Everyone knows that oleander is deadly to horses but who would have thought that every part of the avocado tree is equally as lethal? Or the peach tree? Or weeping cherry, English yew or red maple?

Words & photos: MaryAnne Leighton

As they evolved, most poisonous plants developed toxins in order to protect themselves from insect attack. However, an unfortunate side-effect of this protection is their toxicity to humans, horses and other animals. Many native and introduced trees growing in Australia can kill your horse or make it seriously ill. Some trees are toxic in tiny amounts and different trees have different kinds and different levels of toxins that affect horses in different ways, ranging from mild to fatal. Toxins can affect the brain, skin, heart, liver or metabolism and, as always, the young, old and ill are most susceptible.

Poisoning may be suspected: if a horse dies for no obvious reason or if it is sick even though you feed and worm regularly and look after it well; if you see unusual symptoms that have no obvious explanation; it is ill with no known infectious cause, or the affected horse has insufficient feed or grazing (such as during drought) so is more likely to chew on a tree or eat the leaves and twigs.

If you suspect your horse has been poisoned, contact your vet immediately and remove the horse from the suspected source of poisoning. While waiting for your vet you may be able to reduce absorption of the toxin by keeping your horse quiet and calm and, on your vet’s advice, administering a bran mash mixed with Epsom salts. Treatment by your vet to further reduce absorption may include drenching by stomach tube with fluids, activated charcoal or liquid paraffin.

Do not plant any of the following trees in paddocks, around yards or along fences where horses may reach them. Do not put clippings or fallen leaves where horses can reach them.

(Persea americana)

All parts of the avocado tree – the leaves, bark, skin and stone - are poisonous to horses and most other animals but the leaves contain the highest levels of toxins, even when fallen and withered. Dr Andrew Paxton-Hall of Tamborine Mountain Veterinary Surgery suggests that it is dangerous to even graze horses on pasture where avocado trees are growing or have grown. The toxin in avocado trees is called persin but research has not yet shown exactly how it causes illness and death.

Avocado trees can grow to 15 metres tall or can be low and spreading, depending on the variety. The trees are evergreen but the dark green, glossy leaves are shed continuously and regrow throughout the year. In cooler regions, the tree can be semi-deciduous.

Signs of avocado poisoning are variable and can include: swelling of the lips, mouth, head, neck and elsewhere; gastrointestinal irritation; diarrhoea; lethargy; loss of appetite; non-infectious mastitis and reduced milk production in lactating mares and shortness of breath, respiratory distress, congestion and fluid accumulation around the tissues of the heart in severe cases. Severely affected horses may die suddenly from respiratory failure or heart failure.

Treatment for avocado poisoning will depend on the symptoms displayed. Most horses fully recover, although horses displaying signs of heart and lung damage may have ongoing complications and milk production may not return to normal levels in lactating mares.
BLACK LOCUST

false acacia / locus tree / robinia / yellow locust
(Robinia pseudoacacia)

Black locust is a fast-growing, suckering, broadly columnar tree with spiny shoots. In early and midsummer it bears fragrant white flowers that are followed by smooth, dark brown seed pods. The bark of the tree is thick and deeply furrowed. Black locust grows to 25 metres tall and 15 metres wide.

Because it produces suckers, black locust can form dense clumps that crowd out other plants. It is used as rootstock for grafted varieties of robinia that are sold through nurseries and if the roots of these grafted plants are disturbed, the rootstock can produce numerous suckers that are almost impossible to control.

Black locust should be removed from horse paddocks and if suckers appear after the tree has been removed they should be cut off close to the base and the stump painted with herbicide. Take care not to tie a horse near black locust trees as the horse may chew the toxic bark.

Although horses do not often die from eating black locust, the tree kills by lectin poisoning. Two of the most poisonous substances on earth are ricin and abrin, and both of these are toxic lectins. Lectins are proteins that can attach to sugar molecules. Lectins contained in leaves and seeds do not cause poisoning unless the toxins are released by the horse chewing thoroughly or piercing the seed pod. Released toxins from ingested plants are absorbed from the gut into the surrounding tissues. They bind to proteins on the surface of cells and this allows the toxin access to the inside of the cells.

Signs of lectin poisoning can appear within hours or days and include: loss of appetite; diarrhoea (in severe cases, bloody diarrhoea); weight loss and dehydration. In severe cases of black locust poisoning the horse may have dilated pupils and develop heart irregularities. If a severely-affected horse does not receive prompt treatment, death may occur due to the heart’s inability to supply blood to the body because of low blood volume caused by blood loss or fluid loss.

There is no specific treatment for lectin poisoning although administration of activated charcoal may prevent further absorption of toxins from the gut. The administration of fluids together with supportive care and medications will help with recovery.

ENGLISH YEW

(Taxus Baccata)

English yew is a broadly conical evergreen tree with spreading, horizontal branches, scaly purple-brown bark and shoots that remain green for several years. The dark green leaves are needle-like, glossy or matt on the upper surface and paler beneath. Yellow male cones are borne in spring and fruit consists of single green seeds with juicy, sweet, usually red arils (seed coverings). English yew grows 10-20 metres tall and 8-10 metres wide. It is resistant to most diseases.

All species of yew and all parts of the tree, particularly mature leaves in winter, are considered poisonous to horses, which will not intentionally eat the unpalatable leaves or seeds. Most cases of horses poisoned by English yew have occurred when clippings from trees have been dropped in paddocks or mixed with grass and other plant clippings and left where horses can reach them.

The toxins found in English yew are called taxine alkaloids and they affect the heart. The first signs of poisoning may appear within an hour and the progression of symptoms is rapid. There is no specific treatment for yew poisoning in horses and death is most likely to occur within twelve hours – one report describes the death of a pony within only 1¼ hours of eating only 160g of Japanese yew leaves, and horses have been found dead in their paddocks with yew leaves still in their mouths.’ If the horse survives beyond twelve hours and symptoms improve there is a chance of full recovery. Supportive care may help with survival and subsequent recovery so immediately call your vet if you suspect your horse has eaten any part of a yew tree. Confine your horse to a quiet area and minimise handling as stress can bring on heart failure.

Signs of yew poisoning include: decreased blood flow – it is difficult to find an arterial pulse; incoordination, staggering and trembling; noisy and difficult breathing; decreased tone in the tail and lips and in the final stages the horse will collapse and die, either from heart failure or respiratory failure.
Oleander is widely grown in Australia as a street tree and garden ornamental. It grows 2-6 metres tall and 1-3 metres wide and is extremely toxic to all species, including humans and horses. As few as only seven leaves could be enough to kill an average size horse and only one leaf or flower can kill a human. Contact with foliage may irritate the skin. While the bitter leaves of oleander are normally unpalatable to horses, the dried branches, flowers and leaves are more palatable but still toxic. Most cases of oleander poisoning have involved the ingestion of fallen and wilted leaves or plant clippings.

Oleander kills by disrupting normal heart function and can cause rapid death. The cardiac glycosides contained in oleander inhibit an important enzyme called sodium/potassium antipase that regulates levels of sodium and potassium ions in the body. This leads to a build-up of sodium in cells which triggers a release of calcium into the cells. High levels of calcium in heart cells can cause problems with normal function, leading to heart failure. Cardiac glycosides also affect the nervous and gastrointestinal systems.

Signs of cardiac glycoside poisoning include: diarrhoea; colic; lethargy and weakness; abnormal heartbeat and weak pulse; sweating; cold extremities and shortness of breath. Death from heart failure usually occurs 12-48 hours after a horse eats oleander.

There is no specific treatment for cardiac glycoside poisoning and immediate veterinary attention is critical for there to be any chance of survival. Horses that survive cardiac glycoside poisoning may be left with permanent heart damage. Activated charcoal, fluids and heart medications have been useful in a small number of cases.
Acer rubrum

Known and loved for its striking autumn foliage, the deciduous red maple is grown in Australia as a street tree, garden ornamental or a summer shade tree. It is round-headed and open-crowned and grows to twenty metres tall and ten metres wide.

The bark and wilted leaves of red maple are known to be toxic to horses and there have been a number of horse deaths reported in North America where the tree is common. The dried or wilted leaves of red maple contain an unknown toxin that causes the formation of oxygen-free radicals that damage the membrane of red blood cells and cause the cells to release haemoglobin. Damaged red blood cells are removed from circulation, leading to acute anaemia which can be life-threatening.

Signs of poisoning can appear within ten minutes to an hour after a horse ingests prunus leaves. In the most severe cases, it may only be a matter of minutes between the onset of symptoms and death, and in other cases death may occur one or two hours later. Many times horses are found dead in their paddocks.

Call your vet immediately you suspect prunus poisoning as there are steps he can take in the early stages that may save your horse. However, once the horse shows signs of severe breathing difficulties it is unlikely to survive.

Signs of prunus poisoning are: low blood pressure; rapid breathing; bright red mucus membranes; convulsions; coma; respiratory failure and death.

Chronic cyanide poisoning can occur if a horse eats small amounts of prunus leaves over time and it is thought that low levels of cyanide in the body damage parts of the spinal cord and long nerves. Signs of chronic cyanide poisoning include: constipation; urinary incontinence; weight loss; incoordination of the hind limbs that is more noticeable when the horse is ridden or turned, and severe urinary tract infections. Horses affected by chronic cyanide poisoning usually make a slow recovery once they are removed from the toxic prunus leaves, but if the hind leg incoordination is advanced and/or the horse is suffering from serious urinary tract or kidney infections, the prognosis may not be so good.

Reduce the risk to your horses by educating yourself about trees that kill, landscape with non-toxic trees and understand how, why and when poisoning can occur. If you are uncertain about the possible toxicity of a tree, check with your vet or the DPI.

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