

## Food poisoning

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There are numerous different causes of food poisoning in horses. This information sheet does not pretend to give an exhaustive list of poisonous plants but to help you:

- Avoid common mistakes which could be harmful to your animal.
- Ask yourself the right questions in order to react quickly when looking for the possible cause of an intoxication. The purpose is to enable implementation.

by **Laetitia MARNAY-LE MASNE** | 12.12.2016 |

Translated from french by : Karen Duffy

Technical level   



## Poisonous plants

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Whether the poisoning is brutal and acute, or chronic and more insidious, in either case "it's the dose which makes the poison". Thus, a few grams of yew can kill a horse, whereas for other poisons it takes prolonged ingestion before symptoms appear.

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Oleander © L. Marnay - Le Masne

In France, there are predominantly 10 species of plant: horsetail, ferns, autumn crocus, yew, St John's Wort, laburnum, black locust, and buttercup. However numerous other plants can prove harmful to horses. The most frequent cases of poisoning are linked to black locust, yew and oleander.

In the wild, a horse will not ingest fresh poisonous plants, except in cases of food scarcity. Food poisoning can thus sometimes be seen during the summer months (especially if there is a period of drought) or in autumn when the resources of grazing land become scarce. The south of France appears to be more at risk than the north, due to these climatic factors but also due to the presence of plants such as datura, *Senecio vulgaris*, *Prunus laurocerasus* and oleander. Take care as this list is not exhaustive!



Yew © L. Marnay - Le Masne

The domesticated horse sometimes appears to "forget" that certain poisonous plants are inedible, but can also be tricked into eating them due to:

- Restricted grazing areas (fields, paddocks) where the density of dangerous plants increases due to overgrazing
- Treatment of pastures which modifies appetite of some poisonous plants.
- This can also be due to a change of region.
- Hay which is contaminated with plants the horse would not have eaten before cutting (horsetail)
- Feeding on remains of hedge pruning, very often containing poisonous species of plant (thuja, yew, laurels, box tree)

**NB:** Some plants which are poisonous when fresh, are no longer so when cut and dried in hay. This is the case of the buttercup family, which the horse does not eat in the field, and which contain protoanemonin; this molecule dimerizes when drying. Furthermore, there are no known cases of severe poisoning due to the Buttercup family (*Ranunculaceae*).

## Fungii, mould and consequences

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Any mouldy feed is dangerous for horses. It can lead to skin allergies, respiratory allergies (pulmonary emphysema), digestive or eye problems, or food poisoning.

### Mycotoxicosis

Mycotoxins are poisonous chemical compounds produced in some fungii. These fungii develop:

- Prior to harvest (ground fungi).
- After harvest (storage fungi)
- On cereal (particularly corn, but also on barley and oats....)
- On fodder.
- In specific conditions related to temperature, humidity, and gas content in the air.

The toxicity of mycotoxins depends on the quantity ingested. Severe symptoms of acute poisoning may occur, or lesser symptoms such as respiratory disorders, loss of appetite, diarrhoea, general lethargy and poor performance all of which indicate chronic poisoning. In this case it is more difficult to establish the link between the symptoms and the cause.

Consequences could be colic, liver, kidney, immune system, reproduction system disorders, with possible carcinogenic consequences.

The horse is usually a picky feeder with regard to the organoleptic quality (taste) of its feed. If a horse, or several horses refuse their feed it is advisable to trust their instinct.

### A few diseases

Atypical myopathy (or atypical myoglobinuria) is a disease which affects horses out of grass, particularly young or older horses. According to the Equine Veterinary Journal (Votion et al 2013), atypical myopathy is caused by a poison contained in sycamore tree seeds. ( *Acer pseudoplatanus*).

Grass sickness is a polyneuropathic disease of which the causes are still largely unknown. It is linked to grazing in specific conditions, and appears to be associated to contamination by a neurotoxin.

Botulism is caused by contamination of the horse by clostridium botulinum. This telluric anaerobic bacterium produces a powerful toxin which attacks the nervous system of infected animals

## How to reduce risk ?

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### Fodder and cereals



*The eye and nose can readily detect mouldy hay (on the left) or a well preserved hay (on the right)*  
© A.C. Grison

#### Optimize harvesting conditions

- Choice of mould resistant species
- Harvesting in good ecological and weather conditions



*Storing hay on pallets prevents humidity from the soil from affecting it.* © L. Marnay - Le Masne

#### Optimizing storage conditions

- Regular cleaning of the premises
- optimizing air flow and ventilation
- storage of cleaned cereals in polypropylene bags, out of the damp and away from rodents.
- Placing pallets in the barn on which to store bales of hay to prevent the damp from the soil moving up into the bales.

### Drinking water



*Figure 1Be careful of the quality of pond water* © L. Marnay - Le Masne

Drinking troughs in stables are usually linked up to the drinkable water grid. However in some studs drinking water is potentially provided through wells, bore holes, or surface water (streams and ponds) which can easily become contaminated. In addition to smell or taste which can sometimes limit water consumption, the presence of nitrates, heavy metals, bacterial proliferation and mineral unbalance can cause more or less severe afflictions. Therefore any unresolved pathology should lead to an analysis of the drinking water.

Horses drinking contaminated water can also cause Leptospirosis.

### Other sources of poisoning to watch out for

- Food supplements which are toxic for horses: can be incorporated by mistake in the manufacturing process of hard feeds. The factories are often used to produce feed for other species, and a feed destined for poultry or rabbits could mistakenly be given to horses who do not tolerate it. The CNEF ( French Equine nutritional club) has defined a charter of good practices in order to eliminate this hazard.
- Nutritional overdosing in some vitamins or minerals such as iron, selenium, iodine, and vitamins D and K3.
- Pesticides used to treat grain: anti-fungal treatment, bird repellent, slug pellets, insecticides, ascaricides.
- Anticoagulants contained in rat poison, can be accidentally ingested by horses. The dose is not usually enough to kill a horse.
- Heavy metals: ingesting lead through licking paint, or through eating contaminated hay exposes the horse to saturnism. Cadmium is also very toxic.
- Herbicides (Glycophosphate): can cause colic, but this remains the exception, and is frequently benign.
- Creosote: Used to treat wood, railway sleepers and wood fencing. Risk of arsenic poisoning in the case of licking.

## How to react

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### Clinical symptoms

Clinical symptoms of food poisoning are frequently non-specific. They appear after a variable lapse of time, depending on the type of poison and the quantity ingested. The symptoms may include:

- General lethargy
- Digestive disorders (colic, diarrhoea); urinary problems
- Cardio frequency, or breathing patterns disruption
- Musculoskeletal disorders ( ataxia, convulsions)

There are antidotes for some of the well known poisons, which will counteract their effect when administered quickly. For others a symptomatic treatment can be implemented.

In the presence of food poisoning it is sometimes difficult to determine the potential cause quickly, thus exacerbating the risk, given that a horse cannot vomit.

## Organisations to help in the case of food poisoning

France has several organizations available which operate in the same way as the human anti-poison centers available to people:

CNITVs (National veterinary toxicology information centers) which are located within the 4 major veterinary schools (Alfort, Lyon, Nantes, Toulouse)

- **open 24/7 :**
  - o Lyon : 04 78 87 10 40
  - o Nantes : 02 40 68 77 40
- **Open from 9am to 5pm on working days :**
  - o Alfort : 01 48 93 13 00
  - o Toulouse : 05 61 19 39 40

These centers collect information relating to all cases of animal poisoning, and communicate to veterinarians (75%) and individuals (18%) who contact them:

- Diagnosis and treatment advice
- Possible antidotes

Calls about horses represent 3% of all the cases of poisoning treated.

## About our writers

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