

Common Arkansas Plants Poisonous to Cattle

John Jennings
Professor
Extension Livestock
Specialist - Forages

John Boyd
Professor
Extension Weed Scientist

Livestock are accidentally poisoned in Arkansas each year from eating toxic plants in hay and pasture forage crops.

What is a poisonous plant? It is one that causes such problems as animal sickness, skin irritation, loss of appetite, loss of weight, reduced milk production or death.

All poisonous plants do not contain the same toxin. There are at least six different classes of poisons within plants. The two largest groups are alkaloids and glycosides. Within each of the six classes are several different poisonous compounds.

Twenty-one weeds are listed in this publication. They are among the 45 most common poisonous plants in Arkansas. However, their presence on a farm does not mean that animals will be killed or even show ill effects. The reasons are that (1) animals may not eat them, (2) the plants may not contain toxic levels of the poison at the time they are eaten, (3) animals eating the plants may be immune to the poisons they contain, (4) animals may not eat the poisonous part of the plant or (5) farmers may have rendered plants nontoxic by making hay or silage of them, by diluting the material eaten with other forage or by feeding certain materials to counteract the poison.

Some plants are likely to be a greater hazard to animal health than others because they (1) are so abundant in an area, (2) contain a more deadly poison or (3) because animals seek them out for selective grazing.

Livestock losses due to poisonous plants may be reduced or eliminated by weed control, by grazing practices, by keeping tame forage stands healthy and thick, by using caution during drought periods and by diluting contaminated feed with forage known to be free of poisonous materials.

Severity of Poisoning

Some of the factors that influence the degree of hazard associated with poisonous plants are as follows:

Plant Species – All plants absorb nitrates, but plants such as the sorghums, small grains, corn, turnips, rape, kochia, orchardgrass, pigweed, lambsquarter and soybeans are more likely than other plants to accumulate nitrates in toxic levels.

Plant Parts – The entire plant (as in the case of johnsongrass) or only certain parts of plants (as in the case of acorns and buds of oak trees) may accumulate poisons to a lethal level.

Environment – Reduced light caused by shade or cloudy weather can encourage nitrate accumulation in plants; droughts may also encourage nitrate accumulation; and frost or freezing weather may release deadly levels of prussic acid from johnsongrass.

Plant Age – Poisons that occur in plants such as white snakeroot and johnsongrass are more likely to be hazardous in younger plants.

Form of Feed – Johnsongrass hay is likely to be a safer form of feed than johnsongrass pasture since prussic acid dissipates from hay.

*Arkansas Is
Our Campus*

Visit our web site at:
<http://www.uaex.edu>

21 “Weeds” Most Likely to Poison Livestock in Arkansas

Plant	Toxic Part of Plant	Animals Affected If Known	Symptoms	Type Poison		Notes and Treatment*
				Category	Specific	
Occasionally Hazardous						
Johnsongrass	All plant parts. Particularly green stunted plants, frosted plants and second growth.	Cattle, sheep, goats, horses	1. Slow pulse 2. Dilated pupils 3. Labored breathing 4. Exhaled air has almond smell 5. Down cattle rarely recover	Glycoside	Prussic acid Nitrates	1. Prussic acid poisoning is not likely with hay. 2. Nitrate content is ranked from highest to lowest concentrations in plant parts as follows: roots, stems, leaves, seed.
Perilla Mint 1. Square-stemmed annual 2. Oval, serrated, green and purple leaves 3. Distinct odor 4. Problems most likely in late summer		Cattle and horses most frequently	1. Cattle develop emphysema of lungs 2. Open mouth breathing 3. Tire easily 4. Grunt when exhaling	Perilla Ketone		1. Grows in shade. 2. Often seen around the edge of pastures. 3. Remains green in dry periods.
Oak Primarily white oak along streams	1. Acorns 2. Young buds	Cattle, horses, sheep, goats	1. Frequent urination 2. Dry muzzle 3. Constipation 4. Thirst 5. Rough hair coat	Toxic acid Pyrogallol		1. Does kidney damage 2. Can be eaten by most cattle without ill effect. 3. Feed 3 pounds of a feed mix daily/head that consists of 10% slake lime (CaOH).
Wild Cherry	Wilted leaves	Cattle, sheep, goats		Glycoside	Prussic acid	
Hazardous in a Few Cases						
Redroot Pigweed Problems most likely after spraying with herbicide or using heavy fertility		Cattle, sheep, ruminants			Nitrate	Treat with 2% methylene blue intravenously.
Larkspur (several species) Hazardous dose: 0.7% of body weight	1. Young leaves most 2. Entire plant	Cattle, horses, rabbits	1. Paralysis	Alkaloids	Ajacine Delphinine Delphirine Delphinoidine	Sheep graze it without harm.
Coffee Senna Problems most likely in fall	Green or dry leaves, stem, seed	Cattle and others; often yearlings	1. Cattle alert, but can't stand 2. Coffee-colored urine 3. Diarrhea			1. Plants produce large, flat sicklepods. 2. 8+ leaflets/leaf.
Sicklepod Problems most likely in fall	Green or dry leaves, stem, seed	Cattle and others; often yearlings	1. Cattle alert, but can't stand 2. Coffee-colored urine 3. Diarrhea			1. Mildly toxic. 2. Long, slender pods. 3. 4-6 leaflets/leaf.

*See a veterinarian for specific treatments.

Plant	Toxic Part of Plant	Animals Affected If Known	Symptoms	Type Poison		Notes and Treatment*
				Category	Specific	
Occasionally Hazardous						
Sesbania Problems most likely in fall and winter	Seeds are the most toxic plant parts.	Livestock	1. Walk stiffly 2. Diarrhea 3. Hemorrhaging		Saponin	1. Cattle may crave seed. 2. 70+ leaflets/leaf.
Woody Nightshade 1. Perennial 2. Shiny red ripe berries occurring in clusters 3. Purple flower; orange center 4. Hazardous dose: 10 berries	1. Ripe berries most 2. All parts			Alkaloids	Atropine Hydrogen cyanide	Death is rare in animals.
Deadly Nightshade 1. A perennial 2. 3-4 berries can kill a child	All parts	Horses, cattle, goats, ducks, chickens		Alkaloids	Atropine Hyoscyamine	Death is rare in animals.
Ground Cherry	Unripe fruit and leaves					
Potentially Hazardous						
Water Hemlock 1. Perennial 2. Hollow, mottled stem 3. Lance-shaped leaves 4. Chambered lower-most stems 5. Tubers 6. Problems most likely in spring	1. Roots 2. All parts	Cattle more likely; horses, cattle, swine, sheep, goats, man	1. Paralysis of horse's hind legs 2. Frothing of mouth 3. Dilated pupils 4. Nervous 5. Trembling	Volatile alkaloids Volatile oil Resin	Aenaniline Oenanthotoxin Terpine Cicutoxin	1. Lose toxin with age. 2. The most violent poisonous plant in the United States.
Poison Hemlock 1. Hollow stems 2. Leaves are carrot-like 3. Herbage smells mousy 4. Hazardous dose: 10-14 oz/cow 5. Problems most likely in spring	1. Roots and seeds 2. Entire plant	Livestock, poultry, man	1. Vomiting 2. Trembling 3. Dilated pupils	Alkaloids	Conine	Used by Greeks as a poison.
Black Locust	Inner bark, seed, flowers, leaves	Horses, cattle, sheep, poultry, humans	1. Purgative 2. Stupor 3. Perspiration	Glycoside Phytotoxin	Robinin	
Pokeweed Problems in spring, summer, fall	1. Roots are the most poisonous part 2. Entire plant	Cattle, horses, swine, man	1. Irritated skin 2. Vomiting 3. Diarrhea	Acrid alkaloid Oxalic acid	Phylolaccioxin Phylolaccin Phylolaccic acid	Phylolaccioxin is a saponin.
Jimsonweed Hazardous doses: • Man - 20 seeds • Horses - 5-8 oz. • Cattle - 6-12 oz. • Sheep - 3-8 oz.	1. Seeds are the most toxic part 2. Entire plant	Cattle, horses, swine, poultry, man, dogs	1. Pupils dilate 2. Thirst 3. Dry, burning skin	Alkaloids Alcohol	Atropin Hyoscyamine Scopolamine Tremetol	Green or dry plants are hazardous.

*See a veterinarian for specific treatments.

Plant	Toxic Part of Plant	Animals Affected If Known	Symptoms	Type Poison		Notes and Treatment*
				Category	Specific	
Bracken Fern 1. A perennial 2. Problems most likely in summer 3. Poison is cumulative 4. Hazardous dose is when cattle consume their weight of bracken fern in 1 to 4 months	All stages of plant growth	Cattle, horses, sheep; goats are insensitive	1. Bloody stool 2. Excessive bleeding from fly bites 3. Convulsions 4. Death	Enzyme	Triaminase	1. Hay can cause problems. 2. Vitamin B1 is inactivated. 3. Depression of bone marrow.
White Snakeroot	Leaves, stems, green flower-heads	Cattle, sheep, horses, man, domestic animals	1. Trembling 2. Slobbering 3. Vomiting	Alcohol Glycoside	Tremetol	1. Dry plants are slightly toxic. 2. Poison is cumulative.
Buttercup Problems most likely at flowering time	Stems, leaves	All animals	1. Death 2. Ulcerated skin 3. Red milk 4. Bitter milk	Irritant oil	Protoaemonin	1. Prickly sensation in mouth. 2. Harmless when dried. 3. Certain plant species are more hazardous.
Equisetum (scouring rush)	Tops	1. Cattle and sheep on pasture 2. Horses on hay		Enzyme Alkaloid	Thiaminase	1. Vitamin B1 is inactivated. 2. Treat with massive thiamine dose.

*See a veterinarian for specific treatments.

Fortunately, most (but not all) poisonous plants must be consumed in large quantities to be lethal. Also, many have an undesirable taste, and animals do not consume them in toxic levels unless they are forced to do so by a shortage of forage that occurs during drought or long winter seasons.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

Acknowledgment is given to Dr. B. J. Hankins, former Extension agronomist - forages.

DR. JOHN JENNINGS is professor and Extension livestock specialist - forages and **DR. JOHN BOYD** is professor and Extension weed scientist. Both are with the University of Arkansas Division of Agriculture, Cooperative Extension Service, Little Rock.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director, Cooperative Extension Service, University of Arkansas. The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Equal Opportunity Employer.