

Sorghum XV-4

Wireworms

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Wireworm larva.

Identification (and life cycle/seasonal history):

Wireworms feed on a variety of grassy plants and on tuberous plants such as potatoes and sugar beets—depending on the species. In the Northern Great Plains, corn is the primary agronomic wireworm host, followed by sorghum and wheat. There are at least five species from four genera present but the most abundant are *Melanotus similis* and *M.pilosus*.

The beetles are $\frac{1}{4}$ to $\frac{3}{4}$ inches (6 to 19mm) in length, usually brown or black, elongate and tapering at each end. They overwinter as adults under tree bark, boards or logs or in grass clumps. When turned on their back, they arch the head, thorax and abdomen, then snap the two sections against a hard surface which propels them in the air and they land on their feet. This process causes a clicking noise, hence the name "click beetle." The females deposit eggs in the soil among the roots of grassy plants. After hatching, the larvae feed on roots, seeds or bore into stems of grassy plants including corn, sorghum and wheat. The more mature larvae are hard, yellowish-brown to copper colored and resemble a piece of wire. It takes two to five years for the egg-to-adult cycle to be completed dependent on the species.

Plant Response and Damage

Wireworm damage is usually most severe when the crop follows sod or small grain crops. The larvae feed on germinating seed, resulting in spotty stands and weakened plants. The larvae may bore into the stalk of the plant, killing the growing point which may cause excessive "goose necking" or broken stalks.

Management Approaches

There are no cultural practices, resistant varieties or biological control known to be effective for wireworm control.

Chemical Control

Surveying

Sampling for wireworms, particularly in suspect field situations, planting after sod, wheat, forage sorghum, or in ecofallow rotations following wheat, is a recommended practice. Soil insects are generally difficult to detect but bait station traps may be useful for wireworms. Each bait station should be dug four inches deep (10 cm) and nine inches (23 cm) wide. Place $\frac{1}{2}$ cup of a corn-wheat seed (untreated) mixture in the bottom of the hole, add water if the soil is dry. Fill the hole and mound it slightly, then cover it with black plastic. The plastic can be held in place by spreading dirt around the edge. The plastic increases the soil temperature. The bait stations should be in place two to three weeks before planting. Because of variability, two bait stations per acre is recommended. Check the bait stations prior to planting and record the number of wireworms in each.

Economic Thresholds

By counting the larvae in and around the bait station, the potential for a wireworm problem can be determined. An average of one wireworm larvae per bait station (assuming two stations/acre) is the equivalent to twenty thousand wireworms/acre. Plant damage may be indicative of a need for an emergency treatment. At the rate sorghum is generally planted, a reduction of two percent of the stand may not reduce yield but losses greater than that probably warrant treatment.

- *Seed treatment is a general recommendation when sorghum is being planted in situations where wireworms are likely, such as in ecofallow rotations following wheat.*

Product List for Wireworms

Insecticide	Product Per Acre (Fl oz. or oz. product)	Preharvest interval, remarks
Consider seed treatment with lindane, lindane-diazinon or imidacloprid (Gaucho) following label directions for mixing. Gaucho must be mixed in commercial seed treaters only.		
Furadan 4F	(2.5 fl.oz./1000 ft-row)	30" rows in 7-20 gallons water into seed furrow.
Counter 15 ^R or 20G ^R	(15G: 8.7 lb/AI) (20G: 6.5 lb/A)	Band application, 30" rows, 1 application per year

^R Restricted Use Pesticide.

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Categories: Sorghum, Insects, Wireworms

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