877) 356-6455 or Fax: (507) 452-5466; <http://www.bettermilk.com/>.

Goodnature Products Inc. calf milk pasteurizer. P.O. Box 866, Buffalo, NY 14240 USA; Toll Free: 1-800-875-3381; Phone: (716) 855-3325; Fax: (716) 855-3328; <http://www.calfmilkpasteurizer.com/> or sales@goodnature.com

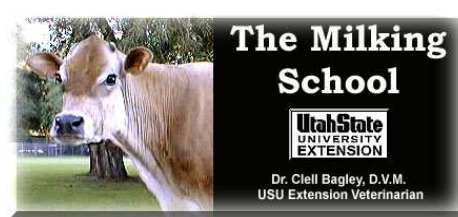
The **Ontario Farm Women's Network** launched a toll free telephone help-line for Ontario farmers and their families on November 27, 2000. This confidential help-line provides personal support for farm families in Ontario. **1-888-451-2903.**

Vetswap, The Veterinary Profession's Internet Billboard,
<http://www.vetswap.com/>.



The Milking School. There are two versions - a videotape and an Internet site. The videotape shows the cows, equipment, workers and very specific steps in milking cows. It is available in English and Spanish for \$25.00 (US), payable to Utah State University. Mail your request to Dr. Clell Bagley, 5600 Old Main Hill, Utah State University, Logan, UT 84322; clellb@EXT.USU.EDU.

The Internet version has text and photographs on the same subject. To view it, log on to: <http://www.ext.usu.edu/ag/mschool/>.



Factsheets: **Biosecurity for Horse Farms** (Order # 00-091), **Artificial Rearing of Lambs** (Order # 99-019), **Assisting the Ewe at Lambing** (Order # 98-091), **Care of the Newborn Lamb** (Order # 98-087), **Early Weaning of Lambs** (Order # 99-021).
OMAFRA Publication Order Centre, 1-888-466-2372 (within Ontario) or (519) 826-3700.



Continuing Education

- Apr 19, 2001 “Stuff to Chew On”, Joint Meeting/Spring Seminar, Ontario Association of Bovine Practitioners and Ontario Agri Business Association, Holiday Inn, Guelph. Dr. Todd Duffield, Ontario Veterinary College, Guelph, ON N1G 2W1; Fax: (519) 763-8621.
- May 6 -9, 2001 Aquaculture Association of Canada, 18th Annual Meeting, Aquaculture Canada 2001, Halifax, Nova Scotia.
Joan Cottell, P.O. Box 2223, Halifax, Nova Scotia B3J 3C4;
Fax: (902) 424-0699; <http://gov.ns.ca/nsaf/aac2001/engl/index.htm>.
- May 21-23, 2001 Livestock Environment Symposium. Galt House, Louisville, Kentucky.
<http://www.asae.org/meetings/index.html>; The American Society of Agricultural Engineers, 2950 Niles Road, St Joseph, MI 49085-9659;
Phone: (616) 429-0300; Fax: (616) 429-3852.
- May 23-26, 2001 American College of Veterinary Internal Medicine 2001 Forum. Food animal, equine, small animal, and technician programs. Denver, CO.
www.acvim.org/wwwfp/forum2001/forumhome.htm or www.acvim.org.
- May 30-June 2, 2001 Equine Nutrition and Physiology Society Symposium 2001. Lexington, KY. ENPS, 1111 North Dunlap Avenue, Savoy, IL 61874-9604;
Phone: (217) 356-3182; Fax: (217)398-4119; enps@assoqhq.org;
<http://www.enps.org/>.
- Aug 12-16, 2001 The 11th International Conference on Production Diseases of Farm Animals. The Royal Veterinary and Agricultural University (RVAU), Thorvaldsensvej 40, DK-1870 Frederiksberg C, Denmark;
<http://www.11icpd.kvl.dk/>.
- Aug 8-11, 2001 Joint Congress: CVMA, BCVMA and World Small Animal Veterinary Congress 2001. Vancouver, BC; <http://www.venuewest.com/wsava2001/> or <http://www.cvma-acmv.org>.
- Sept 13-15, 2001 Joint Congress: Second International Mastitis Symposium. 34th Annual Conference American Association of Bovine Practitioners. Society for Theriogenology. Vancouver, BC; www.nmconline.org or www.aabp.org.
Note: Abstracts for NMC due November 30, 2000.



CEPTOR feedback form

Please add our clinic to your mailing list. 1/4

Clinic name:

Practitioners:

Mailing address:

..... Postal Code.....

Tel.: Fax:

Email:

Please return this form with your comments to:

John Martin, Veterinary Science, OMAFRA, Wellington Place, R.R. # 1, Fergus, Ont. N1M 2W3

Tel: (519) 846-3420 Fax: (519) 846-8101 Email: john.martin@omafra.gov.on.ca

Topics for future issues include:

.....

.....

.....

Comments:

.....

.....

.....

Deadline for next issue: May 31, 2001



Ontario

Agriculture, Food and Rural Affairs Veterinary Science - Fergus



Ontario
Ministry of Agriculture,
Food and Rural Affairs

Veterinary Science
2nd Floor, Wellington Place
R. R. #. 1, Fergus, Ontario
N1M 2W3

