

## **Vaccination of Horses**

Vaccination is one of the best ways we have of preventing disease in animals. In the horse we have a number of vaccines available but the most commonly used are those against Influenza (Flu) and Tetanus. Other diseases that have vaccines licensed for use in the horse are Herpes Virus, Rota Virus, Equine Viral Arteritis.

### **Why Vaccinate a horse?**

With Tetanus the answer is simple, because the disease will kill your horse, the vaccine is very efficient, cheap and because the Tetanus Bacterium (*Clostridium tetani*) is present in the soil and can easily get into wounds etc. horses are at high risk of getting the infection. Therefore, all horses should be vaccinated for tetanus and failure to do so could quite easily be argued to be neglect of the horse.

Equine Influenza – why do we vaccinate for this disease, The outbreak in Australia in 2007 showed nicely what happens if you don't have a national vaccination programme. The Australian Racing and Equestrian industry generally was shut down for much of their spring, summer and autumn. Their stud season was virtually non-existent. The Australian approach was not to use vaccination but to maintain a national disease free status much as we do in the UK for things like foot and mouth disease. We all know how disruptive things then become when we then get the disease in the country. Equine Influenza rarely kills the horse, but it does cause a significant disease that lasts for several weeks in affected horses and spreads rapidly among groups of horses. Vaccination is a very effective way of preventing both the disease in horses and reducing the potential for the virus to spread between horses.

Another factor that should be borne in mind, is that the Equine Influenza Virus is not a static stable virus, it is constantly changing and adapting. This means that the vaccines we use to protect against it have to be changed in order to maintain adequate levels of protection. The flu virus can only change/modify when it infects a horse, therefore, the idea is that by having as many horses in the country vaccinated against flu, ( ideally every horse would be vaccinated, but we have to be realistic) the potential pool of horses through which the flu virus can circulate is small. This means that then chances for the flu virus to mutate and change are less.

If the flu virus changes enough it may be able to evade the protection offered by the vaccination. Although this is a bad thing, there is often still some benefit to the vaccinated horses in that they are usually less severely affected and shed less virus than unvaccinated horses so they contribute less to the spread of any further infection.

So, there are several reasons why as many horses as possible should be vaccinated against equine flu, even if they don't travel away from home, if they ever come into any contact with other horses, they really should be vaccinated for their own benefit as much as for the benefit of the national horse herd!

How do we vaccinate against Influenza and Tetanus?

These vaccinations often come as a combined product. Both diseases require a starter course of two injections, given approx 4 – 6 weeks apart. About 10-14 days after the second injection, adequate levels of protective antibody exist.

For the tetanus side of things, the requirement for boosters depends on the product being used. The vaccine currently being used in our practice only requires a booster every three years so once the first two injections of the starter course have been given, then the horse is protected for up to three years.

The influenza vaccines require a booster approximately 6 months after the second of the two starter course injections. Thereafter, boosters are usually given every year. Depending on the regulatory authority under which your horse is competing, there will be strict rules about when the vaccine doses are administered. The two main sets of rules are those issued by the Jockey Club and those issued by the FEI.

The Jockey Club rules are as follows:

1<sup>st</sup> Vaccination followed by a 2<sup>nd</sup> vaccination between 21 and 92 days after the first vaccination..

A third vaccination should be given between 150 and 215 days after the second vaccination.

After the third vaccination, subsequent boosters should be given within one calendar year of the previous vaccination. There is no grace period, if you miss the date even by one day, the whole course needs to be started again from scratch. (note the regulations only apply to the Influenza so if adequate tetanus cover exists this does not have to be re-started). If the previous vaccination was on 24<sup>th</sup> June, the next booster can be given on any day up to and including the 24<sup>th</sup> June the following year but the 25<sup>th</sup> June would necessitate re-starting the course.

The FEI rules covering horses that compete in international competitions ( that does not mean they have to go abroad but in competitions that are open to overseas competitors) are that after the first two starter vaccinations, there should be boosters given every 6 months. With these regulations there is a grace period of 21 days to allow for competition restrictions, therefore, a booster must be given no more that 6 months and 21 days after the previous vaccination.

If your horse has been vaccinated under the Jockey Club rules and then needs to compete under FEI rules then provided the vaccinations are up to date, the only requirement will be that the horse has had a booster within 6 months prior to the first FEI competition and thereafter it complies to the 6 monthly booster requirements.

Under both sets of regulation, horses are not permitted to compete within 7 days after any vaccination.

### **Herpes Vaccinations**

There are two regimes for Herpes Vaccination, depending on which form of the disease that you are trying to protect against. For the respiratory disease, the vaccination regime is similar to the FEI influenza regime, ie. a starter course of two vaccinations 4 -6 weeks apart followed by boosters every six months, thereafter. Because there is no regulatory authority governing the administration of Herpes vaccinations, there are no strict dates to adhere to, however, if too long a period occurs between boosters it will be advisable to re-start the course to ensure adequate levels of protection.

For protection against abortion in pregnant mares, three vaccinations are given in the 5<sup>th</sup>, 7<sup>th</sup> and 9<sup>th</sup> month of pregnancy.

### **Rotavirus Vaccination**

Rotavirus is a very common cause of diarrhoea in the foal, as well as a primary cause of diarrhoea, the disturbance to the gut can lead to secondary bacterial diarrhoeas that are more serious to the foal's well being.

Vaccination of the mare is performed by a course of three vaccinations in the 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> month of pregnancy. The antibodies are then produced in the colostrum so to get the protection the foal must suck and absorb sufficient colostrum. An IgG test taken from the foal at or after 24hours old will confirm that this has occurred.

### **EVA Vaccination.**

This is seldom performed these days, stallions are tested negative at the start of each breeding season and mares going to stud will also require a negative blood test, too. Only Stallions were vaccinated in the past since only they have the potential to become permanent shedders of the virus in their semen after infection.

### **Strangles Vaccination**

The Strangles vaccination that was produced by Intervet, had problems with manufacture and was not a particularly good vaccine, it required too frequent vaccinations with boosters every 3 months and the levels of protection afforded by vaccination were not great. Hopefully a more efficacious vaccine will be produced in the near future.

### **Future Vaccines**

The holy Grail at the moment would be a vaccine against grass sickness. The current scientific theory is that a toxin from *Clostridium botulinum* may be responsible for Grass Sickness. Since this toxin is reasonably similar to tetanus toxin ( Produced by *Clostridium tetani*) and we have great vaccines available for that, the hope is that a good, relatively cheap and effective vaccine can be produced that will protect against grass sickness. Grass sickness is a terrible disease that results from poisoning of the involuntary nerves of the digestive tract. It is fatal in the vast majority of cases and predominantly affects younger horses.