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# WIREWORM CONTROL

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# WIREWORM CONTROL

Wireworms each year cause serious damage to wheat, barley, oats, corn and various other crops, including potatoes, sugar beets and garden crops. The worms feed on the germinating seed and bore into the underground parts of the plants.

Of the various species doing crop damage, the prairie grain wireworm is the most widespread. This species occurs mostly in the lighter and well-drained soils. Only the larvae or worms cause crop damage.

## CHEMICAL CONTROL RECOMMENDATIONS

Whenever wireworms threaten annual crops, some means of protection is advised. Summerfallow, or seeding legumes such as alfalfa, has provided good control of wireworms. However, the use of insecticides as seed treatment has come into use and is now being recommended.

The amount of chemical necessary to control wireworms effectively will vary with the kind of grain and the rate of seeding. The most satisfactory control can be expected when 0.7 to 1.0 ounce of actual Gamma BHC is applied per acre. Lesser amounts of chemical will provide temporary control. However, whenever small grains follow each other in the rotation, the above dosages are recommended. Applying too much chemical may result in damage to seed by reducing the germination.

The following tables show the amount of insecticide required per bushel to obtain the necessary amounts of insecticide per acre. These rates apply to all small grains except corn, sugar beets and potatoes.

When seeding rates per acre are:	LINDANE 75%	LINDANE 25%
	WETTABLE POWDER	WETTABLE POWDER
	Ounces of insecticide required per bushel:	
3/4 bu.	1-1/4 to 2.0	4 to 4-1/4
1 bu.	1 to 1.5	3 to 4
1-1/4 bu.	3/4 to 1-1/4	2-1/2 to 3-1/2
1-1/2 bu.	3/4 to 1	2 to 3
1-3/4 bu.	3/4 to 1	1-3/4 to 2-1/2
2 bu.	1/2 to 3/4	1-3/4 to 2
2-1/4 bu.	1/2 to 3/4	1-3/4 to 2
2-1/2 bu.	1/2 to 3/4	1-1/2 to 1-3/4

Lindane may be applied either as a dust or slurry treatment. The rates of application are the same for either treatment. Lindane is compatible with any of the mercury seed treatments and can be applied simultaneously or separately.

When seeding rates per acre are:	TWO-WAY PROTECT- ANTS (MERCURY AND BHC COMBINATIONS)	BENZENE HEXA- CHLORIDE 10% GAMMA BHC
		Ounces of insecticide required per bushel:
3/4 bu.	2-1/2 to 3-1/4	10 to 12
1 bu.	1-3/4 to 2-1/2	7.5 to 10
1-1/4 bu.	1-1/2 to 2	5 to 9
1-1/2 bu.	1-1/4 to 1-3/4	4.5 to 7.5
1-3/4 bu.	1 to 1-1/2	4 to 6.0
2.0 bu.	1 to 1-1/4	3.5 to 5.0
2-1/4 bu.	1 to 1-1/4	3 to 5.0
2-1/2 bu.	1	3.0 to 4.0



The two-way seed protectants are fungicide and insecticide combinations. Therefore, it will not be necessary to add any additional fungicides when treating small grains for wireworms. These may be applied as a dust or slurry. They are generally not recommended on corn.

Benzene Hexachloride 10 percent Gamma BHC is the cheapest seed treatment to use. It has an objectionable odor and should not be applied by commercial treaters. The wettable powder is applied as a dust only. It has been used primarily as a drill box application.

The lindane and benzene hexachloride materials are also recommended as seed treatments for corn. The rates of application are from 2 to 2-1/2 times that of small grains.

#### CAUTION

Lindane or benzene hexachloride is not recommended for wireworm control in potatoes because they may give an off flavor to the potatoes.

#### OTHER CONTROL METHODS

Aldrin, chlordane and heptachlor have been tested as soil treatment for the control of wireworms in potatoes. These materials are generally too expensive to use on small grains. Aldrin and chlordan are now being recommended in North Dakota. Heptachlor not acceptable for general use as yet.

Aldrin should be applied at 3 pounds per acre in a spray as a broadcast treatment when the soil is being prepared for planting. Dilute the aldrin with the proper amount of water to assure adequate coverage and apply as a single application on the surface of the soil just before the last harrowing or disking. This last operation will work the aldrin into the soil to a depth of 3 to 6 inches. Cultivation should follow immediately after application. Soil treatments are effective for one or more years.

Chlordane applied as a spray or dust will provide effective control for one year or longer. Rates of application are from 2 pounds actual per acre in sandy soils to 3 pounds actual per acre in clay or loam soils. Treated potatoes show no off-flavors.

Heptachlor, although not generally recommended can be applied as a spray or dust at rates of 1 to 2 pounds actual per acre. Results will compare with chlordane.

Chlordane and Heptachlor must be worked into the soil to a depth of three to four inches just prior to planting.

Either of these materials may be mixed with fertilizer and applied in one operation or they may be applied by broadcasting or banding.

Sugar Beets. Growers who have experienced wireworm problems in sugar beets should contact their local sugar beet representative for recommendations on seed treatment. Seed treatment has been effective when insecticidal rates per acre have been about 4 times as great as for small grains.

### PRECAUTIONS NECESSARY

Seed treating should be done just before seeding, as treated seeds tend to deteriorate if held in storage longer than 2 to 3 weeks

Treat only the amount of seed to be sown. Any seed left over cannot be marketed. It should not be fed to livestock either.

Seed treatment should not be used in fields intended for potatoes or root crops because of the possibility of taste contamination from the chemical.

When making dust applications, avoid inhaling dust and do the work in well-ventilated rooms.

