

NEUROLOGICAL INTOXICATIONS CAUSED BY PLANTS IN EQUIDS



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INTRODUCTION

Many of the plants that grow near us contain chemical components that give them toxic properties (Pinillos et al. 2003). Intoxications caused by plants in animals are common in Europe (Caloni and Cortinovis 2015) and represent a frequent problem in equine veterinary medicine, although they are often not considered when diagnosing, probably due to the lack of knowledge that exists in this area (Berny *et al.* 2010).

OBJECTIVES

The aim of this project is to make a compilation of the plants present in Europe that cause neurological symptoms in horses, in order to facilitate early detection of these poisonings, the identification of associated plants, the prevention and, if possible, the treatment.

Table 1. Plants that cause neurotoxic diseases in equids grouped according to their toxic compound

Toxic compound	Plants	Clinical signs
Pyrrolizidine alkaloids (most common compounds)	<i>Senecio spp.</i> , <i>Crotalaria spp.</i> , <i>Cynoglossum officinale</i>	Hepatic encephalopathy signs: proprioceptive deficits, ataxia, head pressing, circling.
Non-pyrrolizidine alkaloids	<i>Conium maculatum</i> , <i>Chimonanthus praecox</i> , <i>Datura stramonium</i> , <i>Astragalus spp.</i> & <i>Oxytropis spp.</i> , <i>Zigadenus spp.</i>	Different signs: ataxia, salivation and frequent urination, convulsions, tremors, behavioral changes, hyperreflexia.
Thiaminase	<i>Pteridium aquilinum</i> , <i>Equisetum spp.</i>	Ataxia, clonic spasms, opisthotonus.
Glycosides	<i>Sorghum spp.</i> , <i>Trema micrantha</i>	Ataxia, urinary incontinence, sialorrhea.
Toxoalbumins	<i>Ricinus communis</i> , <i>Robinia pseudoacacia</i>	Mydriasis, depression, trembling, anorexia.
Cicutoxin	<i>Cicuta spp.</i>	Convulsions and rapid death.
Cholinesterase inhibitors	<i>Solanum spp.</i>	Progressive paralysis, prostration.

Other plants with unknown toxins

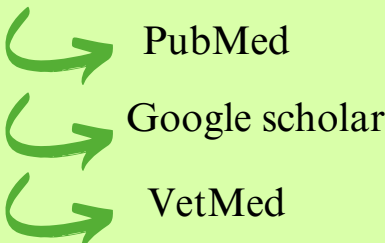
- *Centaurea spp.* - ENE signs
- *Hypochaeris radicata* - Stringhalt
- *Lathyrus spp.* - Hind limbs paresis
- *Trifolium hybridum* - Depression and excitement cycles, head pressing

CONCLUSIONS

- Horses can consume a wide variety of plants that can cause nervous symptoms and, often, death.
- Most cases are not diagnosed.
- Prevention is the best way to reduce and avoid these cases.
- More research and training is needed in this area.

MATERIALS AND METHODS

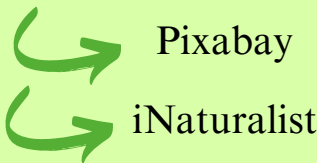
Bibliographic research



References



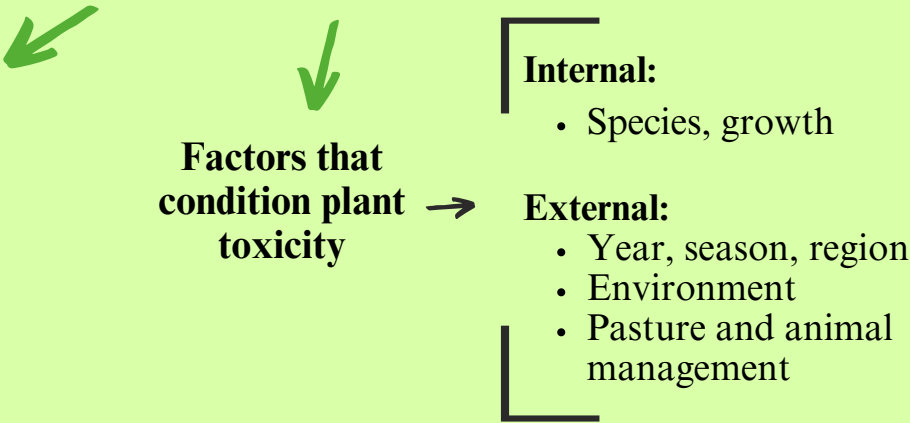
Image banks



Informative triptych



NEUROTOXIC PLANTS



DIAGNOSIS

Based on clinical signs, necropsy findings, collection of plant samples and laboratory analysis to identify the causative plant (Hovda et al. 2022). It is necessary to take into account the concordance of the amount ingested with the signs presented and the identification of the plant on the site (González 2010).

Differential diagnosis → Fumonisin, endophytic fungus, infections, heavy metal poisoning, traumatism, rabies, etc.

TREATMENT OR PREVENTION?

In most cases there is no antidote (Barr and Reagor 2001; Ramadan and Dailey 2022).

Supportive and maintenance therapy

Prevention measures

- Good pasture management
- Keep stables in good condition and clean
- Avoid overpopulation
- Give enough food
- Avoid low quality hay
- Eradication and control of toxic plants
- Keep enough stones and mineral correctors