

INTRODUCTION

There are a wide variety of milkweed plants responsible for poisoning and death of horses. These plants grow in a range of soil and moisture conditions, from roadsides and ditches to pastures and rangelands. The growing season varies with the particular species, but growth (and the greatest incidence of poisoning) occurs primarily in warm weather from March to September.

DESCRIPTION OF PLANT

Milkweed (*Asclepias* spp.) is an erect-stemmed, herbaceous perennial plant that grows from 3 to 4 feet tall (Figure 1). The more common species can be differentiated by their leaf shape and arrangement as well as the color of the flowers. The plants are characterized by the thick, milky sap that seeps out when the plant stem is broken. Milkweed seed pods contain many seeds, with each seed having a tuft of silky white hairs. For more information on identifying milkweed varieties, consult your local county Extension agent or NMSU Extension Circular 531, *Livestock-Poisoning Plants of New Mexico Rangelands*.²

TOXIC PRINCIPLES

The toxic nature of milkweed is due to one of two agents: cardiac glycosides (cardenolides) or an unidentified neurotoxin. The cardiac glycosides are found in the majority of milkweed species, while the neurotoxin is specific to the whorled-leaf types such as horsetail milkweed. Of the two, the neurotoxin is the most lethal.

The lethal dose of milkweed varies among species and, to a lesser extent, plant parts, but consuming green plant material in an amount equivalent to 0.005 to 2.0% of the horse's body weight is considered to be a toxic dose. For a 1,000-pound horse, this toxic dose could be between 1/2 and 20 pounds of plant matter. While the fresh, green plant material is the most toxic, dried plants present in pastures or hay retain their toxicity.

SYMPTOMS

Signs of milkweed poisoning due to cardiac glycosides include depression and reluctance to stand, irregular heartbeat, colic, dilated pupils, muscular weakness or tremors and uncoordinated gait, and labored breathing, with death following within 24 hours. Unlike the neurotoxicity described below, poisoning due to cardiac glycosides rarely results in convulsions, so death usually occurs without signs of struggle.

Signs of whorled milkweed poisoning affecting the nervous system include severe colic, dilated pupils, muscle tremors and falling down, incoordination, violent convulsions, and respiratory failure, normally leading to death within 24 hours of ingesting the toxin.

If you believe that your horse may have been exposed to milkweed toxins, remove the suspect feed immediately and call your veterinarian. He or she may be able to administer a course of treatment that can help minimize the absorption of the toxic compounds by the digestive system. Supportive therapy may aid horses in combating the neurotoxicity symptoms.

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²http://aces.nmsu.edu/pubs/_circulars/CR-531.pdf



Figure 1. Horsetail milkweed (*Asclepias subverticillata*) is one of the more toxic species of milkweed plants.

MANAGEMENT: PREVENTION AND CONTROL MEASURES

Milkweed is very unpalatable, and horses do not readily consume it. The risk of poisoning increases when pastures or rangelands are overgrazed and horses have no other suitable forage to eat. Therefore, horse owners should closely monitor grazing conditions on their pasture or range to prevent overuse, and develop a weed management plan for areas such as field edges, fence lines, irrigation ditches, and roadsides where milkweed infestation is more common. In addition to sound grazing management, herbicides can be an important component of a comprehensive weed management

Table 1. Herbicides and Application Rates for Control of Milkweed on Rangeland and Pastures

Common Name	Trade Name	Application Rate Amount/Acre	Time of Application
Picloram	Tordon 22k	1 qt	Seedling to bloom
Picloram: 2, 4-D	Grazon P + D	1 to 2 qt	
Dicamba	Banvel, Clarity	1 pt	
Dicamba: 2, 4-D	Weedmaster	1 to 2 qt	
Chlorsulfuron	Telar XP	1/2 to 1 oz	
Metsulfuron	Escort XP	5/8 to 4/5 oz	
Metsulfuron: chlorsulfuron	Cimarron Plus	8/10 to 1 oz	
Metsulfuron + 2, 4-D: dicamba	Cimarron Max	Rate II 1/2 oz + 2 pt	

plan. Herbicides that are currently labeled for control of milkweed are listed in Table 1.

The greatest incidence of milkweed poisoning in horses occurs when milkweed species have been baled along with the normal hay crop. Although horses may be able to sort broadleaf and course-stemmed milkweed plants from the hay, the whorled-leaf plants commonly found in hay fields have finer stems and leaves, making them more **difficult to find** and sort out. While horse owners should always be diligent in inspecting hay and grain as it is fed to their horses, they should be **extra cautious** when feeding hay that is harvested from high-risk areas (such as field edges or roadsides) where milkweed infestation is likely to occur.

CONCLUSION

Although milkweed is unpalatable to horses, the potential for death due to ingestion of the plant is high. Therefore, horse owners should take appropriate measures to rid their pastures of milkweed and ensure that the hay they provide their horses is safe and free of milkweed. As is the case with many plant poisonings, preventing consumption of the plant is the only guaranteed means of avoiding toxicity and potential death.

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