

Middle California Region USPC Toxic Plants Study Guide

- **Black Nightshade**
- **Bracken Fern**
- **Chokecherry**
- **Frosted Grass**
- **Horsetail**
- **Oleander**
- **Poison Hemlock**
- **Ragwort**
- **Red Maple**
- **Yellow Star Thistle**

Sources:

The United States Pony Club Manual of Horsemanship
C Level

USDA Poisonous Plant Research Library
http://www.pprl.ars.usda.gov/Poisonous_Plants.htm

University of Pennsylvania
Poisonous Plants
<http://cal.vet.upenn.edu/poison/index.html>

Colorado State University
Guide to Poisonous Plants
http://www.vth.colostate.edu/poisonous_plants/report/search.cfm

Black Nightshade, Horse Nettle *Solanum nigrum (americanum)*



Description:

Vine with purple flowers, green and red berries. Grows in fence rows, hedges and pastures.

Where Found:

Throughout U.S.

Toxic Parts:

Nightshade contains alkaloids that interfere with digestion by inhibiting the autonomic and parasympathetic nervous systems and by directly irritating the digestive system. Unripe berries are more toxic than ripe berries. Berries are more toxic than leaves which, in turn, are more toxic than stems or roots. Overall plant glycoalkaloid content is often higher in the autumn than in the spring.

How much is toxic?

Small amounts (1 – 10 lbs) can be fatal.

Symptoms of Poisoning:

Elevated blood pressure, increased heart rate, abdominal pain, dilation of pupils, loss of appetite, diarrhea, progressive weakness/paralysis, prostration and unconsciousness, death. Nervous signs build to a maximum followed by death or recovery within 1 to 2 days.

Treatment:

No medical cure, but horse can be helped through the trauma of the symptoms.

Bracken Fern, Eastern Brackern

Pteridium aquilinum



Description:

Course, perennial fern. Triangular outline

Where Found:

Northeast, Pacific Northwest, upper Midwest. Fern found in wooded areas.

Toxic Parts:

Leaves of bracken fern are poisonous to horses both when fresh and when dry in hay. Bracken fern contains thiaminase, which causes a deficiency in Vitamin B1 (thiamine) and which is important for proper nerve function.

How much is toxic?

Usually eaten in fall when pasture is poor. Horses must consume a diet of 3-5% bracken fern for at least 30 days before clinical signs appear. Symptoms are slow to develop

Symptoms of Poisoning:

Depression, muscle tremors, loss of flesh, jaundice, loss of appetite, weakness, staggering gait, excitability, paralysis

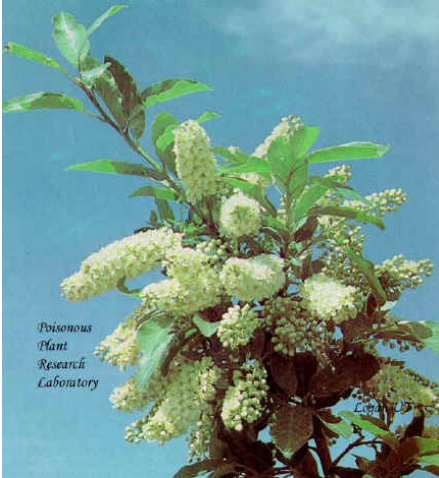
Treatment:

Contact veterinarian immediately

Well-timed injections of thiamine can successfully reverse the damage caused by ingestion of bracken fern.

Chokecherry, Wild Black Cherry

Prunus species



Description:

Shrubs or trees with smooth bark marked by lines flowers in clusters, showy and fragrant, appearing in spring; fruit fleshy, usually blue to black.

Where Found:

Southeast, Northeast, Midwest, and upper Midwest

Toxic Parts:

Especially dangerous when leaves are wilted (broken branches or after frost). Wilting releases cyanide and makes them sweet.

How much is toxic?

10 to 20 lbs can rapidly be fatal.

Symptoms of Poisoning:

Animals are commonly found dead due to rapidity of cyanide's effects.

Symptoms of poisoning may include heavy breathing, agitation, weakness and rapid death.

Treatment:

Contact veterinarian immediately

Frosted Grass/Lawn Clippings (especially clover & alfalfa)

Description:

Any recently frozen grass
Any lawn clippings

Where Found:

All over

Toxic Parts:

Plant is not toxic until frosted or cut at which point it ferments and releases gas, which can cause colic.

How much is toxic?

Small amounts

Symptoms of Poisoning:

Gas Colic

Treatment:

Same as colic treatment

Horsetail, Field Horsetail

Equisetum arvense



Description:

Shoots 1-3 feet tall, needle-like stems

Where Found:

Midwest to Pacific Northwest and Southwest. Grows in wet marshy or meadow areas.

Toxic Parts:

All parts are toxic. Poison Hemlock contains assorted piperidine alkaloids that cause respiratory failure in less than three hours. It is especially poisonous in young horses.

How much is toxic?

Hay containing this weed may be more poisonous than fresh plants in the field.

Symptoms are slow to develop. Eating hay containing horsetail for 30 to 60 days causes thiamine deficiency.

Symptoms of Poisoning:

Jaundice, loss of appetite, weakness, staggering gait, excitability, paralysis

There is no known antidote

Treatment:

Contact veterinarian immediately.

Oleander

Nerium oleander



Description:

Ornamental house and garden plant, grows as shrub or small tree

Leaves are lance-shaped, thick and leathery, 8 to 10 inches long

Flowers are showy, 1 to 3 inches in diameter, grow in large clusters, are white or any shade of pink or red

Where Found:

West coast and southern states

Toxic Parts:

Oleander ranks with yew in toxicity. Oleander contains a poisonous principle similar to digitalis in its effect on the heart, causing arrhythmia and cardiac arrest. The effects are reversible and the horse may recover if he ingests a less-than-lethal dose (a single ounce of oleander leaves can kill a 1,000 lb. horse). All parts of plant are toxic. Plant clippings especially dangerous as they are sweet.

How much is toxic?

4 oz. can be fatal

Symptoms of Poisoning

Severe diarrhea, sweating, abnormal heartbeat, difficult breathing, cold extremities, pale mucus membranes, colic.

Treatment:

Contact veterinarian immediately.

Empty gastrointestinal tract.

Medications may control affects of toxins on heart.

Ornamental Yew, Japanese Yew

Taxus species



Description:

Landscaping shrub

Where Found:

Northeast, Midwest

Toxic Parts:

Yew trees are extremely toxic to horses and all grazing animals. Yew contains an alkyloid that depresses the action of the heart. The whole plant, except for the red fruit, is toxic.

How much is toxic?

This plant is highly toxic to herbivores. As little as 6-8 ounces of fresh yew may kill a horse. Don't let pony nibble shrubs or eat clippings.

Symptoms of Poisoning:

Trembling, muscle weakness, labored breathing, collapse.

Treatment:

Assisted respiratory and vascular support may be helpful. Detoxification measures, including activated charcoal and catharsis, should be promptly taken.

Poison Hemlock

Conium maculatum



Description:

Poison hemlock is a coarse biennial herb 3-6 feet tall: the stem is smooth, purple-spotted, and hollow; the leaves are alternate, with bases sheathing the stems, appearing much like parsley; the flowers are in compound umbels, small and white.

Where Found:

Poison hemlock grows on fertile, moist soils across the United States in locations such as woodlots, fencerows and waste areas.

Toxic Parts:

Coniine and related pyridine-type alkaloids are present in the root, young plants and seeds. As plants mature, the foliage loses alkaloid content, but the seeds accumulate the alkaloid. Can cause respiratory failure in less than three hours.

How much is toxic?

The whole green plant is toxic at dosages of approximately 1% of body weight

Symptoms of Poisoning:

Frothing at the mouth, dilated pupils, weak, rapid pulse, muscle tremors, muscular weakness, convulsions, clamping of jaws, and coma.

Treatment:

Immediate veterinary attention

Stomach should be evacuated, and activated charcoal administered.

Stimulants administered immediately and supportive therapies may help to counteract the effects of the poison coniine found in this weed.

Ragwort, Tansy Ragwort, Groundsel, Senecio

Senecio species



Description:

A perennial, sometimes biennial, herb that grows up to 3 feet tall. It has flat-topped clusters of small, yellow, daisy-like flowers. The leaves are pinnately dissected into narrow segments.

Where Found:

Found primarily in the Pacific NW and California. Also found in the Plains States to Southwest. Common invaders of pastures and hayfields.

Toxic Parts:

Tansy Ragwort contains liver-damaging alkaloids which cause liver cells to expand, then die.

Flowers are the most toxic plant part, followed by leaves and stems. Roots are not toxic.

How much is toxic?

May be eaten in pasture when grass is poor. Toxicosis most often occurs following long term consumption. Causes liver damage.

Symptoms of Poisoning:

Jaundice, high temperature, yellow mucous membranes, depression, disorientation, liver failure.

Treatment:

Contact Veterinarian immediately

Often futile due to advanced, irreversible damage to liver.

Red Maple

Acer rubrum



Description:

Red maple is a typical maple with opposite simple leaves. The leaves are broad and have three to five lobes with palmately arranged veins. The fruit is a two-winged, two-seeded structure; the wings form a “V” and the two seeds lie at the bottom of the V.

Where Found:

Red maple ranges naturally over the entire eastern United States and grows on well-drained or moist, swampy soils. It may be a pest species in cut-over areas such as utility rights-of-way or deforested pasture lands. It is also grown as a cultivated ornamental tree.

Toxic Parts:

Leaves, especially when fallen, damaged, or wilted. The toxin has not been identified, but is believed to be an oxidant due to its effects on red blood cells. Only horses are known to be affected. The ingestion of wilted or fallen leaves causes massive destruction of red blood cells, and the blood can no longer carry sufficient oxygen. Wilted or dry leaves remain toxic for about a month. Fresh and undamaged leaves have not been implicated, but ingestion is still not advised.

How much is toxic?

Fresh, wilted and dried leaves are toxic and ingestion of as little as 0.3 % of the body weight as leaves is toxic to horses. Ingestion of 1.5 pounds of leaves is toxic, and ingestion of 3 pounds is lethal.

Symptoms of Poisoning:

Clinical signs develop within one or two days and can include depression, lethargy, increased rate and depth of breathing, increased heart rate, jaundice, dark brown urine, coma, and death. Approximately 50% to 75% of affected horses die or are euthanized.

Treatment:

There is no specific treatment, and contacting a veterinarian is advised.

Rhododendron, Mountain Laurel

Rhododendron maximum



Description:

Perennial shrubs that have tough, gloss, smooth-margined evergreen leaves
Large showy flowers with five white, pink, or red petals

Where Found:

All over U.S.

Toxic Parts:

Leaves and flower nectar are sources of the toxin.

How much is toxic?

As little as 3 ml nectar/kg body weight or 0.2% of the body weight as leaves may be toxic or lethal.

Symptoms of Poisoning:

Depression, diarrhea, muscular weakness, impaired vision, difficulty breathing, collapse, coma

Treatment:

Immediate veterinary attention

Detoxification. Activated charcoal should be administered repeatedly the first day.

Yellow Star Thistle, Russian Knapweed

Centaurea solstitialis



Description:

Stiff, upright stems that branch from the base. Yellow, thistly flowers.

Where Found:

California, Rocky Mountains, Plains States

Toxic Parts:

All parts are toxic. Yellow star thistle contains an unidentified compound that causes nigropallidal encephalomalacia or chewing disease in horses. The compound only affects horses and permanently damages the area of the brain that controls fine motor movements, including mouth and lip movements. Plant tastes good, so horse will continue to eat it.

How much is toxic?

Toxicity effects are cumulative. Horses must consume a 50-100% of an animal's weight, or 400 – 600 lbs, in dry-weight plant material over a period of 1 to 3 months to produce symptoms.

Symptoms of Poisoning:

Symptoms include fatigue, lowered head, an uncontrolled rapid twitching of the lower lip, tongue-flicking, involuntary chewing movements, and an unnatural open position of the mouth. Poisoning makes horse unable to chew or swallow.

Treatment:

Without intervention, affected horses are unable to eat or drink and eventually die from starvation or dehydration.