

Infosheet

July 2009

INTRODUCTION

The first months of 2009 have been interesting for horse disease outbreaks. Import restrictions were placed on:

- horses, because of piroplasmosis being diagnosed in Florida and, later, in Missouri;
- horses and horse germplasm (semen and embryos), because of a North-American-wide investigation into contagious equine metritis; and
- horses coming from New Mexico and Texas, due to vesicular stomatitis.

With a very mobile horse population, horse owners should remember that biosecurity measures to prevent diseases from entering their premises should be incorporated into their daily procedures. Refer to the factsheet, *Biosecurity for Horse Farms*, for more information, www.omafra.gov.on.ca/english/livestock/horses/facts/00-091.htm.

Under the authority of the *Health of Animals Act and Regulations*, the Canadian Food Inspection Agency (CFIA) monitors and acts to prevent the introduction or presence of certain animal diseases in the domestic population. The Act divides the diseases of concern into three (3) categories. For the equine species, the diseases of interest include:

1. Reportable Diseases Canadian Disease Status

African horse sickness.....	not present in Canada
Anthrax.....	controlled endemic*
Contagious equine metritis....	not present in Canada*
Equine infectious anemia	controlled endemic*
Piroplasmosis (<i>Babesia caballi</i> & <i>Babesia equi</i>)	not present in Canada
Rabies.....	controlled endemic*
Vesicular stomatitis	not present in Canada

(* see section for details)

2. Immediately Notifiable Diseases (for laboratories only)

This group includes dourine, western and eastern equine encephalitis (WEE and EEE), West Nile virus

(WNV), glanders (*Burkholderia mallei*), hendra virus, and Japanese encephalitis. Canada is free of all of the above diseases with the exception of West Nile virus, EEE and WEE, which occur sporadically.

3. Annually Notifiable Diseases

The annually notifiable diseases are the more common endemic diseases that occur in many jurisdictions of the world. They include botulism, equine coital exanthema (genital horse pox or equid herpesvirus type 3 (EHV-3)), horse mange (*Psoroptes equi*), equine viral arteritis virus and strangles (*Strep. equi*).

ANTHRAX

Anthrax, caused by the spore-forming bacterium *Bacillus anthracis*, occurs sporadically in Canada. Cases occur from Alberta through to western Ontario, with repeated outbreaks in the Mackenzie Bison Range in the Northwest Territories and in Wood Buffalo National Park in northern Alberta. Although all mammals are susceptible to anthrax, it is primarily a disease of herbivores. Cattle, sheep, goats and horses are highly susceptible. Horses have been reported with anthrax; in 2006 (four (4) in Saskatchewan and three (3) in Manitoba, one of which was a donkey); in 2005 (two (2) in Manitoba); and in 1999 (one (1) in Alberta).

BOTULISM

The weather during the 2008 haying season was very unpredictable for farmers. A number of horse owners purchased or produced round-bale silage. Unfortunately, a number of outbreaks of botulism in horses were traced to the feeding of round-bale silage without vaccination. While the quality of forage in round-bale silage can be very high, the presence of botulinum toxin is still unpredictable and, therefore, caution is needed when using silage for horses. Owners contemplating using silage should refer to the information sheet *Botulism in Horses and Haylage*, at www.gov.on.ca/OMAF/english/livestock/horses/facts/in_fo_botulism.htm, and talk to their veterinarian about vaccinating their horses for botulism.

CONTAGIOUS EQUINE METRITIS (CEM)

In Ontario, sixteen mares and one stallion were identified as being potentially infected with CEM as a result of insemination with potentially imported, infected semen in the 2008 breeding season. This is part of a large North-American-wide investigation. As a precaution, CFIA has quarantined animals on the farms, and these measures will remain in place until all potentially exposed mares and their foals have tested negative for CEM. Rounds of sampling are continuing and all test results to date have been negative. Some testing will not be completed until the pregnant mares have given birth.

Effective January 19, 2009, the CFIA implemented a requirement for additional certification for the import of live horses from the United States. In addition, as of January 29, 2009, new import requirements for horse germplasm (semen and embryos) were implemented.

EQUINE INFECTIOUS ANEMIA (EIA)

In Canada, horse owners **voluntarily** pay to have their horses tested when proof of negative status is needed for movement to shows and other horse events. Private veterinary practitioners collect samples and submit them to private laboratories accredited for EIA testing by CFIA. EIA-positive horses must be reported to the CFIA and disease control measures are implemented. Since 2006, the competitive ELISA has been used for surveillance testing rather than the agar gel immunodiffusion (AGID) or Coggins test.

From 1998 to 2008 inclusive, 1,728 positives samples were detected from 826,866 samples submitted. The focus of EIA infection in Canada is in the western provinces of Saskatchewan, Alberta, and British Columbia, where all but 31 cases occurred over the ten-year period. In the same period, only four (4) cases of EIA were found in 297,855 samples submitted from Ontario.

EQUINE VIRAL ARTERITIS (EVA)

EVA is occasionally diagnosed in Ontario. In 1999, an EVA-like syndrome including a skin rash, urticaria-like reaction of the limbs, trunk, brisket, inguinal area and scrotal area, or mammary glands, along with any of the following signs: nasal and ocular discharge, fever, petechiae, and oral lesions, was reported in horses in one (1) of nine (9) barns at an Ontario racetrack and in two (2) training facilities. One hundred percent of the standardbred horses that were reported to have been clinically sick and in barns affected by this EVA-like syndrome had titres greater than 1:4, while only 26% of the comparison group had an antibody titre greater than 1:4.

NEUROLOGICAL DISEASES (EEE, WNv, nEHV-1, and Rabies)

Summaries of neurological cases from all provinces were not available. The Ontario cases are presented in **Table 1**. In 2008, Quebec confirmed 19 cases of EEE in horses and, on one (1) farm, three (3) emu were confirmed to have died of EEE; a further 13 were suspected of dying of EEE.

Table 1. Surveillance in Ontario 2000 - 2008

Year	Eastern Equine Encephalitis (EEE)	West Nile Virus (WNv)	Rabies
2008	4 horses and 1 emu confirmed (other emu died on same farm)	2	2
2007	0	0	1 horse and 1 donkey
2006	0	3	0
2005	0	5	0
2004	4	9	2
2003	11 horses and 1 confirmed case in an emu	9 and 1 probable	1
2002	1	101 confirmed, 6 probable	1
2001	2		5
2000			3

In Ontario, WNv and EEE virus in horses are identified by IgM positive, IHC and/or PCR by the Animal Health Laboratory, University of Guelph. Eastern equine encephalitis virus (EEEV) rRT-PCR was adopted from the published procedure described by Lambert AJ *et al.* Some cases may not be recorded when samples are submitted to other laboratories.

Equid Herpesvirus Type 1, Neurologic Form

Since the outbreak of EHV-1 neurological form (nEHV-1) in a large group of horses in Findley, Ohio, in 2003, other outbreaks are being reported from across North America.

The neurological signs range from mild ataxia to complete paraplegia, often ending in death or euthanasia. It is recognized as a newly emerging mutant of the virus. In March 2008, an outbreak occurred in a boarding facility in Saskatchewan where 15 horses were infected. This is just one of the sporadic outbreaks occurring across the world equine community.

The development of a PCR test now allows for the identification of the nEHV-1 strain. This has and will provide laboratories and veterinarians with the tool to recognize the nEHV-1 strain more readily and more frequently. The increased detection may not mean an increased incidence of the disease but merely “the more you look, the more you find”. The Animal Health Laboratory, University of Guelph, has demonstrated nEHV-1 in three (3) horses since late 2007 through 2008.

Rabies

There were 53 cases of rabies in horses in the 10-year period 1998-2008. Manitoba, Saskatchewan and Ontario had 19, 16 and 16 cases each respectively.

The “Arctic Fox Strain” of rabies is now referred to as “Ontario Fox Strain” or “Eastern Fox Variant.” The Ontario Ministry of Natural Resources operates a wildlife oral rabies vaccination program. It has greatly reduced the prevalence of rabies in Ontario and virtually eliminated it in foxes. Only one (1) laboratory-confirmed case in a fox has been reported to date (July 16, 2009) this year. However, rabies still occurs in skunks and spill-over species from skunks, i.e., three (3) sheep this year. A new Ontario-developed, oral, rabies vaccine (ONRAB) appears to successfully vaccinate skunks, raccoons and foxes, and should decrease the prevalence of rabies in wildlife in Ontario even further.

The raccoon rabies strain, which entered Ontario at a small focus adjacent to New York State in July, 1999, appears to have been eliminated. The bat strain of rabies is endemic in Ontario. No vaccine development is planned.

From January 2000 to March 2007 inclusive, three humans died from rabies in Canada and a fourth died as a result of being mauled by a rabid horse.

STRANGLES

Strangles, caused by the bacterium, *Streptococcus equi*, is a highly contagious and serious infection of horses and other equids. It is endemic in most horse populations.

There are no requirements for horse owners to report or quarantine horses/barns, except in the case of racing facilities. Racetrack officials may restrict horse movement when strangles is diagnosed or suspected. The organism can be isolated from the nose or lymph nodes of affected animals and can be found in the guttural pouch of carrier animals. For more information on strangles and biosecurity to prevent the introduction of strangles, refer to www.ontario.ca/livestock and view the *Health Management* section under *Horses*.

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