

USPC

Answer Key

An Illustrated Study Guide to Toxic Plants and Symptoms To be used for H-B Certifications

This is the answer key for the document on the USPC website, *An Illustrated Study Guide to Toxic Plants and Symptoms*. The sources used for this material are National Examiners and the C1-C2 and HB-A USPC Manuals, and as noted.

The scale of toxicity is 1, for low, continuing up to 10, for extremely toxic. HorseDVM
<https://horsedvm.com/toxicfinder.php>

Slide	Regions	<u>Plant</u> (scientific name) type: tree, plant, shrub	Source–symptoms toxicity on a scale of 1 (low) to 10 (extreme danger)
1	Most, less is S	<u>Black Nightshade</u> / <u>HorseNettle</u> (<i>Solanum spp</i>) many species Flowering weed	M-Colic, lack of coordination, weakness, depression, congested heart and lungs, diarrhea, muscle twitching, anorexia, salivation, dilated pupils. Horsenettle and black nightshade are green berries when immature. Horsenettle berries turn yellow when mature. The black nightshade berries become black when mature. 6/10
2 44	MW & Eastern 2/3 of US	<u>Black Walnut</u> (<i>Juglans nigra</i>) tree	M–toxic in bedding-causes laminitis, as little as 10% of bedding is dangerous. 8/10
3	all	<u>Bracken Fern</u> (<i>Pteridium aquilinum</i>) plant	M-Loss of appetite, constipation, dilated pupils, loss of coordination; horse may stand with legs braced. 7/10
4	SW, S, E coast	<u>Castor Bean</u> (<i>Ricinus communis</i>) small shrub	M–Colic, bloody diarrhea; incoordination, increased heart rate, fever, sweating convulsions, Fatal in small amounts. 7/10
5	SE, NE, MW, upl MW L48	<u>Chokecherry</u> or <u>Wild Black Cherry</u> (<i>Prunus virginiana</i>) tree	M–dangerous when leaves wilted or broken branches after frost, causing it to release cyanide–leaves taste sweet; 1-20 lbs rapidly fatal Heavy breathing, agitation, bright-red mucous membranes 7/10
6	All, esp E & W coast	<u>Foxglove</u> (<i>Digitalis spp</i>) flower	M-weakness; head lowers and becomes edematous; colic; bloody diarrhea; slow heart rate; difficulty breathing. 9/10
7	all	<u>Frosted Grass/Clover or Alfalfa/Lawn Clippings</u> grass	M-Not a toxic plant Frosted Grass/Clover or Alfalfa–symptom: serious or even fatal colic. Lawn Clippings–Wilt & ferments causing same symptoms as frosted grass; never feed lawn clippings to horse. 8/10
8	all	<u>Hemlock, Poison</u> (<i>Conium maculatum</i>) Wild plant	M–roots harmless in spring but toxic rest of year Loss of muscle strength, esp. in hind legs, tremors; dilated pupils, frequent urination, temp, resp. failure

			9/10
9	all	<u>Hemlock, Water</u> (<i>Cicuta sp.</i>) Wild plant	M—roots harmful-summer to winter. Loss of muscle strength, esp. hind leg tremors, dilated pupils, frequent urination, resp. failure. 9/10
10	all	<u>Horsetail</u> (<i>Equisetum spp</i>) several species plant	M-Lack of appetite, loss of coordination, diarrhea, rapid pulse 6/10
11	most of US, not N MW	<u>Johnson Grass</u> (<i>Sorghum halepense</i>) plant/grass	M—Respiratory difficulties, trembling, bright-red mucus membranes, lack of coordination, agitation, death 8/10
12	Northern half of US	<u>Laurel/Mountain Laurel</u> (<i>Kalmia latifolia</i>) This is not a Rhododendron. The manual incorrectly lists mtn laurel and rhododendron as the same, although they look similar. woody shrub, evergreen	M—Colic, salivation, nasal discharge, muscle tremors, incoordination, increased heart and respiratory rates, ataxia, coma, death 8/10
13	all	<u>Larkspur</u> (<i>Delphinium spp</i>) many species flower	. M—incoordination, wide-based stance with arched back, abnormal heart rate, constipation, difficulty breathing, death from cardiac and respiratory failure. 8/10
14	W- Great Plains to Rockies	<u>Locoweed-</u> (<i>Astragalus spp.</i>) <u>Crazyweed</u> (<i>Oxytropis spp</i>) shrub	M—incoordination; bobbing head; depression or nervousness; abortion; weight loss; poor coat; poor vision; salivation; unpredictable signs; possibly addictive. 20 toxic varieties that look similar, stem or stemless herb; see pg. 451 in Advanced Manual 7/10
15	all	<u>Lupine</u> (<i>Digitalis spp.</i>) flower over 100 varieties	M—Affects nervous system; behavior changes; difficulty breathing & moving, diarrhea, depression, incoordination, eventually convulsions and coma; death by respiratory paralysis 9/10
16	all	<u>Ornamental Yew</u> (<i>Taxus baccata</i>) shrub	M—trembling, labored breathing, irregular heartbeat, convulsions, collapse, death 9/10

17	all	<u>Privet</u> (<i>Ligustrum vulgare</i>) shrub	M -Colic, diarrhea, incoordination, weak pulse, convulsions, death 6/10
18	Plains to SW and Pac. NW	<u>Ragwort, Tansy</u> (<i>Senecio jacobaea</i>) <u>Groundsel</u> (<i>Senecio vulgaris</i>) herb	M -20 lbs. at once or smaller amount over several days or weeks causes liver damage tall daisy like plant with yellow flowers that grows in hayfields, pastures, ditches, and unimproved areas. Weight loss, freq. urination, yellow mucous membranes, aimless walking, colic, diarrhea, dilated pupils, increased heart rate, depression, liver failure 8/10
19	all Red-mostly E half	<u>Red Maple</u> (<i>Acer spp</i>) many species tree	M -Depression, lethargy, anorexia, dark-colored urine, labored breathing, increased heart rate, pale mucous membranes, anemia 9/10
20	all	<u>Rhododendron</u> (<i>Rhododendron</i>) The manual incorrectly lists mtn laurel and rhododendron as the same, although they look similar. flowering shrub	M : All parts are poisonous, esp. leaves Salivation, colic. 5/10
21	all	<u>Vetch (Hairy Crown)</u> (<i>Vivia spp.</i>) low growing vine plant	M -mid late spring toxic high lack of coordination, loss of appetite, difficulty breathing, welts on skin 7/10
22	CA Rocky Mtn Plains	<u>Yellow StarThistle</u> (Manual lists Russian Knapweed) (<i>Centaurea solstitialis</i>) plant	all parts- need to eat 50-100% of body weight, when noticed the damage is done. M -Plant is sweet in taste, unable to chew or swallow. a member of the knapweed family and is toxic to horses. 7/10
23		<u>Russian Knapweed</u> (<i>Centaurea stoebe</i>) The manual incorrectly lists Russian Knapweed and Yellow Star Thistle as the same. noxious weed	Colorado State information (since it is not in our manual) salvation, trouble swallowing and difficulty chewing, Horse might immerse head in water to get water to back of their mouth, death result from starvation. 7/10

Not in slides but here		<p>Spotted Knapweed (<i>Centaurea stoebe</i>)</p> <p>noxious weed</p>	<p>Spotted Knapweed is also a noxious weed, but it is not toxic to horses.</p> 
24	S, SW Coast	<p>Oleander (<i>Nerium oleander</i>)</p> <p>flowering shrub</p>	<p>HO-diarrhea, trembling, cold extremities, paralysis, coma, heart stops, death. DVM-diarrhea, excessive salivation, depression, and loss of appetite, then cardiac signs, weak and irregular pulse, heart blocks</p> <p>10/10</p>

Toxic Plants for Horses—Further break down of information compiled by Dr. Paula Horne, DVM, NE

The “telling” symptoms are in red to help differentiate and importance.

Black Nightshade/ HorseNettle – Solanum species since all the nightshade species are toxic and have the same types of symptoms.

ACUTE TOXICITY

Major symptoms – seen with ingestion of several pounds of plant material,

- Neurologic- **Incoordination, Dilated Pupils**, Muscle Twitching, Convulsions, proceeding rapidly to **Death**
- Gastrointestinal – **Colic**, Diarrhea, Drooling

Black Walnut

ACUTE TOXICITY

Major Symptoms – seen with as little as 10% of bedding material.

- **Laminitis/ Severe Lameness, Swollen Lower Legs**, Fever, Increased respiratory rate due to pain.

Bracken Fern

CUMULATIVE TOXICITY- large quantities over many days/weeks

Major Symptoms

- Neurologic - **Progressive Incoordination**, Twitching, Blindness, Seizures and **Death**
- Gastrointestinal -Loss of Appetite, Weight Loss, **Constipation**

Other Symptoms

- Fever, Anemia, Depression

Castor Bean

ACUTE TOXICITY

Major Symptoms -

- Neurologic - **Sudden Death, Convulsions**, Incoordination
- Gastrointestinal - **Bloody Diarrhea**, Colic

Other - Fever, Increased Heart Rate, Sweating

Chokecherry

ACUTE TOXICITY

Major Symptoms -

- **Respiratory Distress, Cherry Red Mucous Membranes, Death**
- Agitation, Seizures

Foxglove

ACUTE TOXICITY

Major Symptoms -

- Cardiac - **Heart Failure, Arrhythmias, Profound Weakness, Death**
- **Respiratory Distress**
- Neurologic - Seizures, Constricted Pupils

Poison Hemlock

ACUTE TOXICITY

Major Symptoms -

- Neuromuscular Blocking Toxin - **Incoordination, Tremors, Dilated Pupils, Respiratory Failure, Death**
- Also, may see -Frequent Urination, Seizures, Frequent Defecation, Drooling, Paralysis

Water Hemlock

ACUTE TOXICITY

Major Symptoms

- Neurological - Sudden Death, Tremors, Dilated Pupils, Stiffening of Limbs , Seizures
- Other Symptoms - Frothing at the Mouth, Colic, Nervousness, Teeth Grinding

Horsetail

CUMULATIVE TOXICITY

Major Symptoms

- Neurologic - **Progressive Incoordination**, Twitching, Blindness, Seizures and **Death**
- Gastrointestinal - **Loss of Appetite, weight Loss, Diarrhea**

Johnson Grass

ACUTE TOXICITY

Major Symptoms

- Cardiac - **Acute Heart Failure, Respiratory Distress, Bright Red Mucous Membranes, Convulsions, Death**

Other Symptoms

- Trembling, Agitation, Incoordination

Mountain Laurel

ACUTE TOXICITY

Major Symptoms

- Gastrointestinal - **Colic, Excessive Salivation, Diarrhea**, Appetite Loss
- Systemic - **Incoordination**, Weakness, Muscle Tremors, Coma, **Death**
- **Azalea and Rhododendron are closely related species found in gardens nationwide and cause very similar symptoms.**

Larkspur

ACUTE TOXICITY

Major Symptoms

- Cardiopulmonary - Respiratory Distress, Rapid Irregular Heart Rate, Death
- Systemic - Drooling, Incoordination, Anxious

Locoweed & Crazyweed

CUMULATIVE TOXICITY

Major Symptoms

- Neurologic - **Unpredictable Behavior - Depression or Nervousness, Circling, Aimless Wandering, Incoordination**,
- Reproductive - **Infertility, Abortions**
- Systemic - Weight Loss, Poor Coat, Salivation, Poor Performance

Lupine

ACUTE TOXICITY

Major Symptoms

- Neurologic - Behavior Changes, Incoordination, Muscle Twitching, Convulsions, Respiratory Paralysis, Death

Ornamental Yew

PERACUTE TOXICITY

Major Symptoms

- Heart Failure - Sudden Death within minutes of eating,
- Respiratory distress, Trembling, Heart Arrhythmias, Convulsions, Collapse

Privet

ACUTE TOXICITY

Major Symptoms

- Gastrointestinal - Colic, diarrhea
- Kidney Failure
- Neurologic - Incoordination, Convulsions
- Death from Multiple Organ Failure

Tansy Ragwort

CUMULATIVE TOXICITY

Major Symptoms

- Liver Damage/Failure - Weight Loss, Jaundice (yellowing of mucous membranes), Mental Confusion
- Gastrointestinal - Colic, Diarrhea,
- Neurologic - Dilated Pupils/Blindness, Depression

Red Maple

ACUTE TOXICITY

Major Symptoms

- Red Blood Cell Damage - Muddy Brown Mucous Membranes, Respiratory Distress, Anemia
- Dark Brown Urine
- Death from Respiratory Failure

Vetch (Hairy or Crown Species)

Crown Vetch

ACUTE TOXICITY

Major Symptoms

- Loss of Appetite, Abortion
- Neurologic - Incoordination, Weakness, Difficulty Breathing

Hairy Vetch

CUMULATIVE TOXICITY

Major Symptoms

- Weight Loss
- Dermatologic - Hair Loss, Crusty/Scaly Skin on Face, Nodules under Skin,
- Conjunctivitis, Lymph Node Enlargement

Yellow Star Thistle

CUMULATIVE TOXICITY

Major Symptoms

- Severe Weight Loss
- Neurologic - unable to eat and drink due to inability to swallow normally, Constant Chewing, Jaw may be held open or closed, Depression, Anxious, Dunking Head into Water Trough
- Death from Dehydration or Starvation

Russian Knapweed

CUMULATIVE TOXICITY

Major Symptoms

- Same As Yellow Star Thistle