

## **Live Vaccines Appear Effective Against Equine Herpes**

**After a deadly outbreak of equine herpes at Churchill Downs, Cornell researcher Klaus Osterrieder announces early finding of effective prevention with modified live vaccines.**

May 31, 2005 -- Following the recent deadly outbreak of equine herpes virus at Churchill Downs, home of the Kentucky Derby, a Cornell University virologist says his preliminary research indicates that vaccines containing weakened live viruses, called modified live vaccines (MLV), appear to be more effective in preventing horse herpes than other more widely used vaccines.

"It's important that people know that the MLV has been in use for decades, has proven to be reasonably safe, and in--my opinion--it should be the vaccine of choice, at least in non-pregnant animals," said Klaus Osterrieder, associate professor of virology in the College of Veterinary Medicine at Cornell. The college is home to the Animal Health Diagnostic Center, the official regulatory diagnostic laboratory for equine diseases in New York state.

On May 18, two horses stabled at Churchill Downs showed symptoms of the neurological form of equine herpes and were euthanized, leading to concern at the May 22 Preakness Stakes at Pimlico Race Course near Baltimore. In anticipation of the June 11, \$1 million Belmont Stakes, the third leg of the Triple Crown, in Belmont, N.Y., the New York Racing Association (NYRA) on May 18 issued travel restrictions for all horses that might have been exposed to equine herpes virus, with special attention paid to those stabled at Churchill Downs since May 1.

In some 90 percent of infected horses, equine herpes virus type 1 (EHV-1) leads to a mild upper respiratory infection with fever, nasal discharge and fatigue for a day or two. The virus can also cause pregnant mares to abort, and in its severest form it can lead to neurological disorders, loss of coordination and even death. The virus is spread mainly by intimate contact between horses. Once infected, a horse carries the virus for the rest of its life in a "latent" (dormant) state. The same symptoms from the initial infection can be reactivated by stress later in life.

Osterrieder will present his new findings on vaccine effectiveness, involving a limited study of 15 horses, at a luncheon meeting with other veterinarians and specialists at the annual American College of Veterinary Internal Medicine Forum, June 2, in Baltimore. The luncheon will be paid for by Pfizer Inc., which provided Osterrieder with a \$50,000 unrestricted grant to conduct research of his choosing. Pfizer is the only company that makes MLVs for equine herpes virus (RHINOMUNE®).

Osterrieder's preliminary study compared the effectiveness of MLV vaccines to another more widely used vaccine for equine herpes. Owners and veterinarians have been wary of live vaccines because of past incidences in which a previous MLV that was incompletely weakened caused neurological disease symptoms after it was administered. The more widely used type of vaccine, called an inactivated vaccine, employs a killed virus to activate the horse's immune response.

Osterrieder vaccinated five horses with an MLV and five with an inactivated virus; five received no vaccination. None of the 15 horses was pregnant. The horses were then exposed to the herpes virus.

The study found that the horses with MLV vaccinations consistently had lower fevers, no neurological disorders and less virus in nasal fluids. One horse vaccinated with the inactivated virus and one from the control group showed mild neurological symptoms. All the horses, however, have fully recovered.

Osterrieder decided to announce the results of the study prior to peer-reviewed publication because of the recent virus outbreaks. Following the outbreak at Churchill Downs, three barns and some 100 horses were quarantined. The quarantine was fully lifted May 24, when no other horses showed signs of infection.

Eight horses housed at Churchill Downs during the outbreak were cleared to run in the Preakness. However, two horses scheduled in supporting races at the Pimlico Race Course were not allowed to race due to the Churchill Downs quarantine.

Because of the outbreak, the NYRA isn't taking any chances. "The New York State Racing Association has put in a directive requiring veterinarians to show that horses have had no fevers for the last three weeks," said Ed Dubovi, associate professor of virology and director of the virology diagnostic laboratory at the Animal Health Diagnostic Center at Cornell. He says that Cornell only administers testing and does not set the rules for monitoring infections.

Dubovi said that in the last four to five years, there have been more reports of the severe neurological disorder associated with equine herpes. "It appears we are seeing it with more frequency and in a larger number of horses," he said.

Previous studies on horses have found the inactivated vaccines are not very effective in lowering equine virus levels in the blood or preventing abortions caused by the virus. "Based on recent reports and our preliminary findings, many inactivated vaccines, especially when given too often, don't appear to do much good," said Osterrieder.

In addition to Pfizer, the Morris Animal Foundation has given Osterrieder a two-year grant of \$110,783, and the Harry M. Zweig Memorial Fund for Equine Research (which is supported by New York state racing revenues) has given him two grants: one for \$131,414 and another for \$30,000. Cornell has made a substantial investment in his laboratory set-up, allowing this and other research to be conducted.