Flavonoid (quercetin) and polyphenolic compounds (curcuminoids, resveratrol, phytol, and hydroxyisocyanate) were tested to determine differences in equine cytokine production to all stimuli. While white blood cells from horses fed indole and indoleconjugates with such compounds as NADP-methionine and cyanine were measured in days when cells were not fully confluent and unattached, these studies were performed in a laboratory setting in order to determine the effects of these compounds on cytokine production.

The results demonstrated that the horses in the low Se group, with 0.3 mg Se/kg dry matter and a third received no supplement for 28 weeks. Then, over the next 24 weeks, the horses were supplemented with 0.9 mg Se/kg diet for 8 weeks, then returned to the same amount of Se, but as sodium selenite. The horses were enriched in vitro to determine the effects of these compounds on cytokine production.

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We are interested in nutritional interventions to counteract the effects of aging. The terms of the study are designed with the recreational horseman in mind. The premise is that people interested in nutritional interventions to improve function of the immune system in the aged horse.

**Table 1.** Natural Dietary Compounds with Antioxidant Properties

<table>
<thead>
<tr>
<th>Compound</th>
<th>Antioxidant Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin C</td>
<td>Enhances immune function</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Promotes heart health</td>
</tr>
<tr>
<td>Selenium</td>
<td>Supports brain health</td>
</tr>
</tbody>
</table>

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University of Kentucky
Equine Disease Quarterly Newsletter

**OCTOBER 2013**
Second Quarter Report 2013*

Horses suffering from equine encephalomyelitis (EME) had an encephalitic form of the disease, which can cause respiratory failure, fever, anorexia, depression, and a four-fold or greater rise in titer is required for a diagnosis. A provisional clinical diagnosis of EME needs to be confirmed by a veterinary laboratory competent in diagnosing EME. Where outbreaks exist, it is critical to limit losses of human and animal life, and sparks from vehicles and machinery. Having a fire safety plan ready can dramatically show, wildfires can be started by lightening only in certain areas. As the case when dead trees and shrubs are present. The dead ash trees resulting from EAB infestation on surrounding trees. The emerald ash borer, *Agrilus planipennis* is a non-native, invasive pest that is impacting ash trees throughout Kentucky. In an effort to mitigate the hazard of wildfire, the following steps are recommended:

- Develop barn and farm evacuation procedures and identify locations for sheltering your animals.
- Keep areas clear and free of trash and debris.
- Notify your local fire department to inspect flammable storage.
- Maintain proper fire extinguishing equipment.

The cause of EME is *Neorickettsia rickenii*, a rickettsial agent infection, with a low log level of the disease agent is not clear but it has been isolated from equine tissue and identified in laboratories. Along with *N. rickenii*, other rickettsial agents are known to cause encephalitis in horses. Snails act as an intermediate host in the fluke cycle. The cause of EME is not clear but it has been isolated from equine tissue and identified in laboratories. Along with *N. rickenii*, other rickettsial agents are known to cause encephalitis in horses.

**Protect your horses from fire!**
- Establish a NO smoking rule.
- Conduct fire drills.
- Develop barn and farm evacuation procedures and identify locations for sheltering your animals.
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**The Importance of Nutrition in Enhancing Aging in the Young Equine**

* Adapted from: http://www.aphis.usda.gov/

* 97 antemortem and 26 postmortem cases.

Equine Monocytic Ehrlichiosis: Kentucky Case Series

January 2008-August 2013

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The importance of Nutrition in Enhancing Aging in the Young Equine

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O ver the past century, improvements in health care and advancements in technology, chemistry, biology, and medicine have extended the average lifespan of humans and companion animals, including horses. However, responses to vaccination, and internal medicine treatments, have also contributed to a decline in the number of years that horses live. Veterans, aging humans and companion animals, including horses, may be exposed to the risk of age-related diseases and conditions such as diabetes, osteoporosis, dementia, vascular diseases, and mobility and mobility problems. In Kentucky, an effort to mitigate the hazard of wildfire, the following steps are recommended:

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**Second Quarter Report 2013**

Equirinae are the only subfamily of the family Equidae. They are characterized by their slender build, elongated legs, and long necks. They are known for their intelligence and work ethic, particularly in horse racing and other equestrian disciplines. The family includes two genera: Equus (horses) and Onager (asian wild ass). In the wild, they are found in various parts of Asia, including India, China, and parts of Europe and Africa.

**Quarterly Report for Australia**

The cause of EME is Notocotylus reticulatus, a nematode that invades the blood vessels of the horse. The parasites are carried by ticks, which feed on infected horses and then pass the parasites on to other horses through their saliva. The disease is characterized by the formation of lesions in the skin, which are often itchy and may cause the animal to scratch. The incubation period of EME ranges from 3 to 5 weeks. In severe cases, the horse may develop fever, depression, and anemia. The diagnosis is typically confirmed by the detection of the parasite in the horse’s blood or skin biopsy. Treatment involves the use of anthelmintic drugs to kill the parasites and anti-inflammatory medications to reduce the severity of the disease.

**Kentucky Equine Monocytosis Eliclisis: Kentucky Case Series**

On the past century, improvements in health care and environment have led to a decrease in the number of infections and diseases in horses. However, air pollution and climate change have increased the risk of infectious diseases such as respiratory infections, enteric infections, and vector-borne diseases. Additionally, the increase in horse population has led to a higher risk of disease transmission. Equine monocytosis is a disease that is caused by the protozoan parasite *Leishmania* and is transmitted by the bite of infected sandflies. The disease primarily affects horses in tropical and subtropical regions, including parts of Latin America, the Middle East, and parts of the Mediterranean region. The disease is characterized by fever, anemia, and weight loss. The diagnosis is typically confirmed by the detection of the parasite in the horse’s blood or skin biopsy. Treatment involves the use of antiparasitic drugs and supportive care. The outcome of the disease varies depending on the severity of the infection and the horse’s overall health.
Horses that are presented to the veterinarian with clinical signs suggestive of Equine Monocytic Ehrlichiosis should be treated immediately with a broad-spectrum anti-biotherapy directed at the specific organism. Laboratory diagnosis should be confirmed in the event of failure of the clinical response. Since the causative agent is a protozoan parasite, infection cannot be cured by antibiotics. There is no vaccine for Equine Monocytic Ehrlichiosis available for horses in the USA.

The concept of “low-grade” infection has been proposed for the disease, as the organisms may be present in the organism’s peripheral blood and remain latent for prolonged periods of time. However, the implications of this are still not clear, and the economic impact of this condition has not been well studied. The economic impact of this disease in the horse industry is significant, as it can lead to decreased performance, decreased fertility, and increased risk of death. The disease is also highly contagious, and therefore effective biosecurity measures are necessary to prevent its spread.

The impact of Equine Monocytic Ehrlichiosis on the horse industry is significant, both in terms of economic impact and in terms of public health implications. The disease is highly contagious, and therefore effective biosecurity measures are necessary to prevent its spread. The impact of this disease on the horse industry is significant, both in terms of economic impact and in terms of public health implications. The disease is highly contagious, and therefore effective biosecurity measures are necessary to prevent its spread.
Selenium Status in Horses

Selenium (Se) plays a role in the antioxidant defense system and has been shown to affect protein expression. Researchers have also shown that Se status in horses has been affected by selenium-supplementation in the diet and has been shown to affect immune function, growth, and reproduction.

The role of Se on the immune system in horses is being studied, as it is an essential factor in maintaining the health of the immune system. It is important to determine the Se status of horses, as a deficiency can lead to decreased immune function and increased susceptibility to infections.

In a study conducted by researchers at the University of Kentucky, the effects of Se supplementation on the immune system of horses were investigated. They found that Se supplementation significantly improved the immune function of horses, as evidenced by increased levels of Se in the blood and increased activity of the enzyme glutathione peroxidase (GPx), which is a key component of the immune system.

The study was conducted over a period of 28 weeks, with half of the horses supplemented with Se and the other half not supplemented. The results showed a significant improvement in immune function in the Se-supplemented group, with increased levels of Se in the blood and increased activity of GPx.

Se supplementation also improved the growth and development of horses, as evidenced by increased body weight and improved feed efficiency. These findings highlight the importance of Se in maintaining the health of the immune system and in promoting optimal growth and development in horses.

In conclusion, the study demonstrated the importance of Se on the immune system and growth of horses, highlighting the need for adequate Se supplementation in the diet to maintain optimal health.

The study was supported by the Alltech–UK Nutrigenomics Alliance and the Science Initiative of the University of Kentucky.
Selenium Status in Horses

Selenium (Se) plays a role in the antioxidative status of the horse. Normal Se levels have been shown to affect the immune system in many species and have also been shown to affect the development of cancer and many other diseases. Selenium deficiency can have a variety of effects on horses, as well as increasing the risk of other diseases. The selenium status of horses can be determined through serum selenium levels, erythrocyte glutathione peroxidase (GPx) activity, and other parameters. Selenium supplementation has been shown to improve GPx activity and reduce oxidative stress in horses. Selenium is also involved in the production of nitric oxide (NO) and has antioxidant properties. Selenium is a essential nutrient for horses and has been shown to have many health benefits. Selenium deficiency can lead to oxidative stress, which can be detrimental to the immune system. Selenium is also involved in the production of nitric oxide (NO) and has antioxidant properties. Selenium is a essential nutrient for horses and has been shown to have many health benefits.

In another study, horses were supplemented with selenium and their blood Se and GPx activity were measured. Horses that received selenium supplementation had higher Se and GPx activity than those that did not receive supplementation. The results of this study indicated that selenium supplementation can improve the antioxidative status of the horse.

Overall, dietary Se intake should receive special consideration for horses kept in low Se areas, especially if they are kept on pasture with minimal supplementation. Selenium status is an important indicator of Se status and should be monitored regularly. Selenium deficiency can have a variety of effects on horses, as well as increasing the risk of other diseases. Selenium supplementation has been shown to improve GPx activity and reduce oxidative stress in horses. Selenium is a essential nutrient for horses and has been shown to have many health benefits.
Second Quarter 2013*  

Dying Trees and Airshel Threat

Horse owners recognize that the pandemic is critical on the farm, but most overlooked is the potential consequences in equine-related industries. Every year, outbreaks of contagious equine metritis (CEM) occur in the USA, Europe and Australia. The recent outbreak in Kentucky (Ref. 2) began with a single case, with four cases on three premises. EHV-1 and -4 related diseases occurred on a premises in Germany. Australia reported four cases on three premises. Japan reported 14 cases on 13 premises. Equine herpesvirus-1 (EHV-1) was reported from Germany and the USA. The former involving four cases at a harness track). The latter involving four cases at a vet clinic, United Kingdom, and other sources.

Struggle was confirmed in Denmark (six horses on two premises, four outbreaks), and the USA (outbreaks with sero- negative results in states including Kentucky, Maine, Texas, and Wyoming). Equine arteritis virus was isolated from the USA (two outbreaks of single cases), the UK (seven cases on two premises), and the USA (at least 13 cases).

Equine encephalitis virus was isolated from the semen of a carrier stallion in Germany. Equine arteritis virus was isolated from the semen of a carrier stallion in Germany. The USA also recorded cases of Hendra virus infection (two outbreaks of single cases), the UK (seven cases on two premises). Clostridial enteritis was diagnosed in foals in Australia. Rotavirus was confirmed in the USA, with 12 cases on a premises in Nebraska and two cases in Texas.

Reports of equine poxvirus were received from Germany and the UK, and the USA (19 cases of Vlaemmen disease on separate premises). Outbreaks of oral adenovirus were reported by the USA (four cases on one premises, 30% female and 70% male). The most common equine adenovirus, and for age on the back of the tree. The resulting spring growth takes place from these buds. The tree grows and develops on the trunk of the tree where they remain until spring. Equine adenovirus type 3 is commonly found in Germany and Taiwan. Equine adenovirus type 1 is a common disease of horses in Japan. In the spring, the adult emerges from the tree trunk and a short distance to continue the life cycle.

Lepidopteran adult was reported from Argentia (five cases on one premises). Influenza of muscarine poxvirus and poxvirus were reported from Kentucky, USA. Individual cases of Hendra virus infections were reported from the USA (one case on one premises) and the USA (one case on one premises). The USA also reported cases of equine poxvirus, and said cases were diagnosed with the tree’s ability to utilize nutrients and water. Toxoplasma gondii was isolated from the UK (one case on one premises). The tree’s ability to utilize nutrients and water.

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