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# Control of Grasshoppers through Chemical Sprays or Dusts or Baits

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Control of Grasshoppers through  
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or Baits

by

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Entomologist

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Brookings, South Dakota

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Cooperative Extension Work, U. S. Department of Agriculture and South Dakota State College cooperating. Distributed in furtherance of Acts of Congress of May 8 and June 30, 1914. George I. Gilbertson, Director of Extension.

Grasshoppers may be effectively and economically controlled through chlordane or toxaphene sprays or dusts. These should be prepared according to the following recommendations:

Sprays - - - - - Chlordane  $\frac{1}{2}$  to 1 lbs. per acre  
or  
toxaphene 1 to  $1\frac{1}{2}$  lbs. per acre

Dusts - - - - - Chlordane  $\frac{3}{4}$  to  $1\frac{1}{2}$  lbs. per acre  
or  
toxaphene  $1\frac{1}{2}$  to  $2\frac{1}{2}$  lbs. per acre

The lower dosages are to be used on small hoppers and in short, dense succulent vegetation. The higher dosages are to be used in tall dense vegetation, or when vegetation is beginning to dry or when long residual action is desired. When grasshoppers are mature, use the higher dosages.

Liquid sprays are usually more effective than dusts and they are also cheaper. If liquid spray is to be applied, use emulsion concentrate in water. The amount of chlordane or toxaphene to be used per acre is stated above, the amount of water that is to be used will vary with the availability of the water and with the equipment that is employed for applying the spray and varies from 3 to 50 or more gallons per acre.

If dust is applied and it is being planned to use a 5 percent dust, figure 20 pounds of the dust to actually contain one pound of chlordane or toxaphene.

The sprays or dusts may be applied by ground sprayers, ground dusters or by airplanes.

Do not feed forage treated with chlordane or toxaphene to dairy animals or to animals being finished for slaughter.

If grasshoppers were injurious on ones farm last year, the chances are good that they will be even more harmful this year. If possible, the areas containing grasshopper eggs should be located or if this is not done, then fields of small grain and the grassy edges of all fields should be examined weekly for the appearance of dangerous numbers of young grasshoppers. Roadsides, grassy field borders, ditch or canal banks, idle weedy fields, or entire fields of small grain may contain such infestations.

If such infestations are found, the infested areas should be sprayed or dusted after the main hatch has been completed and before the hoppers have moved into the grain. If additional hoppers hatch later and they are not being killed by the residual action of the insecticide a second spraying or dusting may be necessary.

If the hoppers have already moved into the borders of a field of small grain, spray or dust the hatching bed, the infested borders of the field of small grain and in addition, spray or dust a swath of the uninfested grain ahead of the invading hoppers.

If grasshoppers are permitted to invade a field of small grain and scatter all through it, much unnecessary damage will be done by the hoppers. If spraying or dusting is to be practiced to control the hoppers under these conditions, the entire field must be treated, it must be strip-sprayed or dusted or an attempt must be made to kill the hoppers through poison bait.

Sometimes grasshopper eggs are laid throughout a field of small grain and if such a field is used the following year to produce another crop of small grain and if proper tillage has not been practiced to destroy the grasshopper eggs, young hoppers may hatch throughout that field. Under these conditions one may attempt to kill the hoppers with poison bait or by means of a spray or dust of chlordane or toxaphene.

Solid spraying or dusting of entire fields is costly and time consuming. Strip-spraying or dusting of entire fields infested with grasshoppers has been somewhat successful in eliminating such field of grasshoppers, but if this procedure is followed, it should be done as early in the season as possible.

Corn fields situated next to grasshopper infested small-grain fields, idle land or other infested fields may be protected from damage by spraying or dusting the margin of the corn fields and, in addition, the margin of the adjacent infested field or fields.

A separate pamphlet dealing with the control of insects in alfalfa has been prepared and is available upon request.

### Baits

#### Wet Bait

Mill run bran - - - - -	25 lbs.
Saw dust- - - - -	3½ bushels
Chlordane - - - - -	½ pound
or	
Toxaphene - - - - -	1 pound
or	
Sodium fluosilicate - - - - -	6 pounds
Water - - - - -	10 - 12 gallons

Use 20 lbs. of wet bait per acre spread uniformly; apply through ground operated bait spreaders.

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#### Dry Bait

Bran- - - - -	-100 lbs.
Chlordane - - - - -	-½ lb. dissolved in ½ gal. kerosene
or	
Toxaphene - - - - -	-1 lb. dissolved in ½ gal. kerosene

Use 5 to 10 lbs. per acre from plane. Especially effective in short grain and under dry conditions. Wet bait broadcasting machinery is not adapted to apply such a small amount of dry bait per acre. Swath 100 feet, flight height 80 feet.

Precautions: Both wet and dry baits are poisonous to livestock. Keep livestock away from baits. Clean up all spilled bait on air strips or any other area.