Selected Site Location

 Cloverdale, Indiana
Site Inventory

I-70
Monon Railroad
Nearby commercial area
  Putnam Plastics
  Stardust Hills
Large open fields
Dense wooded areas
Existing ponds
Dirt lanes
Existing Barn
Program Features

- Public Competition
- Private Boarding
- Support Facilities
Public Competition

- 2 200*300 Arenas
- Seating/ Vendors
- Announcer’s stand
- Warm up arena
- 4-6 50 stall horse barns
- 1 cattle barn
- Chute space
- 300 Competitor parking
- 150 Visitor parking
Boarding Facility

- 2 - 15 stall boarder's barns
- Trainer's residence
- 5 - 75'125 separate runs
- 50 acres pasture
- 15'20 field shed
- 150'200 arena
- 40 parking spaces
- Trails
Support Facilities

- Entry gate
- Show office
  - Entry Office
  - Tack shop
  - Restaurant
  - Veterinarian/Farrier
  - Competitor’s Lounge
- Information Boards
- Display Wall
- Caretaker’s residence
- Machine shed
Ideal Relationships

Competition Facility

Boarder’s Facility
Site Analysis

Opportunities

- open areas - minimal earth work required
- topography - natural changes provide variety of spaces
- vegetation - variety of spaces for recreation & training
- 200 acres - large enough to accommodate growth of the facility
- I-70 and Cloverdale - easily accessible for regional users
Site Analysis

Constraints

- location - near commercial & residential areas
- I-70 - limited locations of entry
- ponds & dams - need structural work to support high traffic volumes
- topography - breaks site into several sections
- monon railroad - noise
Concept 1
Working Stock Horse Competition Facility

- Primary focus on competition facility
- Developed behind the ponds to provide large buffer for Stardust Hills
- Elements clustered in areas of use
- Majority of site left undeveloped for stock horse training purposes
- Boarder’s facility separated from more public areas
Concept 2
Cloverdale Horse Farm

- Horse farm with competition facilities
- Boarder’s barn used as buffer for residential development
- Ponds used for visual effect on entry and as division of function
- Elements spread out to create small pockets of activity
- Majority of site left undeveloped for training of working horses
Masterplan

- Includes three distinct areas of development
  - Main Show Arena
  - Boarding Facility
  - Working Arena
Masterplan
Main Show Arena

- 200 * 300 arena
  - seating for 3000
  - 20 commercial spaces
  - 100 * 150 warmup arena

- 8 show barns
  - individual court yards
  - fenced enclosure
  - loading zone

- Equipment shed
- Parking
  - cluster parking
Masterplan
Main Show Arena

Section of Arenas

Exhibitors can practice in the warm up arena or wait in the open space outside the arena for their class.

barns  warmup arena  drive  arena
Masterplan
Main Show Arena

View of barns surrounding arena

Open space

Section of area outside warm up arena
Masterplan
Boarding Facility

- Permanent trainer
- 3 barns
  - 1-30 stall boarder barn
  - 2 show barns
- Turn out options
  - 4 individual turnout paddocks
  - 50 acres graze
  - Breaking pen
- Fenced barn lot
  - Access to all other facility features
- Parking
  - Paved access
  - Cluster parking
Masterplan Boarding Facility

Windmills used to fill tanks to water the grazing stock kept on the facility.

Section of riding trail on west half of the facility.

Cattle gate that allows access without the inconvenience of a traditional gate.
Masterplan
Boarding Facility

- View of barnyard in boarding facility
  - Each cluster of barns creates an individual barnyard
  - Trees and non-toxic plantings within the area provide a feeling of comfort
  - Each barnyard is fenced to maintain an equestrian space
  - Parking is located on the perimeter of each cluster
Masterplan
Working Arena

- 200 * 250 arena
  - Attached cattle chutes
  - 3 show barns
  - Seating for 1500
- Open Exhibition space
  - Demonstrations
  - Commercial displays
- Parking
  - Paved access
  - Cluster parking
The world never looks better than between the ears of a good horse

-anonymous
Appendix B: Toxic Plants
Toxic Plants

The following is a list of the toxic plants (albeit an incomplete list) that can be found growing wild in the region (central Indiana) in which this facility is to be constructed. This list is intended to be used as a reference in the development of the planting plan for the facility. All of the plants listed here affect horses and cattle, while some affect other animals as well. Such as herd dogs or other pets that might be brought into the facility. They are listed in order of their toxicity, highest to lowest.
Extremely Toxic WHITE SNAKEROOT, WHITE SANICLE, RICHWEED

Eupatorium rugosum
(daisy family)

TOXICITY RATING: High. White snakeroot will be eaten, especially in the late summer and fall, and is often lethal.

ANIMALS AFFECTED: Cattle, horse, goat, sheep, swine. All grazing animals can be affected by white snakeroot, and the toxin passes in the milk, so nursing animals and humans are also at risk.

DANGEROUS PARTS OF PLANT: Leaves and stems, possibly flowers. Roots seem to have a lower toxicity.

CLASS OF SIGNS: Trembling, sweating, depression, stiff gait, heart failure, jaundice, toxic milk, death (may be sudden).

PLANT DESCRIPTION: White snakeroot (fig. 22) grows from fibrous, matted roots as a smooth, erect, perennial herb 1 to 3 feet high with opposite, oval, pointed-tipped leaves with sharply-toothed edges. The upper surfaces of the leaves are dull, the lower surfaces shiny with three prominent main veins. Small white flowers in compound terminal clusters are conspicuous in late summer. White snakeroot is found in woods, damp and shady pastures, and occasionally in thickets and clearings (especially at the edges of wooded areas) in all 92 Indiana counties.
GROUNDSEL, RAGWORT

Senecio spp.
(daisy family)

TOXICITY RATING: High. Senecio is very toxic both fresh and in hay, affected animals often die.

ANIMALS AFFECTED: All grazing animals may be affected, but horses and cattle are particularly susceptible. Young, growing animals are more susceptible than mature animals, and fetuses may be affected in utero.

DANGEROUS PARTS OF PLANT: All above ground parts, with higher concentrations in the seeds.

CLASS OF SIGNS: "Poor doer", weight loss, unthriftness, poor hair coat, anorexia, behavioral changes, sunscald, liver failure, jaundice, death.

PLANT DESCRIPTION: There are several species of ragworts. In Indiana they are perennial herbs about 1 foot tall (rarely to 3 feet tall). Basal leaves are spoon-shaped and stem leaves are alternate and pinnately cut into narrow segments. At the top of the plant are clusters of yellow composite (daisy-like) flowers with yellow ray petals. Most ragworts grow along roadsides, in pastures, and in wet or waste areas. Senecio aureus (golden ragwort) blooms in early spring in woodlands or meadows statewide (fig. 24).
COMMON COCKLEBUR

Xanthium strumarium
(daisy family)

TOxicity Rating: High.

Animals Affected: All animals may be affected. Cattle, swine, sheep, and poultry are more at risk than horses and pets.

Dangerous Parts of Plant: The seeds and seedlings contain the highest quantity of toxin, yet the whole plant can be considered toxic. The seed burs can cause mechanical damage.

Class of Signs: Gastrointestinal irritation, weakness, breathing difficulty, behavioral changes, cardiac abnormalities, death.

Plant Description: The angled, sometimes red-or black-spotted stems of cocklebur grow 1 to 3 feet high. Leaves of this many-branched annual are alternate, hairy, rough-textured (sandpaper-like), somewhat heart-shaped, toothed, and lobed (fig. 32). Flowers are inconspicuous with male flowers in terminal spikes, female flowers in clusters in the leaf axils. The fruit is a hard, oval, prickly bur about 3/4 inch long containing two seeds (fig. 32A). Because seeds germinate best after being soaked in water, the plants are usually found along the shores of ponds where water has receded. The edges of farm ponds may be lush with young cockleburs. Seedlings have small strap-shaped leaves 1/4 inch wide by 11/4 inches long (fig. 32B). They also pop up in gardens, fields, roadsides, and other areas of nearly full sunlight.
REDROOT PIGWEED

Amaranthus retroflexus
(pigweed family)

TOXICITY RATING: High. The plant is quite common and very toxic.

ANIMALS AFFECTED: Cattle and swine are the animals most likely to be affected; goats and sheep can also be poisoned.

DANGEROUS PARTS OF PLANT: Leaves, stems, roots.

CLASS OF SIGNS: Breathing problems, trembling, weakness, abortions, coma, death.

PLANT DESCRIPTION: Redroot pigweed (fig. 33) is a large (to 5 feet tall), coarse, annual with red stems and simple, egg-shaped, wavy-margined, alternate leaves. The green, inconspicuous flowers are borne in short, compact clusters along with green spines. Seeds are small, shiny, and black. Fields, barnyards, and waste areas are the favorite habitats of this weed.

JIMSONWEED, THORNAPPLE

Datura stramonium
(nightshade family)
TOXICITY RATING: High. The plant and seeds are extremely toxic, this plant is abused as a hallucinogen in humans, and deaths in humans and animals have been reported.

ANIMALS AFFECTED: All animals (including pets and poultry) may be affected.

DANGEROUS PARTS OF PLANT: All parts, especially seeds.

CLASS OF SIGNS: Dilated pupils, agitation, trembling, delirium, may appear to be experiencing hallucinations, convulsions (which may be violent), coma, and possible death. Abortions and birth defects have also been reported.

PLANT DESCRIPTION: This stout, coarse annual (fig. 36) grows to 5 feet tall with strongly-scented, coarsely toothed, green or purplish alternate leaves. The large trumpet-shaped flowers are white or purplish and are formed singly at the forks in the stems. The fruits are hard, spiny capsules (fig. 36) which split open along four lines at maturity to release numerous tiny black seeds. Jimsonweed commonly grows in cultivated fields, waste areas, barnyards, abandoned pastures, roadsides, and feedlots. Other Datura species (angel’s-trumpets) are grown as ornamentals.
JOHNSONGRASS

Sorghum halepense
(grass family)

TOXICITY RATING: Moderate to high.

ANIMALS AFFECTED: All types, especially ruminants.

DANGEROUS PARTS OF PLANTS: Leaves and stems, especially young plants.

CLASS OF SIGNS: Breathing problems, staggering, severe anxiety, convulsions, coma, death (may be very sudden).

PLANT DESCRIPTION: Johnsongrass (fig. 43), a coarse perennial grass, produces large, scaly rootstocks and grows in dense stands up to 6 feet high. Seed heads are large and loose. This plant grows commonly in the fields, fencerows, and ditch banks of the southern part of the state and is rapidly spreading northward. Once grown for dike stabilization or for hay, it is now classified as a "noxious" weed.

WILD BLACK CHERRY

Prunus serotina
(rose family)
TOXICITY RATING: High.

ANIMALS AFFECTED: All animals may be affected. Ruminants (cattle, sheep, goats, deer) are more at risk than monogastric animals (dogs, cats, pigs, horses) and birds.

DANGEROUS PARTS OF PLANT: Damaged leaves pose the greatest risk. All parts are potentially toxic.

CLASS OF SIGNS: Anxiety, breathing problems, staggering, convulsions, collapse, death (which may be sudden).

PLANT DESCRIPTION: This cherry may grow as a tree or shrub. Bark of young branches and twigs is scaly and reddish-brown with prominent cross-marks ("lenticels"). Leaves (fig. 46) are alternate, simple, elliptic-pointed, leathery in texture, and finely toothed on the margins. Flowers are showy, fragrant, and white, hang in drooping clusters, and produce dark-red to black cherry fruits (fig. 46A). The wild black cherry commonly grows in fence rows, roadside thickets, and rich open woods.
ENGLISH YEW JAPANESE YEW

Taxus baccata Taxus cuspidata
(yew family)
TOXICITY RATING: Extremely toxic, death is likely.

ANIMALS AFFECTED: All animals (livestock, pets and birds).

PLANT DESCRIPTION: Several species of yew are planted as ornamental shrubs or hedges. They are woody perennials with flat 1/2-1 inch long evergreen leaves (fig. 49) lighter green on the underside and broader than pine needles. The "berry" (technically called an aril) is grape-sized, juicy, and bright scarlet, with a hole in the end which makes it look cup-like.

RED MAPLE

Acer rubrum
(maple family)
TOXICITY RATING: High, death is common.

ANIMALS AFFECTED: Horses only.

DANGEROUS PARTS OF PLANT: Leaves, especially when fallen, damaged, or wilted.
CLASS OF SYMPTOMS: Breathing difficulties, jaundice, dark brown urine, death.

PLANT DESCRIPTION: Red maple is a tree of medium size, occurring naturally or planted as an ornamental. Young bark is a smooth gray color, older bark is dark and broken. Leaves are 3 to 5 lobed, with shallow notches between lobes. Underside of leaves are white. Leaves are green during the growing season and turn red in the fall. Buds, twigs, flowers, and petioles are red. The sap is not milky.
LUPINE, BLUEBONNET, QUAKER-BONNETS

Lupinus perennis (wild)
Lupinus polyphyllus (cultivated)
(pea family)

TOXICITY RATING: Low to moderate in Indiana. In the western rangelands, where lupine grows plentifully, the risk of toxicosis would be high. Different species of lupine have different toxicities. According to reports, L. leucophyllus (velvet or wooly-leafed lupine) is the most toxic and should never be grazed since all stages of plant growth are toxic.

ANIMALS AFFECTED: Sheep are primarily affected, but all animals are susceptible.

DANGEROUS PARTS OF PLANT: All parts, especially pods with seeds.

PLANT DESCRIPTION: Lupines (fig. 6) are herbaceous perennials grown in gardens or found wild along roadsides, in fields, and in open woods. Wild lupines are common only in the prairie and lake counties of Indiana. In the rangelands of the West, they are a leading cause of livestock poisoning. Several stems often grow from one creeping root and reach 12 to 30 inches in height. The leaves are alternate and palmately compound with 7 to 11 spear-tip-shaped, softly hairy segments. Elongate spikes of blue, purple, white, magenta, or bicor-ored pea-like flowers in early summer are followed by 1- to 2-inch, fuzzy, pea-like pods.
CULTIVATED OATS

Avena sativa
(grass family)

TOXICITY RATING: Moderate.

ANIMALS AFFECTED: Cattle, swine, sheep, goats, poultry, horses.

DANGEROUS PARTS OF PLANT: All parts.

CLASS OF SIGNS: Breathing difficulty, skin irritation, paralysis, convulsions, death (rarely).

PLANT DESCRIPTION: This widely cultivated annual grass has escaped into waste places. The plants grow up together in small tufts. The fruiting structure is a terminal, loose panicle (fig. 13).

GREEN FALSEHELLEBORE, WHITE HELLEBORE, INDIAN POKE

Veratrum woodii
(lily family)

TOXICITY RATING: Moderate to high, depending on individual circumstance.
ANIMALS AFFECTED: Sheep are affected primarily, but chickens and cattle may also be at risk.

DANGEROUS PARTS OF PLANT: All parts, especially roots.

CLASS OF SIGNS: Gastrointestinal irritation, salivating, weakness, trembling, heart problems,

breathing difficulties, birth defects.

PLANT DESCRIPTION: These perennial herbaceous plants (fig. 25) have stout, erect, unbranched, 1-8 feet tall stems arising from short, thick rootstocks. There are clusters of large, broad, alternate leaves that to some people resemble garden cabbage or skunk cabbage. These leaves are parallel-veined and pleated like a skirt. Green to greenish-white, inconspicuous flowers occur in large terminal clusters. Veratrum woodii grows in woods or on hillsides and bluffs, most commonly in the central and southern parts of the state.
YELLOW SWEETCLOVER WHITE SWEETCLOVER

Melilotus officinalis Melilotus alba
(pea family)

TOXICITY RATING: Moderate.

ANIMALS AFFECTED: All animals that eat affected hay may be poisoned.

DANGEROUS PARTS OF PLANTS: All above-ground parts when present in moldy hay.

CLASS OF SIGNS: Bruising, spontaneous bleeding.

PLANT DESCRIPTION: These coarse biennial herbs (fig. 16) have alternate, three-parted, toothed leaves and bear white or yellow flowers in long, slender, spike-like clusters in the leaf axils. The numerous small, pea-like, white or yellow flowers fall soon after blooming. Pods are small, egg-shaped to round, inflated, and contain 1 to 4 seeds. Sweetclover grows along roadsides, fence rows, and in old fields. It is cultivated as a forage crop and soil builder. The plants favor alkaline or calcareous soils.

TOBACCO

Nicotiana spp.
(nightshade family)

TOXICITY RATING: Low to moderate, depending on the situation.

ANIMALS AFFECTED: All animals may be affected, but pets in contact with tobacco products are at risk as are pigs allowed to forage on harvested tobacco fields.

DANGEROUS PARTS OF PLANT: Leaves.

CLASS OF SIGNS: Gastrointestinal irritation, trembling, staggering, weakness, breathing problems, heart problems, collapse, birth defects, death.

PLANT DESCRIPTION: These tall annual plants grow from fibrous roots and produce large, hairy leaves and terminal clusters of tubular, 2 inches long, white, red, lavender, or yellow flowers on short stalks. Many-seeded capsules may appear in late summer. The tobacco species with colorful flowers (fig. 17) are grown as garden ornamentals. Those with yellow-green flowers and the largest leaves are an economic crop in the southern counties of the state.
DWARF LARKSPUR, STAGGERWEED, POISON WEED, CULTIVATED LARKSPUR

Delphinium ajacis
(buttercup family)

TOXICITY RATING: Moderate for Indiana. These plants are a more serious threat in the western ranges.

ANIMALS AFFECTED: Cattle are the primary animals affected; toxin can also affect other ruminants as well as horses.

DANGEROUS PARTS OF PLANT: All parts, especially seeds and young leaves.

CLASS OF SIGNS: Nervousness, incoordination, staggering, salivating, bloating, abnormal heart beat, breathing difficulty, paralysis, convulsions, death.

PLANT DESCRIPTION: These short annual or perennial herbs (fig. 20), 1/2 to 4 feet high, bear alternate, deeply-lobed ("crowfoot") leaves and elongate clusters of spurred white, blue, or purple flowers in the spring. Roots grow in tuberous clusters. This weed commonly grows in rich open woods, along streams, in old fields, along roadsides, and on sand hills. Wild larkspur is most common in the southern two-thirds of the state, but the equally poisonous cultivated larkspur may be found in gardens statewide.
BRACKENFERN, BRAKE FERN

Pteridium aquilinum
(fern family)

TOXICITY RATING: Moderate.

ANIMALS AFFECTED: Ruminants (especially cattle), horses, sometimes swine. Any grazing animal is susceptible.

DANGEROUS PARTS OF PLANT: All parts, especially the roots.

CLASS OF SIGNS: In horses and swine: Weight loss, weakness, gait abnormalities, abnormal heart rate and/or rhythm, inability to rise, death.

In ruminants: Bleeding disorders (bruising, hemorrhaging, anemia), breathing difficulties, weight loss, death.

PLANT DESCRIPTION: The broad, triangular leaves (fronds) of this perennial fern rise 2-3 feet tall (sometimes to 4 feet) from a thick, brown or black, horizontal rootstock. Each frond divides into three main parts, and each of these is twice subdivided (fig. 23). The edges of the leaves usually turn under. Late in summer the lower edges of mature fronds bear powdery clusters of brown spores (fig. 23A). These ferns are common in open, acid woodlands, burned-over areas, and open pastures in dry, sandy, or gravelly soil. Stands of bracken may be so dense that they crowd out all other plants. Although brackenfern grows statewide, it is more common in the northern prairie and lake regions.
Asclepias spp.
(milkweed family)

TOXICITY RATING: Low to moderate. Milkweeds are unpalatable, and have variable toxicities. Death is not likely unless large quantities are consumed.

ANIMALS AFFECTED: All animals may be affected. Sheep are most at risk, but cattle, goats, horses, poultry, and pets are also at risk.

DANGEROUS PARTS OF PLANT: Stems, leaves, roots.

PLANT DESCRIPTION: Milkweeds, such as common milkweed, Asclepias syriaca (fig. 26), get their name from the thick, sticky, milky sap that oozes out of cut or torn leaves, stems, and fresh pods. The usually solitary stems of milkweed grow 1 to 5 feet tall and bear opposite (sometimes whorled), sometimes fleshy leaves with entire margins. Flowers emerge in umbrella-like clusters and range in color from pink to rose-purple to orange or white. The fruit (fig. 26A) is a pod with "tufted" seeds. A dozen species of milkweeds grow in Indiana woods and swamps, but most commonly in dry soils of fields and roadsides. Dogbanes (Apocynum spp.), which are easily confused with milkweeds, are found in the same habitats and may cause similar poisoning.
FIELD HORSETAIL SCOURINGRUSH

Equisetum arvense Equisetum hyemale
(horsetail family)

TOXICITY RATING: High for horses, moderate for other species.

ANIMALS AFFECTED: Horses are the species most affected, cattle and sheep may be affected, but this occurs rarely.

DANGEROUS PARTS OF PLANT: All parts, both fresh and dried.

CLASS OF SIGNS: Weight loss, weakness, gait abnormalities, abnormal heart rate and/or rhythm, inability to rise, death.

PLANT DESCRIPTION: Two types of shoots 1 to 3 feet tall merge from horsetail’s underground rootstock. Both types are round, hollow, stiff, and jointed. The stem sections easily pull apart. The first type of shoot (fig. 29A) is tan, appears early in spring, and ends in a terminal, cone-like structure. The later, green, sterile shoot (fig. 29A) bears whorls of pine-needle-like branches and looks like a horse’s tail. Scouringrush sends up long, tapering, cane-like shoots 1-6 feet tall. These stiff, evergreen shoots terminate in spore-producing cones. Leaves are reduced to teeth-like scales arranged in whorls around the joints of the stems (fig. 29B). The plants commonly grow on shaded, moist soil in meadows, along road sides, in ditches and thickets, along stream banks, at the borders of swamps, and on railroad embankments.
MUSTARD FAMILY

Brassica (wild mustard)
Thlaspi (pennycress)
Lepidium (peppergrass), etc.

TOXICITY RATING: Low to moderate.

ANIMALS AFFECTED: Cattle, horses, sheep, poultry.

DANGEROUS PARTS OF PLANT: All parts, especially seeds.

CLASS OF SIGNS: Oral and gastrointestinal irritation, photosensitivity, breathing difficulty.

PLANT DESCRIPTION: Mustard family members have a pungent, sulfurous odor or taste. They may be annual, perennial, or biennial, with a basal cluster of leaves and alternate leaves on the stem that are usually smaller and shorter-stalked than the basal leaves. Flowers of most mustard species are yellow, but some are white, blue, or purple, and all have four petals in a cross-like arrangement (fig. 34A). The seepod (siliquae) is dry and may be broad and flat (fig. 34B) or skinny and much longer than it is wide (fig. 34C). The mustard family includes weeds such as yellow rocket, black mustard (fig. 34), tansy mustard, peppergrass, and pennycress. These are found in fields, pastures, lawns, roadsides, waste areas, and sometimes in woods. Cultivated mustards, which may be harmful if eaten in large quantities, include cabbage, rape, broccoli, turnip, rutabaga, horseradish, and radish.
OHIO BUCKEYE HORSECHESTNUT

Aesculus glabra Aesculus hippocastanum
(horsechestnut family)

TOXICITY RATING: Moderate to high.

ANIMALS AFFECTED: All animals may be affected, especially grazing animals and those consuming the honey.

DANGEROUS PARTS OF PLANT: Buds, nuts, leaves, bark, seedlings, and honey.

CLASS OF SIGNS: Two effects: gastrointestinal and neurologic: excessive salivation, gastrointestinal irritation, vomiting in those species that can vomit, abdominal pain, diarrhea. Neurologic signs can include staggering, trembling, breathing difficulty, dilated pupils, collapse and paralysis, which can proceed to coma and death.

PLANT DESCRIPTION: The thick twigs of these medium-sized trees have glistening buds in spring and bear opposite leaves composed of five leaflets in a finger-like arrangement (fig. 44). The yellowish flowers rise in large, upright, dense, candle-like clusters at branch ends during June. The prickly fruit contains 1 to 3 nutlike seeds, glossy and leathery brown with a pale scar on each that gives the tree its name. These trees commonly grow in rich, moist woods or along river banks and are often planted as ornamentals.
BLACK WALNUT

Juglans nigra
(walnut family)

TOXICITY RATING: Moderately toxic, depending upon length of exposure.

ANIMALS AFFECTED: Horses, dogs, possibly other animals.

CLASS OF SIGNS: Laminitis, breathing problems, gastroenteritis.

PLANT DESCRIPTION: These familiar trees are recent additions to the list of poisonous plants. Little information is yet available about their toxicity. Black walnuts are large (60-80 foot) forest trees often planted as ornamentals. The bark has characteristic broad, round ridges. The leaves are alternate, pinnately compound, 1 to 2 feet long, with 13 to 23 sharply toothed, tapered-pointed leaflets (fig. 45). Often there is no terminal leaflet. The fruit is a very rough nut enclosed within a clammy glandular husk, 2 to 4 inches in diameter (fig. 45A).

RED OAK

Quercus rubra
(beech family)
TOXICITY RATING: Moderate high.

ANIMALS AFFECTED: All animals may potentially be affected, but the primary risk is to cattle.

DANGEROUS PARTS OF PLANT: Buds (fall), young shoots (early spring), sprouts, acorns.

CLASS OF SIGNS: Poor doer, poor appetite, weight loss, diarrhea or constipation, increased drinking, increased urination, edema, death is possible.

PLANT DESCRIPTION: Oaks are trees with leaves that turn brown but hang on through the winter. In the southwestern U.S., Gambel’s oak, shinnery oak, and post oak frequently cause poisonings. In our part of the country, red oak has produced problems. Red oak is a large tree of well-drained woodlands, parks, and home plantings that bears broad-bladed leaves with deep lobes ending in bristle-tips (fig. 47). The fruit is the familiar nut borne in a scaly cup and called an acorn (fig. 47A).
BLACK LOCUST

Robinia pseudo-acacia

(pea family)

TOXICITY RATING: High to moderate.

ANIMALS AFFECTED: Horses are particularly at risk, but all animals ingesting the plant may be poisoned.

DANGEROUS PARTS OF PLANT: Leaves, especially wilted leaves, young shoots, pods, seeds, inner bark.

CLASS OF SIGNS: Depression, poor appetite, weakness, paralysis, abdominal pain, diarrhea (which may be bloody) and abnormalities in the heart rate and/or rhythm. Death is possible.

PLANT DESCRIPTION: These moderate-sized trees with rough bark often bear two short spines at the base of each leafstalk (easiest to see on young leaves). Leaves are alternate and pinnately compound with oval, entire leaflets (fig. 48). The fragrant flowers are creamy white, sweet-pea-like, and arranged in long drooping clusters. The fruit is a flat brown pod which contains kidney-shaped beans (fig. 48A). Black locusts are common in well-drained woods, thickets, and waste areas, especially in the southeastern part of the state. They are often planted along highways and fencerows as ornamentals and for erosion control.
ALSIKE CLOVER

Trifolium hybridum

(pea family)

TOXICITY RATING: Low.

ANIMALS AFFECTED: All grazing animal may be affected.

DANGEROUS PARTS OF PLANT: All green parts (when dewy).

CLASS OF SIGNS: Gastrointestinal irritation, photodermatitis (sunburn or sunscald).

PLANT DESCRIPTION: These perennial legumes (fig. 18) are commonly grown for pasture or hay and may be found as escapes in fields, roadsides, and waste areas. They have the familiar three-parted clover leaf. The flowers are axillary, not terminal as in red clover, and are pink to white in a clover head.

STinging nettlewood (bull) nettle

Urtica dioica Laportea canadensis

(nettle family)

TOXICITY RATING: Low. Local irritation is the most common sign which shortly resolves on its own.
ANIMALS AFFECTED: Any animal that brushes against or consumes the plant can be affected. Short-haired hunting dogs and other dogs that run through the underbrush are more likely to encounter this plant.

DANGEROUS PARTS OF PLANT: Stems, leaves.

PLANT DESCRIPTION: These herbaceous perennials are common on moist ground in flood plains, woodlands, and along stream and river banks. They often occur in colonies so large that they are the only herbaceous plant present. The tough unbranched stems grow 2 to 5 feet tall from fibrous roots and are covered with stinging bristles. The leaves are opposite, thin, egg-shaped, toothed, and tapered at the tip. They measure 2 to 6 inches by 1 to 2 inches in stinging nettle and 3 to 8 inches by 3 to 5 inches in wood nettle. The 3 to 5 main veins from the base make the leaf (especially in wood nettle) strongly resemble the leaves of white snakeroot. However, the stinging hairs on the lower surface of the leaves prove the plant's identity. The tiny, green or greenish-white flowers droop in axillary clusters in stinging nettle (fig. 31) and stand upright in branching clusters at the top of the stem in wood nettles.
HEMP, MARIJUANA, HASHISH, HASH

Cannabis sativa
(nettle family)

TOXICITY RATING: Low. Animals tend to avoid this plant, and toxic encounters are rarely fatal.

ANIMALS AFFECTED: All animals, pets as well as horses and livestock, may be affected.

DANGEROUS PARTS OF PLANT: Leaves, stems, flowers, seeds.

CLASS OF SIGNS: Behavioral changes, trembling, incoordination, gastrointestinal signs, sometime breathing difficulty.

PLANT DESCRIPTION: This coarse, roughly hairy, herbaceous annual, at least 3 to 6 feet tall, has opposite leaves on the lower part of the plant, alternate leaves above (fig. 35). The leaves are made up of from 3 to 7 coarsely-saw-toothed, rough-to-the-touch, long, narrow leaflets borne in a finger-like arrangement. Male and female flowers are found on separate plants, the male flowers on branch tips and the female along the length of the branches. Hemp may be found in weedy pastures, fence rows, brushy stream banks, and illicit plantings.
COMMON ST. JOHN'S WORT, KLAMATH WEEDE

Hypericum perforatum
(St. Johnswort family)

TOXICITY RATING: Low to moderate.

ANIMALS AFFECTED: Cattle, sheep, goats, horses, and swine.

DANGEROUS PARTS OF PLANT: All parts.

CLASS OF SIGNS: Sunburn, skin slough, eye irritation.

PLANT DESCRIPTION: This perennial herb (fig. 38) grows 1 to 11/2 feet 1/2 to 1 inch long and flat-topped clusters of golden yellow flowers 3/4 to 1 inch broad which bloom from midsummer to late fall. The five petals often have distinctive black dots around their edges (fig. 38A) and the leaves may have similar dots (fig. 38B). St. Johnswort commonly grows in dry, gravelly, or sandy soils in full sunshine. Other species of Hypericum occur in Indiana, some as garden plants. Although the evidence of their toxicity is not as clear, it may be prudent to avoid them, too.
STAR-OF-BETHLEHEM, SNOWDROP, NAP-AT-NOON

Ornithogalum umbellatum
(lily family)

TOxicity Rating: Moderate to low. While very toxic, exposure is not commonly reported.

Animals Affected: Cattle, sheep, horses, and potentially any grazing animal.

Dangerous Parts of Plant: All parts, especially bulbs.

Class of Signs: Stomach and intestinal irritation, abdominal pain, irregular heart rate, death (rarely).

Plant Description: This perennial (fig. 39), a close relative of wild garlic (but without the smell), reproduces mostly by clumps of bulbs. The central flower stem grows 4 to 12 inches long. The leaves are about as long as the stem and have a light green midrib. Star-shaped flowers, six white petals with green stripes on the back, appear in spring. Usually the tops die back after flowering and before the fruit, a capsule, can be produced. Originally introduced to Indiana as a garden plant, star-of-Bethlehem has now gone wild along roadsides, in fields, and in woods, especially in the southern and western parts of the state.
Festuca arundinacea
(grass family)

TOXICITY RATING: Moderate to high, depending upon individual circumstance.

ANIMALS AFFECTED: Horses, cattle, possibly other ruminants.

DANGEROUS PARTS OF THE PLANT: Seed head, stem and leaf sheath.

CLASS OF SIGNS: Reproductive problems, "poor doers", lameness, dry gangrene, fever, death.

PLANT DESCRIPTION: This grass (fig. 15), often cultivated in wet pastures for forage or for turf, is a perennial, 3 to 4 foot tall clump grass with medium-wide leaves that are rough-ribbed on top. It has no rootstocks (rhizomes). The heads are open and many-branched. Escaped plants may be found along roadsides and in waste areas, especially in the southern half of the state.
DUTCHMAN'S BREECHES, STAGGERWEED

Dicentra cucullaria

CULTIVATED BLEEDING HEART

Dicentra spectabilis

(poppy family)

TOXICITY RATING: Low. The plant is unpalatable and is not eaten when better forages are available. Also, larger quantities need to be consumed to show clinical signs, and only rarely is consumption of Dicentra lethal.

ANIMALS AFFECTED: Cattle are primarily affected, horses and sheep also appear susceptible. Due to the nature of the toxic component (morphine-like derivatives), all species are likely to be susceptible at sufficient dosages.

DANGEROUS PARTS OF PLANT: Leaves, stems, roots.

PLANT DESCRIPTION: These delicate perennials with finely-cut, fern-like leaves bear 1 to 10 showy flowers on slender stalks. The 4 to 10 creamy white flowers of Dutchman's breeches (fig. 21A) have spurs like bloomer legs. The white-flowered squirrel corn (fig. 21) and pink-flowered bleeding heart plants bear heart-shaped petals with tear-drop-shaped appendages at the bottom. Small, yellow, pea-like tubers are scattered along the underground stem of squirrelcorn. The wild staggerweeds are common spring wildflowers in established woodlands.
Definition of terms

Boarding 鬃 renting a stall space and pasture for the keep of a horse, often done by those owning horses but having no land to keep them, or by those wanting the use of special facilities.

Calf roping 牛 a timed event in which the cowboy ropes a calf, throws it to the ground, and ties three legs together with a pigging string. This event began as a way to treat injured calves on the range.

Chutes 牛 areas or pens that are used to hold stock (cattle) that cannot be lead or tied, as with a horse.

Clinics 牛 brief educational session over a specific topic conducted by a recognized expert, ranging in length from a couple of hours to several days.

Cutting 牛 timed event, also judged, designed to test the ability of the horse to work without cues from the rider in the selection of a calf from the herd then preventing it from returning to the herd.

Event association 牛 similar to saddle club, but larger and specifically focused on one event or breed.

Header 牛 first cowboy to rope the calf, he may throw the rope around the head and one horn, the neck, or both horns.

Heeler 牛 second cowboy in the team, he ropes both hind feet of the calf.

Reining 牛 judged event designed to show the athletic ability of a ranch type horse in the confines of a show arena.

Figgin' string 牛 a length of twisted nylon, looped in one end, used in calf roping.

Pleasure 牛 judged event that displays the smoothness and quality of a ride that a horse can give for recreational riding.

Saddle club 牛 group or organization that meets on a regular basis to ride.
Stock Horse term used to define a horse that is ridden on a daily basis for work, generally on western ranches, but in modern times the term depicts a horse that is of western origins in breed.

String horses that were held in reserve for each cowboy to ride, often the work was too hard and long to ride the same horse everyday on the range.

Team Penning timed event developed to test the ability of three riders working together in the selection and separation of three numbered calves from a herd of thirty.

Team Roping timed competition that involves two riders, a header and heeler, working together to each rope one end of a running calf.

Trail Riding recreational riding that involves any type of horse and any skill of rider.

Turnout Paddock Small enclosed area where a horse can be turned out for daily excercise, or for medical reasons must be quaruntined

Warm-up arena small arena used before a competition to warm-up the horse before he is expected to perform, also used as a waiting area for participants before each class

Working Stock Horse horse that is required to complete outdoor work, such as is typically found on large ranches in the western united states.


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