

CFIA's Notice to Equine Practitioners and Horse Owners

Re: Implementation of the Equine Infectious Anaemia—Enzyme Linked Immunosorbent Assay (EIA-ELISA) for EIA diagnostic testing performed by approved laboratories

EIA is a retroviral disease affecting all *equidae* including horses, mules and donkeys. Many industrialized countries have a regulatory control program and most countries require imported horses to be certified as being free of EIA.

In Canada, the disease is reportable under the CFIA's *Health of Animals Regulations*. Canadian horse owners are encouraged to test horses for EIA before attending horse race tracks, shows, fairs, sales, breeding farms, and other venues where horses are assembled.

As of March 31, 2006, EIA approved laboratories are no longer testing equines using agar-gel immunodiffusion (AGID) test, also known as the Coggins test. The only test in use in EIA approved laboratories is the ELISA test.

A number of factors influenced this change. Over the last several years, the EIA-ELISA has been used in various countries. The ELISA test was approved by the United States Department of Agriculture/Animal and Plant Health Inspection Services (USDA/APHIS) in the 1990s as an equivalent test method for the diagnosis of EIA. In 2002, the Canadian Food Inspection Agency (CFIA) accepted it as a basis for certifying United States horses entering Canada.

The rapidity of the ELISA test in comparison with the Coggins test was an important factor for the horse industry. Test results are available within a few hours as opposed to the 24 to 48 hour time frame required for the AGID test. EIA approved laboratories also favoured the ELISA test because of its efficient and accurate testing of large quantities of serum samples within a relatively short time. It provides also an objective interpretation by spectrophotometry. Finally, the CFIA needed to have more than one test available for the diagnosis of EIA in Canada, in the event that the production of AGID kits by the American supplier ceased.

Validation data—completed by the CFIA's Retrovirology Centre of Expertise (RCE) between 2001 and 2004—indicated excellent performance of the ELISA tests available commercially in comparison with the reference AGID test used in Canada.

(Ref. Comparison of commercial enzyme-linked immunosorbent assays and agar-gel immunodiffusion tests for the serodiagnosis of equine infectious anemia, Paré J., Simard C., 2004. Can. J.Vet. Res., 68 (4) :254-258).

Based on all of the above, the CFIA has decided to replace the EIA-AGID (Coggins) test with the EIA-ELISA for diagnostic testing conducted by all CFIA's EIA approved laboratories.

Under the current testing protocol, when an EIA approved laboratory reports a negative EIA-ELISA test result, the horse is deemed negative and no further testing is required. However, when an approved laboratory obtains a positive or atypical EIA-ELISA result, the approved laboratory reports this finding as ELISA inconclusive - to be confirmed by RCE and the serum sample is forwarded to the CFIA's RCE located in St-Hyacinthe, Quebec, where it is retested first by EIA-ELISA and, if positive, the results are confirmed by EIA-AGID tests. If the confirmatory testing is AGID positive or atypical, the horse's EIA status is reported accordingly and the CFIA applies control measures as per the current EIA policy. In situations in which test results are reported as ELISA negative or ELISA positive /AGID negative, the animal is considered EIA negative and no further testing or field action is required.

Both AGID and ELISA are simple, accurate, reliable tests for the demonstration of EIA virus infection. However, although the ELISA detects antibodies somewhat earlier and at lower concentrations than the AGID test, some false-positive results have been noted. Therefore, according to the *World Organisation for Animal Health (OIE)*, a positive test result by ELISA requires confirmatory retesting using AGID. Horse owners and private veterinary practitioners should be aware of this requirement and allow the time required for EIA testing, so that in the event of a positive ELISA result, there is a sufficient margin allowed for confirmatory testing by AGID.

The validity of both tests for export certification to the United States and Mexico remains unchanged and is 180 and 30 days respectively.

For more information on the disease and/or the CFIA's EIA control program, please refer to the following Web site:
<http://www.inspection.gc.ca/english/anima/heasan/disemala/equianem/equianeme.shtm>
or contact the CFIA's local offices.

Any concerns or questions regarding this change of policy should be directed to Dr. Les Kumor at: lkumor@inspection.gc.ca or Dr. Carole Simard at: Simardc@inspection.gc.ca