Agriculture and Natural Resources

FSA3025

Common Arkansas Plants Poisonous to Cattle

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RESEARCH & EXTENSION

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-three 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 (l) 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.

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23 "Weeds" Most Likely to Poison Livestock in Arkansas

	Toxic Part	Animals Affected		Type Poison				
Plant	of Plant	If Known	Symptoms	Category	Specific	Notes and Treatment*		
Occasionally Hazardous								
Johnsongrass	All plant parts. Particularly green stunted plants, frosted plants and second growth.	Cattle, sheep, goats, horses	 Slow pulse Dilated pupils Labored breathing Exhaled air has almond smell Down cattle rarely recover 	Glycoside	Prussic acid Nitrates	 Prussic acid poisoning is not likely with hay. Nitrate content is ranked from highest to lowest concentra- tions 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	 Cattle develop emphysema of lungs Open mouth breathing Tire easily Grunt when exhaling 	Perilla Ketone		 Grows in shade. Often seen around the edge of pastures. Remains green in dry periods. Can remain toxic in hay. 		
Oak Primarily white oak along streams	1. Acorns 2. Young buds	Cattle, horses, sheep, goats	 Frequent urination Dry muzzle Constipation Thirst Rough hair coat 	Toxic acid Pyrogallol		 Does kidney damage Can be eaten by most cattle without ill effect. Feed 3 pounds of a feed mix daily/head that consists of 10% slake lime (CaOH). 		
Wild Cherry or Black Cherry Tree	Wilted leaves	Cattle, sheep, goats		Glycoside	Prussic acid	Poisoning is mainly from consumption of wilted leaves after tree is cut or damaged by storm.		
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 intra- venously.		
Larkspur (several species) Hazardous dose: 0.7% of body weight	 Young leaves most 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	 Cattle alert, but can't stand Coffee-colored urine Diarrhea 			 Plants produce large, flat sicklepods. 8+ leaflets/leaf. 		
Sicklepod Problems most likely in fall	Green or dry leaves, stem, seed	Cattle and others; often yearlings	 Cattle alert, but can't stand Coffee-colored urine Diarrhea 			 1. Mildly toxic. 2. Long, slender pods. 3. 4-6 leaflets/leaf. 		

*See a veterinarian for specific treatments.

	Toxic Part of Plant	Animals Affected If Known	Symptoms	Type Poison		Notes and	
Plant				Category	Specific	Treatment*	
		Occasi	ionally Hazardous				
Sesbania Problems most likely in fall and winter	Seeds are the most toxic plant parts.	Livestock	 Walk stiffly Diarrhea Hemorrhaging 		Saponin	1. Cattle may crave seed.	
 Woody Nightshade Perennial Shiny red ripe berries occurring in clusters Purple flower; orange center Hazardous dose: 10 berries 	 Ripe berries most 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						
Dotentially 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	 Paralysis of horse's hind legs Frothing of mouth Dilated pupils Nervous Trembling 	Volatile alkaloids Volatile oil Resin	Aenaniline Oenanthotoxin Terpine Cicutoxin	 Lose toxin with age. 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	 Roots and seeds Entire plant 	Livestock, poultry, man	 Vomiting Trembling Dilated pupils 	Alkaloids	Conine	Used by Greeks as a poison.	
Black Locust	Inner bark, seed, flowers, leaves	Horses, cattle, sheep, poultry, humans	 Purgative Stupor Perspiration 	Glycoside Phytotoxin	Robinin		
Pokeweed Problems in spring, summer, fall	 Roots are the most poiso- nous part Entire plant 	Cattle, horses, swine, man	 Irritated skin Vomiting 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.	 Seeds are the most toxic part Entire plant 	Cattle, horses, swine, poultry, man, dogs	 Pupils dilate Thirst Dry, burning skin 	Alkaloids Alcohol	Atropin Hyoscine Scopolamine Tremetol	Green or dry plants are hazardous.	
 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	 Bloody stool Excessive bleeding from fly bites Convulsions Death 	Enzyme	Triaminase	 Hay can cause problems. Vitamin B1 is inactivated. Depression of bone marrow. 	

*See a veterinarian for specific treatments.

	Toxic Dort of	Animals		Type Poison		Notoo and	
Plant	Plant	If Known	Symptoms	Category	Specific	Treatment*	
Potentially Hazardous (continued)							
White Snakeroot	Leaves, stems, green flower- heads	Cattle, sheep, horses, man, domestic animals	 Trembling Slobbering Vomiting 	Alcohol Glycoside	Tremetol	 Dry plants are slightly toxic. Poison is cumulative. 	
Buttercup Problems most likely at flowering time	Stems, leaves	All animals	 Death Ulcerated skin Red milk Bitter milk 	Irritant oil	Protoaemonin	 Prickly sensation in mouth. Harmless when dried. Certain plant species are more hazardous. 	
Equisetum (scouring rush)	Tops	 Cattle and sheep on pasture Horses on hay 		Enzyme Alkaloid	Thiaminase	 Vitamin B1 is inactivated. Treat with massive thiamine dose. 	
Hemp Dogbane 1. 15-30 grams can kill a cow or horse	Green or dry leaves and tops	Cattle, horses, sheep	 Increased temperature Sweating but cold extremities Dilation of pupils Discoloration of mouth and nostrils Refusal to eat or drink 	Resin Glycoside	Apocynin Apocynein Cymarin	 Treat with tannic acid followed by emptying stomach. Can remain toxic in hay. 	
Ergot 1. Mainly in dallis- grass and tall fescue 2. Cattle deaths reported in extreme cases in dallisgrass	Hard fungal bodies found in mature seed- heads	Cattle, horses, sheep	 Trembling Incoordination Lameness Loss of tail or hoof Convulsions Delirious or excitable 	Alkaloid	Ergotamine	 Found only in seedheads. More serious. when cattle graze heavily infested fields when seedheads are present. Clipping seed- heads reduces problem. 	

*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.