USDA United States Department of Agriculture

Illinois Grazing Manual Fact Sheet
SPECIES • POISONOUS PLANTS

Corn Cockle

Plants of fencerows, roadsides, barnyards, fields, and waste places.

Description

Agrostemma githago L.: Corn cockle is an erect, branched, silky stemmed annual herb that grows up to 3 feet tall. Its oppositely arranged, linear or lanceolate leaves are 3 to 5 inches long, smooth on the margins, and clothed with silky hairs. The red flowers are borne singly at the ends of the branches. The calyx lobes of the flowers are longer than the calyx tubes. A large seed capsule develops within each flower. This seed capsule contains many warty-covered dark-brown or black seeds that are about the size of a grain of wheat.

Occurrence: Corn cockle, a native of Europe, grows throughout most of North America. It is widely established weed of grainfields, roadsides, railroads, fallow fields, and waste places. Modern seed cleaning has reduced its abundance considerably.

Conditions of Poisoning

The green parts of corn cockle contain so little poison that animals can browse them freely without showing any ill effects. But the seeds are so poisonous that any animal may die from eating ¼ to 1 pound ground cockle seed per 100 pounds of body weight. Although unbroken seed contains as much poison as cracked or ground seed, it can be eaten in greater quantities without danger because the toxic principle is rarely released from the unbroken seed.

Cockle poisoning occurs most frequently among poultry and is the result of feeding grain or screenings containing considerable quantities of whole and broken cockle seed. Sheep, cattle, and hogs may graze enough seed directly from plants to be poisoned, but most poisoning occurs from cockle infested grain or screenings. Among animals, pigs are the most easily poisoned. Human poisoning, now very rare, used to occur from eating bread made of flour ground from cockle-infested wheat.

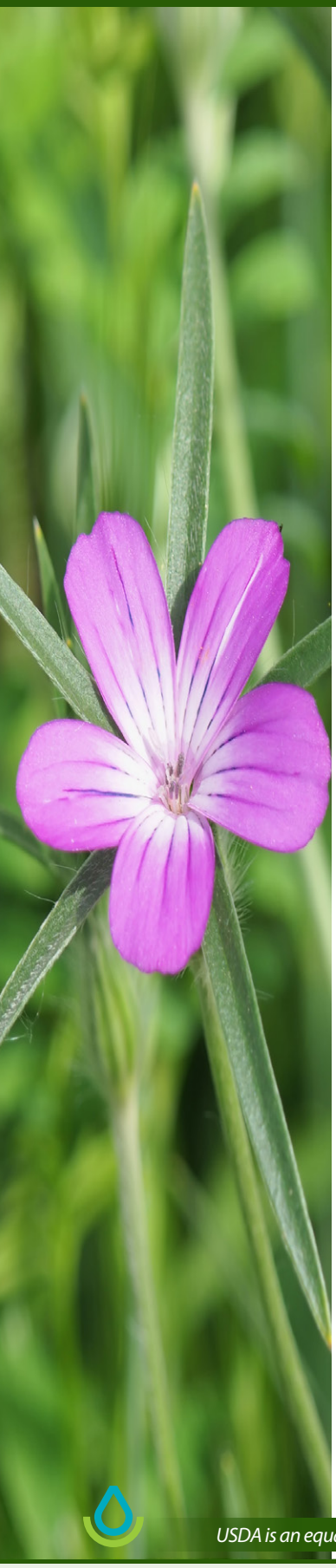
Control

Remove corn cockle from pastures and grainfields and use only seed that is free from corn cockle seed in planting grainfields. Do not feed screenings or grain that contains cockle seed in planted grainfields. Do not feed screenings or grain that contains cockle seed, and do not graze animals where corn cockle is growing.

Toxic Principles

The entire corn cockle plant, but especially the seed, contains a glucoside, githagin, and the saponin agrostemmic acid.

more ►



Clinical Signs

Although chronic corn-cockle poisoning may follow the eating of small amounts of corn cockle seed over a long period, acute poisoning from eating large amounts of the seed occurs more frequently. Some of the signs of corn cockle poisoning vary with different species of animals, but the following are common to all: colic, inability to stand, rapid breathing, and coma preceding death.

Pigs, the most susceptible of all animals to cockle poisoning, lie down with their snouts on the ground. Vomiting occurs, along with colic, diarrhea, and evacuation of foul-smelling, frothy fecal material. Spasms may precede death.

The first observable signs in cattle are nervousness, slobbering, and grinding of the teeth, followed by excitement, colic, and coughing lasting from 5 to 8 hours. Fetid diarrhea, rapid and noisy respiration, rapid and weak pulse, a progressive decline in temperature, and coma precede death. Death occurs about 24 hours after the onset of clinical signs. Corn cockle poisoning in horses begins with slobbering, yawning, colic, rapid, weak pulse and respiration, and ends in a coma and death. Cockle poisoning does not cause convulsions.

Necropsy

Hemorrhages on the heart and diaphragm and extensive congestion in the liver, kidneys, and spleen are constant findings in corn-cockle poisoning. The gall bladder and bile duct are edematous and contain scattered hemorrhages. Variable degrees of inflammation may be found in the stomach, with severe inflammation in the small intestine. Microscopic examination reveals congestion, hemorrhage, and necrosis of some cells in the liver. Hemorrhage and albuminous degeneration have been found in the kidneys.

Treatment

Any animal suspected of suffering from corn cockle poisoning should have immediate treatment. If a cockle poisoned animal is not properly treated, it is likely to die. Digitalis, a potent drug that should be administered only by a veterinarian, will counteract some of the poisonous effects of cockle. If given soon enough and in proper dosage, digitalis may save the poisoned animal. Oils and demulcents given by mouth have also been recommended.

References

Evers, Robert A., and Roger P. Link. Poisonous Plants of the Midwest and Their Effects on Livestock, 1972. Special Publication 24, College of Agriculture, University of Illinois at Urbana-Champaign.

USDA United States Department of Agriculture
Natural Resources Conservation Service
UNIVERSITY OF ILLINOIS EXTENSION
College of Agriculture, Consumer and Environmental Sciences
Illinois Department of Agriculture
ILGLCI Illinois Grassland Conservation Initiative