

ADVICE ON

# The Dangers of Ragwort

The  
British  
Horse  
Society



## Ragwort and horses

Common Ragwort (*Senecio jacobaea*), is a prevalent weed that grows throughout the British Isles. Ragwort thrives on wasteland, road verges and railway land, often resulting in its spread to horse pasture. Poor quality and poorly managed horse pastures are particularly susceptible to ragwort infestations as the plant takes advantage of any bare patches or poor sward cover.

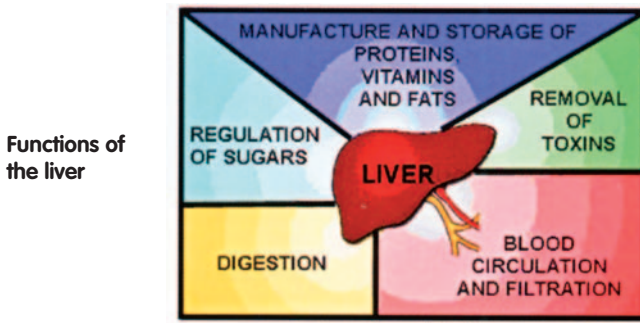
Recognised as an important plant for pollinators, ragwort's growth for biodiversity is important. However, the plant has poisonous properties to which horses are particularly susceptible. Other grazing animals are also at risk. Sadly, it is far too common to observe horses grazing in fields with ragwort. Ragwort has a bitter taste while alive which results in some horse owners assuming that their horses will not consume it. While it is true that ragwort would not normally be a horse's food of choice, the fact that it usually flourishes where other plant life is sparse may encourage its consumption. Some horses appear not to mind the bitter taste and, most importantly, the toxic effects of ragwort are cumulative, so even the accidental consumption of small amounts over a long period of time may be problematic.

As the plant naturally wilts, ragwort loses its bitter taste and becomes more palatable to horses while retaining its toxic properties. Consequently, there is greater risk when the plant is in its dried form; for example, when it is found in hay or haylage. Therefore, no horse owner/keeper can guarantee that their horse will not consume ragwort if it is left to grow on the pasture. Although horses may appear in good health, the damage done by low level ingestion can happen over months or years as the toxin accumulates.



## Ragwort poisoning

The horse's liver is an amazing organ which is responsible for a wide range of functions to keep the horse's body in good working order (see diagram below).



Ragwort contains the toxic compounds pyrrolizidine alkaloids. If any part of the ragwort plant (either growing or in its dried form) is consumed by the horse these alkaloids will be absorbed through the gut wall into the bloodstream and then passed through the liver. Unfortunately, the liver is incapable of removing the alkaloids, or rendering them harmless, and as a result the liver cells (hepatocytes) are damaged.

These damaged liver cells lose the capability to regenerate and thereby create new cells. Thus as they die they are replaced by fibrous tissue. Slowly, as more and more cells are damaged, the liver shrinks and becomes more fibrous in structure (liver cirrhosis). Eventually there are not enough healthy liver cells available to conduct the liver's essential functions and liver failure becomes inevitable. Liver failure (or hepatic failure) normally occurs when more than 70 percent of the liver has been damaged.

## Ragwort poisoning clinical signs

Clinical signs depend upon the amount and length of time the horse's liver has been exposed to the alkaloids. Usually, horses and ponies will not show obvious clinical signs until significant liver damage has already occurred. Therefore, a horse may have quite severe liver damage but appear outwardly healthy; essentially the disease is a silent killer. As a result, until clinical signs are shown, there is no warning of the extent and the irreversibility of the damage to the liver. Signs are variable but may include:

- Weight loss

- Abdominal pain or colic
- Diarrhoea
- Jaundice (yellowing of the gums, skin and whites of the eyes).

Other signs include bizarre or depressed behaviour shown by the horse. Due to alkaloids damaging the effective function of the liver, a build-up of chemicals which the liver would normally have broken down or disposed of remain in the bloodstream. Subsequently, as the blood circulates around the body, the brain is affected, causing it to malfunction. The signs that the horse exhibits stem from the effects of these chemicals on the brain, including:

- Head pressing (often against a stable wall)
- Lethargy
- Loss of coordination
- Continuous circling
- Aimless walking
- Aggressiveness
- Seizures.



**Below: Horse exhibiting a classical sign of liver damage by head pressing against the stable wall**

**Left: Close up**



Pictures courtesy of The Royal Veterinary College

Photosensitisation occurs in light-coloured, non-pigmented or hairless areas of the skin when the liver's function to remove light-reactive chemicals (found in plant material) is hindered. As a result, the chemicals are able to circulate freely in the bloodstream. Upon reaching the skin, the chemicals react to ultraviolet light with results that range from mild skin irritations to severe blistering of the skin. This is not the same as the common problem of sunburn suffered by some horses.

## Diagnosis

Straightforward blood tests can accurately analyse indicators of reduced liver function and liver damage although they do not definitively prove that ragwort is the culprit, simply that the liver has been damaged. This is a worthwhile exercise when assessing horses known to have been exposed to ragwort but that are not showing any clinical signs. The results will help to provide a more accurate prognosis for the horse. In some cases, an ultrasound scan and a liver biopsy may be required.



Picture courtesy of Redwings Horse Sanctuary

## Treatment

Once the horse is showing clinical signs of liver failure the prognosis is poor as there is no effective treatment to reverse the damage to the liver cells. Therefore, if appropriate, treatment is aimed at supporting the functions of the liver and keeping the horse comfortable. Severe neurological signs indicate a terminal prognosis for the horse and euthanasia is the only viable option. Cases of photosensitisation do not immediately indicate the horse has reached the stage of liver failure. Further investigations will need to be completed to achieve a clearer prognosis.

## Ragwort Toolkit

To safeguard your horse ensure all ragwort is removed from their pasture which is often achieved by pulling the plant up or spraying the land with an appropriate herbicide. Ragwort must never be left on the pasture as it becomes more palatable to horses in its dried form but retains its poisonous properties. When handling the plant it is strongly advised to wear gloves and a face mask due to the potential risks of absorbing the toxins through your own skin or inhaling the pollen. For further advice on removing and disposing of ragwort and also for help on what to do if your horse's pasture is surrounded by ragwort, refer to the BHS Ragwort Toolkit, available at [bhs.org.uk](http://bhs.org.uk).



**Above: Ragwort at the rosette stage**



**Right: Ragwort at the plant stage**

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