

Spiny cocklebur

(*Xanthium spinosum* L.)

Gary N. Ervin, Ph.D., Department of Biological Sciences, Mississippi State University

John D. Madsen, Ph.D., Geosystems Research Institute, Mississippi State University

Ryan M. Wersal, Geosystems Research Institute, Mississippi State University

Row Crop



Fig. 1. Spiny cocklebur spreads by seeds clinging to animal fur or human clothing.



Fig. 2. Spiny cocklebur has male and female flowers on the same plant.



Fig. 3. Spiny cocklebur plants grow to five feet tall.

Introduction

Problems Created

Spiny cocklebur is an annual plant found in highly disturbed habitats and farm areas. The burs (fruits) of this species become tangled in the fur of livestock, increasing costs to the consumers of wool products. It competes with crops and is a nuisance when growing with hand-harvested crops. The seeds and seedlings of spiny cocklebur are poisonous if consumed, and they are particularly toxic to swine and horses.

Regulations

Spiny cocklebur is listed as a “B” designated quarantine weed in Oregon and a class “C” noxious weed in Washington. In Arkansas, the genus *Xanthium* is listed as noxious weeds, likely more for spiny cocklebur’s congener *Xanthium strumarium* (rough cocklebur), which has a much wider distribution in the state.

Description

Vegetative Growth

Spiny cocklebur is an annual plant that blooms in summer. It grows to 5’ tall with striate stems that are yellowish or brownish gray. The leaves may be entire or toothed or lobed. The lower surface of the leaves is covered with white hairs, and the upper leaf surface is white-veined. Leaves are 1” to 3” long and have a 3-forked spine at the leaf base, giving this species the common name “spiny” cocklebur.

Flowering

Male and female flowers are separated, but they occur on the same plant. Male flowers form above the female flowers in the axils of the uppermost leaves. Female flowers occur in the leaf axils lower on the plants. As the fruit develops from the female flowers, the bur that bears a beak and hooked bristles begins to develop. On average, plants produce 150 burs, each containing two seeds.

Dispersal

A primary dispersal mechanism for spiny cocklebur is “hitchhiking” on animal fur or human clothing. The fruits float in water, and can also be effectively dispersed by water. Seeds can be spread by clinging to feedsacks or in contaminated hay. Ungerminated seeds remain viable for several years in the soil.

Spread by

Spiny cocklebur is spread by livestock and the transport of livestock from infested fields to uninfested fields.

Habitat

Spiny cocklebur is found in open and disturbed waste places. It can be found growing along roads, barnyards, pastures, vacant lots, and other disturbed sites. It also can be common around moist disturbed sites such as along ditches, canals, river terraces, and floodplains.

Distribution

United States

Spiny cocklebur is native to South America, but now is found throughout the contiguous U.S., though it is not recorded from Arkansas, Louisiana, Minnesota, North Dakota, Oklahoma, South Dakota, Vermont, Wisconsin, or Wyoming.

MidSouth

Spiny cocklebur is not a widespread pest in the MidSouth. It has not been recorded from Arkansas or Louisiana, and it is only known from one county each in Mississippi, Tennessee, and Alabama.

Control Methods

Biological Control

There are no approved biological control agents for this species.

Chemical Control

Spiny cocklebur is susceptible to a variety of herbicides that are commonly used for broad-leaved weed control. Several auxin mimicking herbicides can be used such as 2,4-D at a rate of 1 to 2 quarts per acre, triclopyr at a rate of 3 to 4 pints per acre, and 2,4-DB at 0.8 to 1 pint per acre. The use of an auxin mimicking herbicide may be more selective for grass species than other herbicide options. Glyphosate is effective at rates of 2 to 4 quarts per acre. Imazapyr can be applied at a rate of 3 to 4 pints per acre, and imazaquin can be applied at 1.8 to 2.4 ounces per acre for spiny cocklebur control. The use of glyphosate, imazapyr, and imazaquin will typically result in non-target plant injury. Herbicide spray solutions should contain an appropriate surfactant to ensure complete leaf wetting. Herbicide applications should be made to young 3 to 5 leaf plants during active growth to maximize treatment efficacy.

Mechanical Control

Plants can be hand pulled before burs form; however, after the formation of burs plants should be burned to destroy the seeds. Even unripe seeds can mature on cut or pulled plants. Mowing can be effective, but as with hand pulling, mowing should be carried out before burs are formed. Burning would be effective at removing standing plants and killing seeds; however, this method is rarely used in controlling spiny cocklebur.

Physical Control

No physical controls are currently recommended for Spiny cocklebur.

Table 1. Suggested chemical control methods for spiny cocklebur.

Herbicide	Foliar spray rate per acre
2,4-D	1-2 quarts
2,4-DB	0.8-1 pint
Glyphosate	2-4 quarts
Triclopyr	3-4 pints
Imazaquin	1.8-2.4 oz.
Imazapyr	3-4 pints

References

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John D. Madsen, Ph.D.
Geosystems Research Institute
Mississippi State University, MS 39762-9555
(662) 325-2428
jmadsen@gri.msstate.edu

