

**Acer rubrum (red maple) toxicity:** Affect horses.

Methemoglobinemia, heinz body anemia

**Arsenic:** hemorrhagic diarrhea. Cattle from foliage. Pet from ant baits, treated wood (backyard decks) or wood preservative.

**Rx. Dimercaprol** (BAL) deep IM, or **Succimer** (dimercaptosuccinic acid (DMSA)).

**Acetaminophen or Tylenol/Onion or garlic toxicosis:** Cats fed an exclusive baby foods. Cyanosis, brown blood, and Methemoglobinuria (dark brown urine), Heinz body anemia. **Rx:** Apomorphine, or xylazine or dexmedetomidine, gastric lavage, N-acetylcysteine

**Anticoagulant rodenticides:** inhibit vitamin K dependent factors (II, VII, IX and X). **RX:** vitamin K1 for 4 weeks

**Aflotoxicosis:** toxigenic strains of *Aspergillus flavus* and *parasiticus* on peanuts, soybeans, corn (maize), and other cereal grains. Widespread hemorrhages, icterus. **Rx:** take animals off feed and provide an effective binder for aflatoxins, such as hydrated sodium calcium aluminosilicates (**HSCAS**)

**Alkaloids toxicity:** in Delphinium spp. (larkspur), Rhododendron spp (azaleas) or Solanum spp. (nightshade). Cardiac arrhythmias and severe gastric distress

**Alsike clover (*Trifolium hybridum*)/dew poisoning:** IN **horses:** photosensitivity (trifobiasis) and Alsike clover poisoning ("big liver disease"). Fatal due to hepatic failure **NO ZUKU**

**Avocado (*persa Americana*): Persin.** Myocardial necrosis, or sterile mastitis

**Bracken fern toxicity /Enzootic hematuria:** *Pteridium aquilinum*, Thiamine (B1) deficiency, polioencephalomalacia. Cattle hematuria. **Horse** neurological disease. **RX:** thiamine supplementation and blood transfusion

**Bromethalin rodenticides:** inhibit ATP production in neurons. Tremors, seizures. **RX:** diazepam, mannitol to reduce cerebral

edema and incline plane 30 degrees to improve venous return.

**Bracken fern toxicity /Enzootic hematuria:** *Pteridium aquilinum*, Thiamine (B1) deficiency, polioencephalomalacia. Cattle hematuria. **Horse** neurological disease. **RX:** thiamine supplementation and blood transfusion

**Black walnut toxicity:** **Horses** are more susceptible. Laminitis, necrosis of dorsal laminae

**Blue-green Algae:** hepatotoxicosis after the ingestion of cyanobacteria, Cattle die rapidly. Evidence of the algal bloom on the muzzles, and the animals die very close to the water source of the algae. If seen prior to death, bradycardia and salivation

**Carbophenothion:** control parasites on sheep and a single dose is lethal to cats. **NO ZUKU**

**Centaurea spp / chewing disease: (BCSE):** yellow start thistle/ Russian Knapweed. Nigopallidal encephalomalacia in horses

**Cottonseed Toxicity/ Gossypol toxicity:** cardiotoxic, cardiac myopathy

**Chlorinated Hydrocarbons:** insecticides .CNS convulsive, seizures **NO ZUKU**

**Cholecalciferol Rodenticide:** absorption of calcium. Hyperphosphatemia (12h post ingestion), hypercalcemia (24h post ingestion) and azotemia (36-48h post). **RX:** emesis, activated charcoal, (furosemide) or saline diuresis, corticosteroids (decrease Ca intestinal absorption and urinary retention) and biophosphonates (pamidronate) to inhibit osteoclast activity.

**Cardiotoxic plants:** Oleander, Foxglove (*digitalis purpurea*), Azalea (*Rhododendron*) and Lily of the valley, azalea, rosebay and laurels. Cardiovascular signs

**Cantharidin toxicity/blister beetle (epicauta spp):** hemorrhagic gastritis, dark injected mucous membranes

**Copper Deficiency:** SPECTACLES, and gastroenteritis (Peat Scours/Teart, severe scours with gas bubbles) and myocardial fibrosis. **Rx:** Cu injections and supplement diet

**Copper toxicity:** gun-Metal grey Kidneys, port- Wine colored urine. **Goat** is less susceptible than **sheep**

**Cyanide toxicity (BCSE): Seeds of..**, Prunus species.

**Ruminants** and **reptiles** are sensitive, bright red blood (**cherry color**) contains Cyanohemoglobin, mucous membranes is very intensely red. Rumen gas smelling like bitter almond. **Rx:** Sodium nitrite and Sodium Thiosulfate

**Carbamates (insecticides) (BCSE):** SLUD. **Rx:** pralidoxime, diazepam, and Atropine

**Deoxynivalenol:** Is secondary mycotoxin, decrease feed intake in mold corn. Limit exposure to Zearalenone if the animal eat less

**Mare reproductive loss syndrome (MRLS):** associated with Eastern tent caterpillars, wild cherry trees and weather changes that affect pasture conditions

**Ergot intoxication/ Ergotism (BCSE):** fungus, *Claviceps purpurea*. Terminal necrosis,agalactia

**Ester Lilly or Tiger Lilly:** acute renal failure in cat. **Azotemia**, weakness, ataxia and abdominal pain. High creatinine, hyperkalemia and hyperphosphatemia.

**Ethylene glycol/ antifreeze (BCSE): elevated osmolar gap** (>20mOsm/kg), rapid test kit and Calcium Oxalate Monohydrate crystals in urine sediment **RX:** within 3 h Fomepizole (4-methylpyrazole or 4-MP), more 3 hours Ethanol 20%

**Fescue mycotoxin/Ergot-like mold:** neotyphodium coenophialum. Lameness and hyperthermia, and lipomatosis

**Fumonisin:** a toxin from *Fusarium* spp. Associated with moldy

corn. Equine leukoencephalomalacia, hypertension and porcine pulmonary edema (PPE).

**Fishmeal:** can be potentially toxic and allergenic. Ethoxyquin is a preservative in fishmeal that may have toxic hepatic effects. Fish meal also contains mercury, which can cause neurological disturbances

**Hypiodinemia:** goitrogenic plants (soybeans, cabbage, rape, kale and turnips, foals with hyperplastic goiter and hypothyroidism

**Household Cleaners:** acids and alkalis that cause caustic or corrosive lesions respectively. Treatment administer milk or water, GI protectants for several days and monitor for ulcers. Do not induce vomit or administer activated charcoal

**Hypomagnesemia/ tetany (BCSE):** ataxia, convulsion. **RX:** **IV Ca/Mg combo**

**Halogeton spp and Rumex sp (dock)/Oxalate toxicosis:** *Sarcobatus vermiculatus* (greasewood), *Aspergillus Niger*. Oxalate calculi

**Hemlock poison:** in conium maculatum. The cow's breath and urine smell like the odor of mouse urine.

**Imidacloprid:** is a neonicotinoid insecticide that can be applied in dogs and cats. **NO ZUKU**

**Ionophore (Monensin, Lasalocid) toxicity: Horse** Rhabdomyolysis and cardiomyopathy, Pale myocardium, hemopericardium, epicardial hemorrhage. **Cattle** Ascites, hydrothorax, pulmonary edema

**Kleingrass (*Panicum coloratum*):** icterus, photosensitivity, intermittent colic and fever **NO ZUKU**

**Lead toxicity:** CNS (encephalopathy, blindness, and head pressing), hemorrhagic diarrhea, basophilic stippling. **Rx:** Ca-EDTA

**Lupine sp (BCSE):** alkaloids anagyrine. Adults hepatic

damage, death from respiratory paralysis. if dam eat the plant between 40-70 days of gestation causing newborn calves with **Arthrogryposis (Crooked calf syndrome)**. **RX:** No treatment

**Locoweed toxicosis/ High Mountain/Altitude Dz/ Brisket Dz (BCSE):** Astragalus and Oxytropis. Swainsonine toxicity/ vetches or milk vetches. Right congestive heart failure

**Marijuana:** prolonged sedation, hypotension, bradycardia, hypothermia and mydriasis

**Metalddehyde:** ingestion of snail/slug bait. Tremors, ataxia. **RX:** includes decontamination

**Methylxanthine alkaloids/ Chocolate toxicity (BCSE):** seizures **Rx:** Diazepam and Lidocaine drip

**Mothball toxicity:** naphthalene-containing mothballs or from paradichlorobenzene containing cakes. GI signs, hemolytic anemia and Heinz bodies.

**Molybdenum toxicosis/ secondary hypocuprosis/ secondary deficiency in copper:** ataxia sway back. **Rx:** copper sulfate, removal of molybdenum

**Nitrate:** Blood from nitrate poisoned cattle contains methemoglobin, which confers a brownish discoloration, whereas blood from cyanide poisoned animals contains cyanohemoglobin which is bright red. Mucus membranes are gray colored. **RX:** methylene blue.

**Organophosphate toxicity (BCSE):** SLUDGE. **Rx:** pralidoxime, diazepam, and Atropine

**Permethrin /pyrethroid toxicity:** highly toxic to cats. **Rx** with Methocarbamol

**Paradichlorobenzene:** insecticide in deodorant cakes in diaper buckets, garbage cans and in bathrooms. CNS (tremors, salivation, ataxia and seizures)

**Photosensitization:** Pyrolizidine alkaloid present in senecio

sp., Amishinckia. Phylloerythrin

**Ponderosa pine (BCSE):** abortion 2-21 days after ingestion of 5-6 pound per day for 3 days. **Cattle** is most sensitive to it.

**Painting and Varnishing products:** Treatment administer milk or water, GI protectants for several days and monitor for ulcers. Do not induce vomit or administer activated charcoal

**Penitrem A:** present in moldy garbage containing *Aspergillus* spp. Clinical signs include painting, restlessness, hypersalivation, incoordination, fine motor tremors and seizures. Treatment includes gastrointestinal decontamination (emesis if possible), activated charcoal, methocarbamol (robaxin) for muscle tremors, diazepam (for seizures) and GI protectants (sucralfate or H2 blockers)

**Quercus spp (oak) toxicity: Tannins (gallotannin).** Hepato renal toxicity, pale swollen kidneys and peri-renal edema.

**Goats** resistant, but **Cattle** sensitive. Acorn calf

**Raising and grapes:** anuric renal failure

**Rotten salmon:** (GI upset), a **systemic** Symptoms 5-7 days after eating

**Sago palm:** hepatic necrosis

**Sorghum/Sudan Grass, Johnson grass, Milo (BCSE):** neurologic toxicity, posterior incoordination (swaying rear limb gait, knuckling) and urinary incontinence (dripping. primarily in **horses**)

**Salt toxicosis (BCSE):** **sheep** is most resistant and **pigs** are most sensitive.

**Slaframine toxicosis/black patch disease:** *Rhizoctonia leguminicola* fungus on red clover. Profuse salivation

**Stringhalt gait:** caused by *Hypochoeris radicata* (flatweed) and *Lathyrus* (sweet pea)

**Sulfa drugs:** displace the anticoagulant from plasma binding, increased free toxicant and increased toxicosis

**Teratogenic effect:** Griseofluvin (antifungal), Ketoconazole (antifungal) and Doxorubicin (chemotherapeutic) are teratogens, **especially, for cats and horses**. Oak toxicity (acorn calf) and Lupinea (arthrogryposis in **calf**) and skunk cabbage (cyclopedia in **lambs**).

**Toad poisoning:** oral irritant, profuse salivation, pawing at the mouth

**Trichothecenes:** Vomiting, Immunosuppression

**Urea toxicity/NPN// ammoniated feed toxicity /Bovine bonker:** CNS (tremors) **Rx:** gallon cold water and Vingar

**Veratrum spp (false hellebore, skunk cabbage):** cyclopia. Ingestion by ewes on day 14 of gestation will produce cyclopean lambs. Ingestion on days 19-21 results in embryonic death. Ingestion on days 28-32 defects of the limbs

**White Muscle Disease (BCSE):** sudden death and endocardial plaques. **Rx:** vitamin E and Selenium

**Zinc toxicity: birds** by galvanic cage wire or other shiny metal to prevent rusting. In **dog** by ingestion pennies, batteries, pain

**Zinc deficiency:** parakeratosis non-pruritic. . **Rx:** zinc in diet

**Zearalenone toxin:** reproductive dysfunction (Estrogenism and vulvovaginitis)

Reptiles: more sensitive to Cyanide

Horse: more sensitive to Ionophore, Sorghum, centaurea, Slaframine

Cattle: more sensitive to Oak, Ponderosa pine, Cyanide, but resistance to centaurea

Sheep: more sensitive to Halogeton and Lupine, but resistance to Salt

Goat: more resistance to Tannins (Oak)

Pig: more sensitive to salt

-CNS signs: Lead, urea, Chlorinated (bad LUC)

- Cardiomyopathy: Gossypol, Ionophore, Lymph sarcoma and Vit. E and Selenium deficiency,

- Myocardial fibrosis: Copper deficiency, cassia poisoning (coffee senna)

- Diazepam: Rx

Organophosphate (OPP), Carbamate toxicity, Chocolate toxicity

- LD50: the dose that is lethal to 50% of a test group. Lower LD50 is more toxic than a higher LD50