

APPENDIX A

POISONOUS PLANTS FOUND IN MINNESOTA

Plant	Conditions of Poisoning	Habitat	Animals	Symptoms of Poisoning
Brackenfern	All season and when dried in hay	Dry, poor soil, open woods, pastures and sandy ridges. Found in northern half of Minnesota.	All grazing animals	Cattle accumulate poisoning over at least 1 month. Clots of blood in feces, swelling of throat region in young animals. Causes aplastic anemia. Unthriftiness, weight loss and weakness. Horses, loss of appetite, "star-gazing" Vitamin B1 deficiency.
Buttercups	Early spring and summer. Not toxic when dried in hay.	Pastures, meadows, streams, and wastelands. Mostly found in the northern half of Minnesota.	All animals, especially cattle	Leaves cause skin blistering minutes to a few hours after eating. Burning irritation in mouth and throat, followed by increased salivation, redness and blistering of the mouth and throat. Swallowing causes abdominal pain, vomiting and diarrhea. Large amounts cause dizziness, delirium, tremors, and convulsions. May also cause kidney damage, excessive urine production, blood in urine followed by a decrease in urine flow. Lactating cattle suffer a drop in milk production and milk is bitter and red tinted. Sheep may collapse suddenly. Pigs may show paralysis. Toxin is an acrid yellow oil, protoanemonin, which can be driven off with drying, such as when cured for hay.
Butterfly Milkweed	Spring	Dry open areas, waste places, prairies, abandoned roads and streambeds. Found throughout Minnesota	All grazing animals	Loss of muscle control, spasms, bloating, increased pulse rate, weak rapid breathing, fever, coma and death. Symptoms occur within one to two days after eating. Toxin is a resinoid, galitoxin. Also contains glucosides and alkaloids.
Choke-cherry	All season, leaves, bark and seeds.	Along streams and open forests, waste areas, fence rows, woods, prairies, orchards, and dry slopes. Found throughout Minnesota	All grazing animals	Slobbering, muscle tremors, increased respiration rate, rapid and weak pulse, convulsions, labored breathing, abdominal pain, depression, paralysis, coma and death. Symptoms noticed in 30 minutes to 1 hour. Caused by glycoside anygdalin which upon hydrolysis yields HCN.
Cocklebur	Spring as seedlings, especially 2-leaf (cotyledon) stage	Lowlands, barnyards, fields, roadsides, poor pastures, wastelands, exposed shores of lakes, ponds and rivers. Found throughout Minnesota.	All animals, especially hogs & cattle	Loss of appetite, depression, uncoordination, twitching, paralysis. Seedlings have caused death in pigs. Caused by hydroquinone. Symptoms noticed a few hours to 2 days after eating. Death may occur in 3 days.
Hoary Alyssum	All season and when dried in hay.	Meadows, pastures, hay fields, waste places, particularly on sandy soils. Found throughout Minnesota.	Horses	Horses experience depression and "stocking up" or swelling of the lower legs, 12 to 24 hours after eating. Symptoms normally subside 2 to 4 days after feed removal. Potential for problems increase if hay or feed contains more than 30% hoary alyssum. Cattle and sheep may reject eating feed containing hoary alyssum.
Horsetail	Spring, summer and when abundant in hay.	Damp, wet places, roadsides, fields, waste places. Sandy, gravelly soils. Found throughout Minnesota.	Sheep Cattle Horses	Loss of condition, excitability, unthriftiness, staggering gait, rapid pulse, difficult breathing, diarrhea and emaciation. Death preceded by convulsions and coma. Decreased milk production in cows. Trembling in sheep. Poisoning accumulative over one month.

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Nightshade family	Summer and fall. Unripe berries especially poisonous.	Crop fields, waste places, fence rows, yards, gardens and open woods. Grows well on loamy or gravelly soils. Found throughout Minnesota.	All animals	Weakness, trembling, labored breathing, nausea, constipation or diarrhea, death. First symptoms may be paralysis of tongue and dilated pupils. Symptoms occur within a few hours or up to 1 to 2 days after eating. Toxin is glycoalkaloids.
Nitrate accumulators	Especially a problem when plants are grown under drought stress and high N fertility.	Pigweeds, lambsquarter, corn, sorghums, and other grasses	All grazing animals	Increased salivation, labored breathing, incoordination, weak pulse, muscle tremors, vomiting, diarrhea, suffocation, death. Symptoms 2 to 6 hours after eating.
Oak	Bud and leafing out stage. Young oak and sprouts. Declines as leaves mature. Acorns.	In most deciduous woods. Found throughout Minnesota	All grazing animals.	Loss of appetite, constipation, dry muzzle, black, pelleted feces, followed by diarrhea with blood and mucus. Frequent urination, weak, rapid pulse. Death may occur a few days to 2 weeks after symptoms start. Caused by gallotannins.
Poison Hemlock	All parts, all season and when dried in hay. Seeds especially poisonous.	Wet, disturbed ground like ditches and field edges. Stream edges and gardens. Found throughout Minnesota.	All animals	Loss of appetite, salivation, bloating, feeble pulse, paralysis, birth defects. Temporary stimulation of nervous system, followed by general depression of the nervous system. Similar symptoms as spotted water hemlock, no convulsions. Death painful because victims remain conscious. Symptoms occur in minutes to a few hours after eating. Death occurs as soon as 15 minutes up to 8 hours after eating. Toxin is a group of nicotene-like alkaloids; most important is coline.
Spotted Water Hemlock	All parts poisonous especially roots. Roots can poison drinking water. All season and when dried in hay.	Damp, open habitats, ditches, wet meadows, swamps, lowlands, and streams. Found throughout Minnesota.	All animals, especially swine	Burning sensation in mouth a few minutes to a few hours after eating. Difficulty in swallowing, foaming at the mouth, excessive salivation, dilation of the pupils. Internal symptoms—nausea, diaphragm contractions, vomiting, diarrhea, violent convulsions. Affects nervous system, resulting in nervousness, muscle twitching, violent teeth clenching, slowing of the heart, weak pulse, visual disturbances, heart failure, loss of consciousness and death. Occurs in 15 minutes to 1 hour. Poison in an unsaturated alcohol, cicutoxin. A piece the size of a walnut can kill a cow.
White Snakeroot	All season and when dried in hay.	Shaded areas, woods, clearings, hardwood pastures and waste places. Moist and fertile soils. Found throughout Minnesota.	All grazing animals	Plant contains tremetone, which causes depression, labored breathing, tremors, nausea and death. Milk sickness in cattle. Tremetol may be transmitted through the milk and butterfat to humans and other animals, causing milk sickness in them. Causes trembles in sheep. Onset of symptoms noticed 2 to 3 days after eating.

To obtain the complete bulletin *Plants Poisonous to Livestock*, AG-FO-5655, contact your local County Extension Office. There may be a cost for this bulletin.