Common Plants Poisonous to Horses and Livestock in Maryland

Introduction

Normally, the threat of poisonous plants to grazing animals is very low. A well-managed pasture provides enough good forage that animals have no reason to eat the unpalatable, less desirable poisonous plants. In addition, a well-managed pasture does not provide enough space for very many undesirable plants to become established.

Even in a poorly managed pasture, there are still enough harmless plants to eat so that poisonous plants are usually a threat. However, during hot, dry weather the desirable cool season plants become less productive, even dormant, leaving summer adapted weeds to dominate the pasture. Most of these weeds are perfectly safe to eat; in fact, some can be quite nutritious while others can be deadly under certain conditions. This same situation can develop in an overgrazed, poorly managed pasture, where the lack of desirable forage can cause the animals to eat not only weeds, but also the leaves of woody plants. These can be very poisonous.

If there are weeds in the pasture, get them identified to learn if they are poisonous to grazing animals. Timely mowing can slow the spread of most weeds and make them less likely to be eaten by animals. It is also a good idea to maintain a supplemental feed supply, such as hay. Allowing animals to feed on some hay, prior to being turned out into pasture, makes them less likely to feed on poisonous plants. If weeds are a serious problem in the pasture, the use of a broadleaf herbicide labeled for pasture could be used to eliminate them. The herbicide treatment should be followed by an over-seeding of desirable forage grasses and legumes to prevent new weeds from infesting the pasture.

Caution should be taken when purchasing or using “meadow hay”, which often refers to hay made from unmanaged fields such as flood plains or other waste areas. These fields can contain poisonous plants that can go undetected when harvesting and feeding. Before mowing a meadow for hay, the field should be inspected for poisonous plants, which should be avoided during the harvest. These plants can be controlled later with herbicides. Hay buyers should inspect a good sampling of bales before purchasing any meadow hay; it would be best, if a buyer could inspect the meadow for weeds in advance of the harvest.

Animals have been poisoned and have died by eating plant clippings from homeowners living next to pastures. Homeowners have been known to throw their clippings from pruned ornamental plants into an adjacent pasture for animals to eat. Pruned plant material from azaleas, rhododendrons, yews, and other plants can be deadly to animals. If there are homes abutting pastures, it is recommended that these homeowners be advised not throw pruned plant materials into the pasture.
Finally, it is a good idea to keep a watchful eye for any changes in animal behavior. If something wrong is suspected, call a veterinarian immediately. Speedy treatment is critical with many disorders, but is doubly critical with a suspected plant poisoning. Being able to identify the plants that are growing in and around the pasture, and in particular the poisonous species, is a necessary skill that all pasture managers should learn.

Trees

Black Locust (*Robinia pseudoacacia*)

Description

Black locust is a common, fast-growing deciduous tree with leaflets of small alternate oval leaves. Young trees will have sharp spines on the branches. The fruit is a brown, flat pea-like pod that ripens in the fall. Black locusts are a legume.

Poisonous Parts

All parts of the black locust are poisonous. The bark, seeds, and new growth are the most toxic. Horses have been poisoned by eating the bark from locust fence posts. All animals can be affected by ingesting enough parts of black locust.

Signs of Poisoning

Animals poisoned by black locust may show weakness, dilated pupils, weak irregular pulse, diarrhea, stomach pain, and posterior paralysis. Black locust poisoning is rarely fatal.

Oak (*Quercus sp.*)

White Oak
Description

There are many species of oaks; most are common deciduous trees in this region. Each species has its own distinct shaped leaf.

Poisonous Parts

All oaks produce acorns, leaves, and bark containing tannin, which is toxic in large amounts to animals. The older the leaves and acorns, the more toxic they become when eaten. All animals can be affected by ingesting enough parts of oak trees.

Signs of Poisoning

Oak poisoning affects the gastrointestinal tract, liver, and kidneys. Poisoning can result in anorexia, constipation, rough coat, dry muzzle, abdominal pain, thirst, frequent urination, and bloody diarrhea. Unless prompt treatment is administered, this will be fatal in most cases.

Red Maple (Acer rubrum)

Description

There are many species of maples, which are common deciduous trees in this region. The red maple appears to be the only species to have toxic properties; the exact identification of the toxin is not known. The leaves turn shades of red, orange, and yellow in the fall.

Poisonous Parts

All red maples are believed to be poisonous to horses. Wilted and dried leaves are toxic, as well as the bark. Poisoning from red maple has only been seen in horses; however, there is no reason to assume that this cannot occur in other farm animals.

Signs of Poisoning

Red maple poisoning causes severe anemia that result in weakness, depression, pale mucous membranes, and dark urine. Death can occur when red blood cells are unable to carry oxygen to tissues. Pregnant mares may abort.
Cherry (*Prunus sp.*)

Description

Cherry trees are one of the most common deciduous trees in the state, and they can contain the most potent toxin of any tree species found in the state. The toxin can be found in both wild and choke cherry trees, as well as in cultivated species of cherries.

Poisonous Parts

The wild cherry is the most toxic of the species. The toxin is formed when the leaves are wilted, and is present until the leaves are no longer wilted. Animals ingesting wilted cherry leaves experience the release of cyanide (HCN) into the bloodstream; this toxin is very potent. It has even been reported that horses showed symptoms of cyanide poisoning by ingesting the castings (excrement) from eastern tent caterpillars while grazing near cherry trees. If cherry trees are when reach of animals in the pasture, beware of wilted leaves as a result of broken limbs from storms and frosted leaves. All animals can be affected by ingesting wilted cherry leaves.

Signs of Poisoning

Cherry poisoning results in cyanide being released into the blood stream causing slobbering, increased respiration and weak pulse, convulsions, and rapid death. Mucous membranes will be bright red.

Common Plants

**Black Nightshade** (*Solanum nigrum*)
**Description**

Black nightshade is a summer annual plant that can reach a height of 3 feet and is related to tomatoes and potatoes.

**Poisonous Parts**

The leaves and berries are of black nightshade are toxic to all animals that ingest it.

**Signs of Poisoning**

Black nightshade poisoning in animals results in signs of neurological and gastrointestinal disorder, tiredness, muscle twitching, bloating, and congestion in the lungs, heart, and spleen.

**Bracken Fern** (*Pteridium aquilinum*)

*Description*

Bracken fern is a plant that has a dark horizontal stalk that grows at least 3 feet tall with segments of firm, leathery leaves, triangular in shape. These plants grow in shaded, wooded areas.

*Poisonous Parts*

The leaves and stems of bracken fern are poisonous to all animals, with different toxins affecting horses and ruminants. Animals will not usually eat bracken fern unless there is no other forage.

*Signs of Poisoning*

It usually takes a month or longer for bracken fern poisoning to cause visible symptoms in horses. They will become uncoordinated, depressed, experience blindness, and will stand in a braced position with legs apart. If not removed from the fern and treated quickly, death will occur. Ruminants will have similar symptoms; in goats, if left untreated, the poisoning will progress to a stage of paralysis known as goat polio.
Buttercup (*Ranunculus sp.*)

**Description**

Buttercup is a perennial plant with three species common to this region; they are bulbous, tall, and creeping. It will range in height from 6 inches to 2 feet depending on the species. Creeping buttercup will reproduce both from seeds and runners.

**Poisonous Parts**

All parts of the buttercup plant can be harmful to all animals.

**Signs of Poisoning**

Buttercup poisoning can cause excess salivation, depression, blindness, and bloodstained urine. Also, buttercup can cause ulceration of the animal’s skin or lips, diarrhea, nervousness, and abdominal pain.

Cocklebur (*Xanthium sp.*)

**Description**

Cocklebur is a summer annual plant reaching 3 feet in height. It has alternating leaves and produces bur-like fruit that resembles cockles and prefers poorly managed fields and over-stocked feedlots. There are several species of cocklebur and all are poisonous.

**Poisonous Parts**

Cocklebur’s seedlings are very toxic and can cause death to all animals; horses are especially sensitive to it. The leaves from seedlings are still toxic when dried, so they pose a risk to animals, when hay is made from poorly
managed fields and meadows. The burs are also highly toxic when consumed, however animals rarely eat mature plants.

**Signs of Poisoning**

Cocklebur poisoning develops very rapidly after being consumed. Symptoms will consist of gastrointestinal distress, depression, anorexia, nausea, weakened heartbeat, muscular weakness, and in some cases convulsions. Due to the toxic effects to the liver, surviving animals will suffer from chronic liver disease.

**Hemp Dogbane** (*Apocynum cannabinum*)

**Description**

Dogbane is a perennial plant similar to milkweed with milky juices. The plant can reach 5 feet in height, has opposite leaves, and produces long, narrow seed pods. The plant will spread by both seeds and creeping rhizomes (roots).

**Poisonous Parts**

Both the leaves and stems from dogbane are highly toxic. Ingesting as little as one-half of an ounce of dogbane has been known to be fatal to any animal. Because of its bitter taste, animals rarely eat it unless there is little pasture left.

**Signs of Poisoning**

Symptoms of ingestion of hemp dogbane include bloating, weak and rapid pulse, higher than normal temperature, staggers, convulsions, and death.

**Horsetail** (*Equisetum arvense*)
Description

Horsetail is a perennial plant. Also known as field horsetail, it looks a lot like asparagus and grows mostly in fallow fields. The grass-like leaves are arranged in whirls around the stem of the plant when in its leafy state.

Poisonous Parts

All parts of horsetail are poisonous. Plants, in the green, fresh state, appear to be less toxic than when dried in hay. All farm animals have shown to be susceptible to the toxic effects of this plant; however, horses appear to be the most at risk.

Signs of Poisoning

Hay containing horsetail, when fed for a few weeks, caused animals to appear unthrifty, experience weakness, and stagger. Other symptoms reported have been trembling, muscular rigidity, diarrhea, rapid pulse, and cold extremities.

Jimsonweed (Datura sp.)

Description

Jimsonweed is a summer annual plant reaching 5 feet in height. It has large, wavy leaves and produces large, 2-inch, bur-like fruit. It prefers poorly managed fields and over-stocked feedlots. It is in the nightshade family.

Poisonous Parts

All parts of jimsonweed are highly poisonous and can be fatal when consumed in more than a minute amount.

Signs of Poisoning

Symptoms of jimsonweed poisoning occur within minutes of ingestion; these include depression, colic, diarrhea, thirst, convulsions, dilated pupils, coma, and respiratory paralysis.
Johnsongrass (*Sorghum halepense*)

**Description**

Johnsongrass is a perennial tall growing grass with broad leaves that is related to sorghum, sundangrass, and sudex. Grown as a forage grass in some areas of the USA, Johnsongrass is recognized as an invasive noxious weed in many states, including Maryland. It spreads by both seeds and underground rhizomes and can grow to a height of over 8 feet tall.

**Poisonous Parts**

Under normal growing conditions, Johnsongrass is safe for animals to consume. However under stress, such as from drought or frost, the wilted plant will produce HCN (prussic acid), which is highly toxic to all animals. The shorter in height the plant is at wilting, the more concentrated the toxin will be in the plant. The toxin is considered to be safely diluted in plants over 30 inches tall. Once the wilting stage is over, the plants are safe for animals to consume.

**Signs of Poisoning**

Symptoms of HCN poisoning from Johnsongrass, include slobbering (frothing), increased respiration, labored breathing, muscle twitching, staggering, bleeding from the mouth and nasal passages, and death.

**Milkweed (*Asclepias sp.*)**
**Description**

Milkweed is a perennial plant named for the milky substance that oozes from cut leaves and stems. Flowers can be white, pink, or orange. Pods will form containing seeds with silk attached to them, which allows them to float in the wind. There are several species of milkweed; the narrow-leafed species are more toxic.

**Poisonous Parts**

All parts of the milkweed plant are toxic.

**Signs of Poisoning**

Within a few hours after ingesting milkweed, symptoms can be bloating, staggers, rapid pulse, gastroenteritis, depression, weakness, seizures, high temperature, labored breathing, and death.

**Mountain Laurel (Kalmia latifolia)**

**Description**

Mountain laurel is a perennial evergreen plant commonly found in wooded, shady areas; this includes along tree lines next to pastures. It is related to azaleas and rhododendrons with leathery, whirled leaves. Flowers can be white or pink in color.

**Poisonous Parts**

All parts of mountain laurel are toxic both in the fresh and dried state. It is toxic to all animals; however horses appear to be least susceptible to it and are rarely poisoned by it, while sheep are the most susceptible to it. This trait has given mountain laurel the nickname of lambkill.

**Signs of Poisoning**

After ingesting mountain laurel, animals can show symptoms of nasal discharge, repeated swallowing, salivation, depression, nausea, bloating, colic, teeth grinding, coma, and death.
Poison Hemlock (*Conium maculatum*)

**Description**

Poison hemlock is a biennial plant that can be found growing along borders of fields, pastures, meadows, roadsides, and waste areas. It can reach heights of over nine feet with branching stems with purple spots. It has leaves that resemble that of carrots. When it flowers in late spring, its white flowers resemble that of Queen Anne’s lace, or yarrow.

**Poisonous Parts**

All parts of poison hemlock are highly toxic to all animals, especially the leaves and seeds.

**Signs of Poisoning**

After ingesting poison hemlock animals will show signs of bloating, nervousness, twitching of muscles, salivation, pupil dilation, weakened heartbeat, cold extremities, paralysis, coma, respiratory failure, and death. An animal can die within a few hours of ingestion of this very toxic plant.

Pokeweed (*Phytolacca americana*)

**Description**

Pokeweed is a perennial plant that can reach nine feet in height. It has branching red-purplish stems with alternate leaves. It produces white clusters of flowers, which will mature into shiny purplish berries.
Poisonous Parts

All parts of the pokeweed plant are toxic, while the fleshly taproot is the most toxic, the berries are minimally toxic.

Signs of Poisoning

After ingesting pokeweed, animals will show signs of salivation, colic, muscular weakness, and diarrhea (often bloody), with these symptoms usually developing within hours of ingestion of moderate amounts of the plant. Respiratory failure, anemia, and ulcerative gastritis are symptoms when higher amounts of pokeweed were ingested.

Purple Mint, Perilla (*Perilla frutescens*)

Description

Purple mint is an annual plant that was introduced as an ornamental and has escaped into the countryside. It has the distinctive square stem of the mint family and can reach two feet in height. The rounded leaves, with coarsely toothed edges will vary in color from light green to red to variegated colors. The white or purple flowers will develop in mid to late August. Fresh purple mint will have a distinctive odor that becomes easily recognizable.

Poisonous Parts

The leaves, stems, and flowers of purple mint are highly toxic.

Signs of Poisoning

After ingesting purple mint, an animal will stand away from others in the herd or flock, usually with its head down; breathing will be very hard and loud, with froth usually visible around the mouth and nose. The resulting pneumonia has a course of one to three days, with many cases resulting in death within 24 hours.

Star of Bethlehem (*Ornithogalum umbellatum*)
Description

Star of Bethlehem is a perennial plant, which grows from, and reproduces from a bulb. It is similar to crocus in appearance. It has thin rubbery leaves and its white, star-shaped flowers are one of the first flowers to be seen in the spring.

Poisonous Parts

All parts of the star of Bethlehem are considered to be toxic, with the bulbs being the most toxic.

Signs of Poisoning

After ingesting Star of Bethlehem, animals will show signs of nausea, vomiting, and abnormal heart rate, shortness of breath, seizures, and death.

White Snakeroot (*Eupatorium rugosum*)

Description

White snakeroot is a perennial plant that can reach a height of four feet and can be found along the edges of pastures next to woodlands and waterways. Its leaves, located opposite each other along the stem, are oval, with sharp toothed margins. The white flowers grow in clusters at the ends of stems and can be seen from mid-summer to mid fall.

Poisonous Parts

The leaves and stems of white snakeroot are moderately toxic.

Signs of Poisoning

Animals that ingest enough of white snakeroot will suffer stress in the liver and kidneys. Symptoms of poisoning are marked trembling of muscles, general body weakness, inability to stand, and constipation. The toxin decreases when the plant is dried. The toxin is accumulative and can be transmitted in milk.
Forage Plants

Alsike Clover (*Trifolium hybridum*)

**Description**

Alsike clover is a common legume that can be found in pastures in this region. The plant can reach a height of two feet with the trifoliate leaves branching out from the stem. The creamy white to pink flowers can be seen all summer.

**Poisonous Parts**

The toxin associated with alsike clover has yet to be identified. For the most part, grazing this plant does not cause any problems, however under the right conditions, it can be toxic. Some reports say that animals grazing pastures with alsike clover with morning dew have resulted in poisonings. Other reports claim that a fungus known as “sooty blotch” can develop on alsike clover making it toxic.

**Signs of Poisoning**

Horses and cattle that have ingested infected alsike clover will suffer from severe photosensitivity that can result in sunburn of exposed skin. Horses will experience colic, depression, and diarrhea. Also known as “big liver disease”, the liver is most often affected, becoming enlarged and causing the horse to lose weight and become jaundiced. Unless the animal is removed from the source of toxin, and receives treatment, death will occur.

Sorghum (*Sorghum sp.*)
**Description**

Sorghum is a tall-growing summer annual grass that is related to corn. It is planted as a cover crop, forage grass, and as a grain crop. Related species include sudangrass, sudex, milo, and the weed johnsongrass. It has coarse (wide) leaves and grows rapidly in warm weather.

**Poisonous Parts**

*Sorghum* sp. under normal conditions it is healthy forage, but when it is wilted from frost, drought, or other cause, it produces HCN, prussic acid. This is highly toxic and can be deadly. Another health threat from *Sorghum* sp. can arise from nitrate toxicity. This rapidly growing grass species can utilize high rates of nitrogen from manure or commercial fertilizer very quickly. However, if a drought occurs, before these plants have been able to assimilate the nitrogen they absorbed, the excess nitrogen in the plants can lead to nitrate toxicity when consumed by animals. All animals can be affected by HCN and nitrate toxicity, but cattle and other ruminants are more susceptible.

**Signs of Poisoning**

Symptoms of HCN poisoning include slobbering (frothing), increased respiration, labored breathing, muscle twitching, staggers, bleeding from the mouth and nasal passages, and death. Symptoms of nitrate toxicity occur within a few hours after ingestion as the nitrate in the plant converts to nitrite in the rumen, which interferes with oxygen absorption. Symptoms include diarrhea, weakness, muscle tremors, excess salivation, blue discoloration of mouth, collapse, coma, and death. Bacterial infections in the gastrointestinal tracts of gastric animals can create the same conditions as in a rumen to transform high nitrate forage into toxic nitrite.

**Tall Fescue (Festuca arundinacea)**

**Description**

Tall fescue can be characterized by its growth in clumps. The stem is round, unlike the flat stem of orchardgrass another clumping type grass found in pastures. Also the edge of the tall fescue leaf will feel rough to the touch, unlike the smooth feel of the orchardgrass leaf blade.

**Poisonous Parts**

Tall fescue is not typically considered a poisonous plant; however during warmer weather endophyte fungus infected tall fescue will produce a toxin that can cause health problems in animals consuming its leaves and
stems. The toxin benefits the grass plant by helping it fend off pests, as a result, the turf industry produces endophyte enhanced tall fescue varieties. There are forage varieties of tall fescue that have a passive endophyte, or are endophyte-free and are safe for animals to consume. Infected tall fescue, when consumed in a feeding program that includes other feed sources, is not a health problem.

**Signs of Poisoning**

Animals that consume only fungus infected tall fescue will have a low rate of weight gain; will have a slight fever, and a rough coat. In extreme cases, a condition known as “fescue foot” occurs, where lameness develops and sometimes gangrene. Females will have problems becoming pregnant and pregnant mares can experience abortions from consuming infected tall fescue.

**Plants Causing Mechanical Injury**

**Burdock** (*Arctium minus*)

**Description**

Burdock is a biennial plant that can reach five to six feet in height. It has large, hairy leaves. It produces brown seed pods with sharp burrs covering them. Burdock is usually found along the edges of uncultivated fields.

**Harmful Parts**

The burs can attach to the eyelashes of horses causing eye damage, such as corneal ulcers. Burs attaching to an animal’s fur can also cause severe trauma. Burs in the fleece of sheep will significantly lower its value.
**Foxtail (Setaria sp.)**

**Description**

Foxtail is a summer annual grass that germinates when the soil warms up in the spring and produces a seed head that resembles a foxtail in mid to late summer. Foxtail is also known as squirrel-tail. Yellow, green, and giant foxtails are the three species that are common to this region. Giant foxtail can be easily identified from the other two species by its much larger seed head.

**Harmful Parts**

The yellow bristles or barbs on the seeds in the seed head are called awns. It is the awns that cause the mechanical injury to primarily horses. The barb-like bristles will penetrate and stick into the animal’s tissue both when chewing and digesting. This can lead to ulcers in the mouth and digestive tract; the awns must be removed before healing can take place. Horses are more susceptible to this, because they have softer mucous membranes than livestock. It is the yellow and green foxtail species that can cause this injury, giant foxtail has softer awns, and therefore is not going to cause any mechanical injury to foraging animals.

**Plants Poisonous to Poultry**

Black Nightshade

Horse Radish

Monkshood

Poison Hemlock

Privet

Raw Potato (chickens cannot digest it, but cooked potatoes are fine.)
## Ornamentals

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References

Burger, Sandra M. Horse Owner’s Field Guide to Toxic Plants. Breakthrough Publications.