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UNIVERSITY OF ILLINOIS
COLLEGE OF VETERINARY MEDICINE

Poisonous Plant Garden

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Plot 1

Heartleaf Philodendron: *Philodendron hederaceum*

Toxic compound: insoluble calcium oxalate crystals
Symptoms: oral irritation/swelling, drooling, vomiting
Identification: vining. Aerial roots and/or leaves from each node. Leaves are heart-shaped.

Monstera: *Monstera deliciosa*

Toxic compound: insoluble calcium oxalate crystals
Symptoms: oral irritation/swelling, drooling, vomiting
Identification: glossy green, heart-shaped leaves. Develops fenestrations as it matures. Aerial roots and/or leaves from each node.

Kentucky Coffee Tree: *Gymnocladus dioica*

Toxic compound: gymnocladosapponins
Symptoms: excessive salivation, colic, diarrhea, seizures, muscle spasms
Identification: teardrop-shaped leaflets, up to 18 leaflets per stem. Scaly gray bark.

Poison Ivy: *Toxicodendron radicans*

Toxic compound: urushiol oil
Symptoms: fluid filled blisters
Identification: leaves of three with the middle stalk being much longer. New growth is reddish in color.

Plot 2

Caladium: *Caladium bicolor*

Toxic compound: insoluble calcium oxalate crystals
Symptoms: oral irritation/swelling, drooling, vomiting
Identification: angular, heart-shaped leaves. Multiple thin stems originating from a bulb.

Coleus: *Coleus scutellarioides*

Toxic compound: essential oil
Symptoms: vomiting/diarrhea, trouble breathing, mood changes
Identification: brightly colored leaves (different color variations common). Leaves emerge alternately from the stem.

Smart Weed: *Polygonum* spp.

Toxic compound: unknown
Symptoms: watery eyes, light sensitivity, red skin
Identification: tall stalks, multiple elongated leaves per stem. Brown flower emerges from apex.

Umbrella Tree: *Schefflera arboricola*

Toxic compound: terpenoids, saponins, and insoluble oxalates
Symptoms: mild vomiting/diarrhea, seizures
Identification: oval-shaped leaflets, 8 emanating in a circle around a common stalk. "Umbrella appearance"

Plot 3

Oleander: *Nerium oleander*

Toxic compound: cardiac glycoside

Symptoms: heartbeat irregularity, vomiting/diarrhea, lethargy, trouble breathing

Identification: leaves are elliptical with pointed tips. New stalk growth is green and flexible, older stalk is woody and rigid.

Rye Grass: *Lolium perenne*

Toxic compound: contamination with fungus (tremorgenic and/or trichothecene mycotoxins)

Symptoms: muscle tremors, stiffness, or weakness; seizures, dermal or oral irritation/necrosis, vomiting/diarrhea

Identification: grass. Thin blades, light brown/tan spikelets

Azalea: *Rhododendron* spp.

Toxic compound: grayanotoxin

Symptoms: bloat/abdominal pain, salivation, vomiting, anorexia, depression, head pressing, muscle stiffness or tremors, convulsions

Identification: shrub. Dark green waxy leaves. Flowers have 5 white-pink petals, arranged in a star shape.

Plot 4

Brome Grass: *Bromus arizonicus*

Toxic compound: possible ergot fungus contamination containing toxic ergot alkaloids.

Symptoms: prevents thermoregulation causing animal to overheat, rough hair coat, weight loss, lameness, shade/water seeking behaviors

Identification: thin blade, long panicles with multiple spikelets emerging alternatively.

Oxalis (Shamrock): *Oxalis*

Toxic compound: soluble oxalate crystals

Symptoms: lethargy, rumen atony, bloat, muscle stiffness, teeth grinding, seizures, tetany, slow heart rate, hypersalivation, vomiting

Identification: clover-shaped leaves, grows vertically, small yellow flowers

Plot 5

Dumbcane: *Dieffenbachia* spp.

Toxic compound: insoluble calcium oxalate crystals

Symptoms: oral irritation, drooling, vomiting

Identification: oblong, shiny leaves. Older stem is woody, newer growth is green.

Elderberry: *Sambucus*

Toxic compound: cyanide

Symptoms: death within an hour of ingestion if not treated

Identification: oblong leaves with sawtooth edges. Berries are dark purple and grow in bunches.

Hydrangea:

Plot 6

Lambs quarter: *Chenopodium*

Toxic compound: soluble oxalate crystals

Symptoms: lethargy, rumen atony/bloat, muscle stiffness or spasms, teeth grinding, seizures, slow heart rate, hypersalivation, vomiting

Identification: pale green, fuzzy leaves. Emerge in a rosette pattern.

Sago Palm: *Cycas* spp.

Toxic compound: cycasin, BMAA, and unknown CNS toxin

Symptoms:

Dogs: vomiting, acute liver failure, depression, anorexia, seizures

Sheep: chronic liver failure

Cattle: neurologic signs

Identification: resembles a palm tree but in smaller scale. Leaves grow up to 4 feet long, leaflets are stiff and dark green.

Taro (Elephant Ear): *Alocasia*

antiquorum or *colocasia*

Toxic compound: soluble oxalate crystals

Symptoms: lethargy, rumen atony, bloat, muscle stiffness or spasms, teeth grinding, seizures, slow heart rate, hypersalivation, vomiting

Identification: elongated, heart-shaped leaves. Multiple stems emerge from one bulb.

Purple Foxglove: *Digitalis purpurea*

Toxic compound: cardiac glycoside

Symptoms: heart rate irregularities, vomiting/diarrhea, lethargy, trouble breathing

Identification: ovate leaves, growing in a rosette pattern. Flowers are bell-shaped, with a purple exterior and splotchy interior.

Plot 7

Monkshood (Wolf's Bane):

Aconitum

Toxic compound: monobasic diterpenoid alkaloids

Symptoms: hypersalivation, bloat, muscle weakness, staggering gait, and muscle paralysis

Identification: palmate leaves with sawtooth edges. Flowers are blue and bell-shaped.

Larkspur: *Delphinium* spp

Toxic compound: diterpenoid alkaloids

Symptoms: constipation, bloat, oral irritation, muscle tremors/stiffness, weakness, convulsions, death

Identification: very similar in appearance to Monkshood, but flowers are star-shaped and blue/purple.

Wild Parsnip: *Pastinaca sativa*

Toxic compound: furanocoumarins

Symptoms: watery eyes, red or irritated skin

Identification: hollow stems, can grow up to 5 feet tall. 3-5 yellow-green leaflets per stem.

Prairie Groundsel/Ragwort:

Packera plattensis

Toxic compound: pyrrolizidine alkaloid

Symptoms: watery eyes, light sensitivity, red or irritated skin

Identification: jagged edges leaves grow in flat clusters. Flowers are small, appear similar to daisies with yellow leaves and an orange center.

Plot 8

Cocklebur: *Xanthium strumarium*

Toxic compound: carboxyatractyloside

Symptoms: acute liver failure, anorexia, depression, weakness, muscle stiffness/spasms, death

Identification: triangular leaves with sawtooth edges. New burs are green and soft, old burs are brown and woody.

Castor Bean: *Ricinus communis*

Toxic compound: lectin called ricin

Symptoms: oral irritation, vomiting/diarrhea, kidney failure, convulsions, trouble breathing

Identification: palmate, reddish-purple leaves. Burs are red.

Bouncing Bet (Soapwort):

Saponaria officinalis

Toxic compound: saponins (glycosides)

Symptoms: oral irritation, nausea, vomiting/diarrhea, heart rate irregularities, convulsions, paralysis, coma, death

Identification: green, ovate leaves growing in a rosette pattern. Flowers are white and star-shaped.

Plot 9

Horse Tail: *Equisetum* spp.

Toxic compound: thiaminase

Symptoms: drooling, anorexia, weight loss, depression, muscle stiffness/twitching, seizing, and neurological

Identification: thin, yellow-green stalks. Segmented growth, with a brown ring separating them.

Pokeweed: *Phytolacca americana*

Toxic compound: triterpenoid saponin and oxalates

Symptoms: GI signs, vomiting/diarrhea, inappetence, salivation, bloat, colic

Identification: ovate leaves with pointed apex. Berries are dark purple, and grow in clusters around a singular stem.

Japanese Privet: *Ligustrum ovalifolium*

Toxic compound: terpenoid glycosides

Symptoms: GI upset, vomiting/diarrhea, loss of appetite, fast heart rate, muscle weakness, incoordination

Identification: Shrub. Leaves are ovate and glossy, and emerge yellow-green and deepen in color as they mature.

Plot 10

Bull Nettle: *Cnidoscolus texanus*

Toxic compound: histamine

Symptoms: contact with skin will cause redness, swelling, and itching. Ingestion causes salivation, vomiting/diarrhea, trouble breathing, muscle twitching/stiffness.

Identification: leaves are divided into 3 lobes, and have a distinct sawtooth edge. Leaf surface appears dull or fuzzy.

Jimsonweed: *Datura stramonium*

Toxic compound: tropane alkaloids

Symptoms: fast heart rate, urinary retention, dry mouth, behavioral changes (delirium, excitation), and seizures

Identification: football-shaped leaves, with wavy-tooth edges. Emerge alternately along the stem.

Bittersweet Nightshade: *Solanum dulcamara*

Toxic compound: solanidine

Symptoms: severe GI irritation, hemorrhage salivation, watery eyes, excessive urination, vomiting/diarrhea, trouble breathing

Identification: ovate leaves with a pointed apex; often have 2 distinct lobes at the base. Star-shaped purple flowers.

Belladonna: *Atropa belladonna*

Toxic compound: tropane alkaloids

Symptoms: fast heart rate, urinary retention, dry mouth, pupil dilation, delirium, excitation, and seizures

Identification: similar appearance to Bittersweet Nightshade, but flowers are bell-shaped.

Plot 11

Jack-in-the-Pulpit: *Arisaema triphyllum*

Toxic compound: insoluble calcium oxalate crystals

Symptoms: oral irritation/swelling, drooling, vomiting

Identification: leaves are distinctly separated into 3 lobes; two lobes are smaller and emerge from the base of the leaf.

Red Maple: *Acer rubrum*

Toxic compound: gallic acid and gallotannins

Symptoms: depression, anorexia, blue or yellow mucous membranes, brown urine, trouble breathing, fast heart rate, death

Identification: Tree. leaves have 3 major lobes, separated by V-shaped notches, with sawtooth edges.

Bloodroot: *Sanguinaria canadensis*

Toxic compound: sanguinarine

Symptoms: nausea, vomiting/diarrhea, dilated pupils, weakness, fainting/collapse

Identification: palmate-shaped leaf with rounded edges, lobated into a horseshoe shape. Stems emerge from an underground tuber.

Mayapple: *Podophyllum peltatum*

Toxic compound: podophyllotoxin (glycoside)

Symptoms: vomiting/diarrhea, hypersalivation, skin irritation, lethargy

Identification: similar to Bloodroot, but lobes extend radially.

Japanese Yew: *Taxus* spp.

Toxic compound: taxines and alkaloids

Symptoms: dizziness, dry mouth, excitement, difficulty breathing, trembling, vomiting/diarrhea, cardiac failure, death

Identification: Shrub. Pine needles.

Plot 12

Morning Glory: *Convolvulaceae*

Toxic compound: lysergic alkaloids

Symptoms: vomiting/diarrhea, lethargy, liver failure, muscle stiffness/tremors, dilated pupils, loss of appetite

Identification: thin, vining stems that climb upwards. Heart-shaped leaves. Flowers are trumpet-shaped and come in a variety of colors.

Bracken Fern: *Pteridium*

Toxic compound:thiaminase

Symptoms: depression, muscle stiffness/twitching, seizing, and neurological signs

Identification: fern. Large, highly-divided leaves.

Red Oak: *Quercus rubra*

Toxic compound:tannins

Symptoms: bloody diarrhea, red urine

Identification: Tree. Lobated leaves with jagged edges.

White Snakeroot: *Ageratina altissima*

Toxic compound: tremetol

Symptoms: muscle stiffness/tremors, recumbency

Horses: profuse sweating, fast heart/respiratory rates, heartbeat irregularities

Cattle: decreased heart/respiratory rates, lethargy

Identification: elongated heart-shaped leaves with sawtooth edges. Flowers are small, white, and emerge in clusters.

Lily of the Valley: *Convallaria majalis*

Toxic compound: cardiac glycoside

Symptoms: heartbeat irregularities, vomiting/diarrhea, lethargy, trouble breathing

Identification: leaves are elongated and pointed. Flowers are white and bell-shaped.

Plot 13

Wild Chives: *Allium* spp.

Toxic compound: propyl disulfide

Symptoms: inappetence, muscle stiffness, lethargy, recumbency, fast heart/respiratory rates, trouble breathing, pale mucous membranes

Identification: thin, rubbery stalks grow in clusters. Distinct smell of onions when injured.

Other: other *allium* spp. include onions, garlic, leeks, and shallots.

Ground Cherry: *Physalis* spp.

Toxic compound: solanidine

Symptoms: severe GI irritation, salivation, watery eyes, urination, vomiting/diarrhea, trouble breathing.

Identification: leaves emerge alternately, and have pointed tips. Fruits are yellow-green and spherical.

Other - other plants that contain solanidine include potato plants, green potatoes, and tomatoes.

Plot 14

Curly Dock: *Rumex*

Toxic compound: soluble oxalate crystals

Symptoms: lethargy, rumen atony, bloat, muscle stiffness/spasms, teeth grinding, seizures, slow heart rate, hypersalivation, vomiting

Identification: thin, pointed leaves, with wavy or cult edges. Flower stalks are tall and brown.

Buttercup: *Ranunculus* spp.

Toxic compound: protoanemonin formed from ranunculin

Symptoms: blistering, swelling, or redness of skin/mouth, muscle weakness/tremors, vomiting/diarrhea, colic, seizures, paralysis

Identification: small, palmate leaves with sawtooth edges. Leaves emerge from a common vine. Flowers are star-shaped and yellow.

Broadleaf Milkweed: *Asclepias syriaca*

Toxic compound: cardiac glycoside

Symptoms: heartbeat irregularities, vomiting/diarrhea, lethargy, trouble breathing

Identification: broad, ovate leaves. Fruits are green, teardrop-shaped pods.

Holly: *Ilex* spp.

Toxic compound: ilicin (type of triterpenoid saponin)

Symptoms: GI irritation, vomiting/diarrhea, inappetence, salivation, bloat, colic

Identification: shrub. Small, waxy leaves with sawtooth edges. Berries are circular, red, and grow in clusters.

Plot 15

Lantana: *Lantana* spp.

Toxic compound: lantadene A, B, and C

Symptoms:

Acute: depression, GI signs, weakness, yellow or blue mucous membranes, difficulty breathing, dilated pupils, muscle stiffness, coma

Chronic: cracking of skin, light sensitivity, clouding of cornea

Identification: leaves have a pointed apex and sawtooth edges, with distinct grooved veining. Flowers are red or orange, and emerge in a dome-shaped cluster.

Red Root Pigweed: *Amaranthus retroflexus*

Toxic compound: soluble oxalates and nitrates

Symptoms: decreased rumen activity, abdominal distension, muscle weakness/tremors/stiffness, recumbency

Identification: ovate leaves with a pointed apex and prominent veining. Flowers are yellow-green and emerge in clusters to form a conical-shape.

Prairie Dogbane: *Apocynum cannabinum*

Toxic compound: cardiac glycosides (cynarin, apocynin)

Symptoms: abdominal pain, bloody diarrhea, vomiting

Identification: red stems. Broad, elliptical leaves with white veining. Leaves can emerge directly from the stem or on a branching stem.

St. John's Wort: *Hypericum perforatum*

Toxic compound: hypericin

Symptoms: watery eyes, light sensitivity, red or irritated skin

Identification: small, oblong leaves that emerge from the stem alternately. Flowers are star-shaped, yellow, and have black speckles on the petals.

Plot 16

Rhubarb: *Rrheum rhabarbarum*

Toxic compound: soluble oxalate crystals

Symptoms: lethargy, rumen atony, bloat, muscle stiffness/spasms, teeth grinding, seizures, slow heart rate, hypersalivation, vomiting

Identification: heart-shaped leaves. Mature stems are red, while younger stems are green.

Lupine: *Lupinus* spp.

Toxic compound: quinolizidine alkaloids and anagryrine (teratogenic alkaloid)

Symptoms: fetal skeletal deformities, acute respiratory failure, lupinosis (liver disease caused by fungus that grows on the pods or seeds)

Identification: leaves are segmented into oblong lobes that emerge radially from the petiole. Flowers are light blue to purple, and emerge from a common stem into a conical shape.

Plot 17

Hyacinth: *Hyacinth orientalis*

Toxic compound: allergenic lactones and calcium oxalate crystals

Symptoms: vomiting/diarrhea (bloody), oral irritation, depression, tremors, hypersalivation

Identification: Bell-shaped flowers densely packed to form a conical shape. Variety of colors.

Daffodil: *Narcissus* spp.

Toxic compound: lycorine (alkaloid) and calcium oxalate crystals

Symptoms: vomiting/diarrhea (bloody), oral irritation, depression, tremors, hypersalivation, seizures

Identification: flowers have 6 white or yellow petals, surrounding a center yellow cup-like structure.

Chokecherry & Wild Black

Cherry: *Prunus virginiana* & *P. serotina*

Toxic compound: Cyanogenic glycosides (prunasin and amygdalin)

Symptoms: bright red mucous membranes, trouble breathing

Identification: tree. Chokecherry has rounder, more ovate leaves; Wild Black Cherry has elongated, tapered leaves.

Day Lily: *Hemerocallis* spp.

Toxic compound: unknown water soluble toxin

Symptoms: kidney failure, vomiting, depression, anorexia, dehydration,

Identification: strap-like leaves clustered around a stem. Flowers are orange, have 6 petals, and a yellow center.

Other - Easter, tiger, rubrum, and Japanese show lilies are also toxic. Peace and Calla lilies contain insoluble calcium oxalate crystals

Plot 18

Buckthorn: *Rhamnus cathartica*

Toxic compound: anthraquinone and emodin

Symptoms: neurological symptoms, abdominal cramping/discomfort, laxative effect,

Identification: tree. Elliptical leaflets branch oppositely off a common stem.

Rubber Plant: *Ficus elastica*

Toxic compound: proteolytic enzyme ficin and psoralen ficusin

Symptoms: skin irritation, oral irritation, drooling, vomiting, depression

Identification: stiff, dark, glossy, ovate leaves.

Plot 19

White/Yellow Sweet Clover:

Melilotus officinalis & alba

Toxic compound: coumarins

Symptoms: hemorrhage

Identification: oblong leaflet in sets of 3 branch off a common stem. Flowers emerge in a conical shape (white vs yellow)

Alsike Clover: *Trifolium hybridum*

Toxic compound: unknown

Symptoms: watery eyes, light sensitivity, red or irritated skin, skin sloughing

Identification: leaflets are football-shaped with sawtooth edges. Flowers are spherical, with white-pink petals.

Red Clover: *Trifolium pratense*

Toxic compound: *rhizoctonia leguminicola* fungus that contains slaframine

Symptoms: severe salivation (gallons)

Identification: leaflets are oblong, and have a white V-shaped marking. Flowers are spherical with pink petals.

Field Pennycress: *Thlaspi arvense*

Toxic compound: isothiocyanates

Symptoms: Colic, diarrhea, skin irritation

Identification: leaves are small and oblong. Seed pods are circular and emerge directly off the top of the stem.

Crown Vetch: *Securigera varia*

Toxic compound: beta-nitropropionic acid (3-NPA)

Symptoms: decreased appetite, incoordination

Identification: vining. Ovate leaves appear oppositely in sets of 2.

Plot 20

Catnip: *Nepeta cataria*

Toxic compound: nepetalactone

Symptoms: vomiting/diarrhea, GI upset, and lethargy

Identification: grayish-green, heart-shaped leaves with sawtooth edges. Fuzzy stem.

Poison Hemlock: *Conium maculatum*

Toxic compound: nicotinic alkaloids

Symptoms: muscular weakness/tremors/stiffness, drooling, fast heart rate, dilated pupils, frequent urination/defecation, death

Identification: fern-like, jagged leaves. Stems emerge from underground tuber. Small purple spots at base of stem

Plot 21

Kale: *Brassica oleracea var. sabellica*

Toxic compound: tryptophan

Symptoms: trouble breathing, fast breathing

Identification: pale green, heart-shaped leaves with ruffled or jagged edges.

Cabbage: *Brassica oleracea var. capitata*

Toxic compound: high nitrate content

Symptoms: weakness, exercise intolerance, trouble breathing, fast heart rate, grey mucous membranes, convulsions, death

Identification: round leaves emerging in a rosette pattern, often with a ball-like clump of leaves in the center.

Broccoli: *Brassica oleraceae*

Toxic compound: alucosinates and breakdown products

Symptoms: vomiting/diarrhea, jaundice, slowed growth

Identification: elongated leaves with ruffled or wavy edges. Edible portion emerges at the top of the stem.

Tomatoes: *Solanum lycopersicum*

Toxic compound: solanidine

Symptoms: severe GI/oral irritation, salivation, watery eyes, urination, trouble breathing

Identification: pointed leaves with serrated edges. Fruit emerge at any length of the stem.

Other: ripe red tomatoes are safe, but green tomatoes and other parts of the plant are poisonous.

Corn: *Zea mays*

Toxic compound: *Aspergillus* containing aflatoxins

Symptoms: reduced weight gain, rough hair coat, jaundice, anorexia, depression, fluid-filled abdomen

Identification: strap-like leaves. Edible portion emerges at any length of the stem, and is covered by a green husk.

Plot 22

English Ivy: *Hedera helix*

Toxic compound: hederagenin (type of triterpenoid saponin)

Symptoms: severe GI upset, vomiting/diarrhea, inappetence, salivation, bloat, colic

Identification: vining. Glossy green heart-shaped leaves with white veining. Vines are often woody.

Horse Chestnut Tree: *Aesculus*

hippocastanum

Toxic compound: aesculin (glycosidic saponin)

Symptoms: vomiting/diarrhea, nausea, muscle tremors, respiratory paralysis, bloat, death

Identification: leaves have 7 leaflets that form a palmate shape. Seeds are surrounded by a spiky green covering.

Buckeye Tree: *Aesculus glabra*

Toxic compound: aesculin (glycosidic saponin)

Symptoms: inflamed mucous membranes, nervousness, twitching, weakness, vomiting/diarrhea

Identification: 5-7 leaflets arranged in a semi-circle. Seeds are surrounded by a yellow-green covering.

Creeping Charlie: *Glechoma hederacea*

Toxic compound: unknown

Symptoms: colic, sweating, excess salivation, death

Identification: vining. Leaves are heart-shaped with wavy edges.