

Equine Flu

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The outbreak of Equine Influenza (EI) in the Sydney area in mid August, initially in the 300 horses stabled at Centennial Park Equestrian Centre (CPEC) near Randwick in Sydney, highlights the importance of strict quarantine measures on importing and monitoring horses arriving from overseas. The infection spread over a 2 week period from the nucleus of infected horses at the CPEC complex, on horses and handlers at an equestrian event at Maitland in the lower Hunter region and a week later at another equestrian event at Narrabri in the north of the State. It was then carried on some of these horses that were transported to an equestrian event in Warwick in South East Queensland and individual horses were disseminated to isolated areas throughout NSW.

At the time of writing (mid Sept 2007), there are now a total of 8353 infected horses on 841 properties, 357 regarded as dangerous contact properties with 2731 horses that are likely to spread the disease to surrounding high horse population areas as well as 257 suspect properties with 1809 horses – all within a period of 3-4 weeks. There is also concern by the DPI in NSW that many horse owners within the infected areas are not reporting the disease as it is present in neighbouring horses. Certainly, within the Hunter Valley region, property to property spread within the Thoroughbred studs is ongoing. As of mid September, negotiations are being held to declare the Hunter Valley Thoroughbred breeding area as a ‘purple zone’, where infection is established but contained within the area at present. Although the risk of contagion continues, by confining horse movements strictly within the boundaries of the zone, it is hoped, it is possible, that mares can be moved within the zone to be bred.

At the Randwick racecourse stables, all the 600 odd horses are infected, which was considered inevitable because of its close proximity to the CPEC, being only 1-2 kms away. Strict horse control of horse movements in the racing precinct did slow the spread of infection for 10 -12 days after the original infection was discovered at the CPEC. The Randwick race track is closed for training and all horses are confined to their stables and only allowed to be walked within each stable complex while the extent of the disease is monitored by veterinarians and the DPI officials. The horses at Randwick will not be allowed to return to training for at least 30 days after the last horse in each training stable was infected and cleared of the symptoms. Horses do gain some immunity against the disease, although this immunity is only short term in horses after being exposed and have recovered from the virus. A similar pattern has occurred at the Hawkesbury training area with horses confined to their stable precincts and the training track is closed.

Why is EI such a Problem?

Equine Influenza is a very contagious virus that is spread by horse to horse contact, on infected nasal discharges on tack, feed and bedding and in the manure of infected horses - all of which can be spread by handlers as they feed and tend to the infected horses. Equine dentists, farriers and veterinarians have a high risk of transferring the disease if quarantine measures are not properly adhered to during their daily work. Because Australia has what is termed a 'naïve' horse population because the disease has not been established previously and horses do not have any established immunity to the virus, the disease is able to spread very quickly. The other problem is that the early symptoms of EI, characterised by a high temperature, loss of appetite, depression and a runny nose are similar to the already established and common Equine Herpes Virus or 'Stable Virus'. However, the temperature variations with EI and the copious fluid nasal discharge, with 'deep' and forced coughing, is only characteristic of EI, as well as its high transfer rate between horses. These are some of the reasons for the disease not being recognised in the CPEC horses initially where the early symptoms were diagnosed as being caused by EHV-1, or the common 'Stable Virus', which is endemic in Australasia.

Such is the risk of rapid and overt spread of the virus, that in NSW, farriers working within the infected areas are only permitted to visit one stable or group of horses per day. Veterinarians and farriers are obliged to change their clothes, wash their hands and hair, disinfect their equipment and wheels of their vehicles prior to visiting a property and after leaving an infected or high risk neighbouring property.

Observations of the capacity for rapid spread of EI in South Africa about a decade ago, found that the virus was capable of spreading in adjoining horse populations at a rate of 6 Km per day, and in one case, probable airborne spread of the virus infected isolated groups of horses 8 Km from the area of the outbreak.

What about the 'Stable Virus'

Compared to the Equine Herpes Virus (EHV-1, EHV- 4) or "Stable Virus" that is wide-spread in Australia, and causes upper and lower respiratory tract infection, EI is even more contagious. Although EI is endemic in the USA, and all horses are routinely vaccinated to maintain their immunity against EI, the disease still causes loss of foals on breeding farms and results in prolonged downtime from training in infected horses. On the other hand, the EHV-1 (and EHV- 4) viruses are not currently established in the USA. An outbreak of Equine Herpes Respiratory Virus (EHV-1) in the USA about 3 months ago resulted in large numbers of infected horses and a number of deaths due to complications of secondary respiratory infection and pneumonia.

EI to us in Australia is a much more devastating disease that spreads rapidly and can cause fatalities in young foals, debilitated horses and aged horses. Although at the present time, only two horses have died as a result of EI infection, one an aged horse and the other a racehorse where the infection progressed to serious form of pneumonia, the disease has been a relatively mild form, but very virulent in its rate of spread. Up to 10% of young foals less than one month of age are likely to succumb to EI infection and the concurrent pneumonia that often develops in animals with lower natural immunity or

inadequate colostrum immunity passed onto young foals through the milk. Mares in late pregnancy are at risk of aborting, with massive viral contamination onto pastures and airborne spread under ideal moist, warm conditions.

However, the virus is considered to be 'fragile' as it can only remain infective for around 24 hours after being excreted in nasal discharges or droppings from infected horses, and disinfection with virus killing chemicals is relatively quick and efficient. The risk of spreading 'fresh', active virus on discharges into the environment, drains and by human and equipment transfer, as well as airborne dissemination, makes the disease highly contagious, but easier to limit its spread by strict quarantine and isolation practices.

The other major complication is that even after becoming infected, the immune response against EI is not long lasting, often being limited to a maximum of 30 days, after which horses can become infected again by 'carriers' of the virus that are shedding live virus particles into the air and environment.

Although the immune response to the 'Stable Virus' is also not long lasting (only 30 days as well) and there is a vaccination now available to protect horses against EHV-1, routine contact with infected or 'carrier' horses can maintain an adequate immune response in most horses and stable groups.

Why Not Vaccinate?

Although the Victorian DPI and veterinarians are considering vaccinating horses to help provide immunity against infection, the current US vaccine against EI is not long lasting and may not be effective against the possible variation in the strain of EI passed by the Japanese horses held at the Eastern Creek Quarantine Station in Sydney.

Vaccination has other complications as well. It is relatively expensive at \$100 per horse and horses would need to be vaccinated every 6 months. Horse owners may need to carry current vaccination certificates to horse events and shows to provide evidence of vaccination, which would complicate the organisation and running of horse events, pony clubs and other competitions, stud movements and even transport. Vaccination would also suppress the symptoms of the disease in vaccinated horses, with the risk of EI spreading to non-vaccinated retired horses, wild horses as well as donkeys, that would act as a 'contamination and re-infection' risk for all horses in the years to come.

At the present time there are discussions under way to allow blood serum to be taken from horses that have recovered from the disease, and therefore have circulating antibodies that can be concentrated and then injected under strict veterinary control into horses that are at a high risk of being seriously affected by the disease. These include heavily pregnant mares at risk of aborting, young foals and sick horses in order to transfer antibodies against the disease to give them immune protection for up to 30 days.

Specialised nutritional supplements, containing well known immune active nutrients such as organic selenium and zinc, Vitamin A, Vitamin E and Vitamin C, may help provide support to the immune system of infected or sick horses, are also available.

The rapid and effective response by DPI and other field authorities, as well as the absolutely vital dissemination of information and control guidelines by the Australian

Horse Industry Council, the Equine Veterinary Association and the daily DPI Bio-Security Bulletins in Qld, NSW and Victoria, have been vital in keeping horse owners aware of the disease and assisting in maintaining vigilance within both infected zones and in neighbouring higher risk areas. At the time of writing, the spread to interstate populations has been averted as a result of strict border control, the initial Australian wide banning of horse shows and racing and prohibition of horse transport. The strict “lock-down” of horses, border security and movement of horse service providers and handlers Australia wide has helped contain the early spread of the disease. The initial ban on racing, followed by a limitation of racing, cancellation of horse events and competition at the Adelaide and Melbourne Royal Shows and the Hygain Masters, as well as the postponement of Equitana for 2007, has all been carefully taken to prevent the spread of the virus into the wider horse population.

As of mid September 2007, only 5% of the estimated 170,000 horses in NSW have tested positive to EI. The large majority of horses are located in areas of the state not currently affected by the EI outbreak.

The Horse Industry in General

In a recent press release, the President of the Australian Horse Riding Centres, Angus Malcolm, warned that riding schools were facing the rapid spread of the virus with “absolute dread”. Equestrian centres in restricted areas being ordered to close and lay off staff to help control the spread of the virus. All of the NSW based equine dentists are restricted in their work and farriers are also limited to visiting one horse property per day, as explained above.

In NSW and Queensland, horse feed suppliers are also severely limited in their businesses, as most horses in restricted areas are still in ‘lock-down’ and only their horses are being fed on maintenance rations. Sale of horse equipment, including horse shoes, show preparation products, tack and supplements have been severely restricted. Horse owners are not visiting their feed stores or saddlery suppliers for fear of picking up the virus from other clients that have contaminated clothing, boots or equipment. Horse rug repairs are at a standstill. Some saddleries in NSW and Qld have footbaths and signs warning customers that they must wash their hands in dishes of disinfectant provided on tables outside the store and take off their boots before entering as a measure to try to limit the spread of the disease and reduce the chance that they will be implicated as a source of viral spread. It’s not paranoia but just good preventative management. But still, other horse owners have been caught transporting horses from infected zones without regard to the high risk of contagion.

Horse transport operators in NSW and QLD are out of work, with the largest racehorse and bloodstock transport company in Brisbane, standing down 50 drivers and staff early in September. The sale of horses has also ceased with many owners being unable to allow interested purchases to inspect or ride horses for sale.

Quarantined Areas

At the present time, a number of horses and handlers are in 'lock-down' at CPEC, Randwick racecourse, Moombi, Parkes and Warwick. The Morgan Town centre at Warwick, Qld has, as of mid September, 250 horses locked down in quarantine in 215 day yards, supported by 150-180 people, living and operating in an extremely confined and 'artificial' environment. A whole support industry has been set up, including dining rooms, conference rooms, a DPI office and even a school for the children of horse owners and staff – all within the quarantine area. Farriers and vets are located full time on the site and 25 people each day are busy taking temperatures, injecting antibiotics and 50 people are involved in cleaning yards, feeding and keeping the horses in otherwise good health as they recover. This quarantine set up is likely to continue for another 15-30 days. The Federal and State Governments are to be commended for providing funds to support people who rely on the horse industry for their livelihood, but some consider the funds allocated are not sufficient to meet the hardship and loss of income in service providers.

We don't want EI to spread – everyone will be affected. We must all continue to be vigilant.