1975

EC75-1509 Insect Control Guide for Corn and Sorghum in Nebraska

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Insect control suggestions in this guide are based on University of Nebraska research results, U.S.D.A. recommendations, and label registrations. Insect control is not perfect. The suggestions are designed to benefit Nebraska farmers when they need control programs.

In some instances trade names have been used. No endorsement is implied by the Nebraska Cooperative Extension Service and no discrimination is intended.

TOXICITY OF INSECTICIDES

All insecticides are poisonous and must be used with caution. They should always be stored in the original container out of the reach of children, uninformed adults, and livestock. Empty containers and left-over materials must be disposed of by burying at least 18 inches in the soil away from water supplies. It is very important that the labels of every insecticide be studied until they are understood. Safety precautions and use instructions are on all labels. Follow these completely to avoid accidental poisoning or death, and to prevent illegal residues in crops.

The highly toxic insecticides in this publication are ethyl parathion, methyl parathion, Phosdrin, EPN, Di-Syston, Thimet, Counter, Dyfonate, Dasanit, Systox, and Mocap. Skull and crossbones and the word Poison in red appear on the label of highly toxic materials. These chemicals are not recommended for farmer application as sprays. They must be applied only by well-trained, responsible and insured commercial operators. However, with proper precautions, farmers should be able to use granular formulations for soil application to control corn rootworms. Furadan 4F is highly toxic orally--Farmers can use this product if special precautions are taken.

Moderately highly toxic insecticides are Furadan 10G, dieldrin, toxaphene, Ethion, Trithion, aldrin, heptachlor, and lindane. They must be used with special care. Familiarize yourself with all the warnings given on the labels.
Registrations of some chemicals listed in this publication are subject to review and withdrawal in 1975. Visit with your county agricultural agent before making the final decision of which insecticide to use.

INSECTS BELOW GROUND

CORN ROOTWORM LARVAE

Corn rootworm larval damage is most likely to occur in continuous corn production fields. If one or more beetles per plant were observed the previous August, soil insecticides at planting or post-plant usually are indicated. Corn following other crops may be damaged by rootworm larvae if adult populations in adjacent corn fields were numerous the previous August. Rotation is usually an effective prevention for corn rootworms, and soil insecticides are not necessary in most situations.

Effectiveness of soil insecticides is reduced if soil remains dry after planting, excessive rainfall occurs, or soils are highly alkaline. Applications before May 7 may be less effective than applications after May 7 due to decomposition of the insecticide. Furadan and Counter appear to be more consistent in performance.

It is very important to cover insecticides with soil. Granules or liquids remaining on the surface after application are lost.

Fertilizer in combination with a soil insecticide must be applied in a band on each side of the seed furrow - not in the furrow or below the seed.

Some injury to roots will occur, regardless of material used, when rootworm populations are high or egg hatch is extended.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT FORMULATION PER 1000 LINEAR FEET</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counter 15G</td>
<td>8.0 ounces</td>
<td>Follow label restrictions.</td>
</tr>
<tr>
<td>Dasanit 15G</td>
<td>8.0 ounces</td>
<td>Field, sweet and popcorn.</td>
</tr>
<tr>
<td>Dyfonate 10G</td>
<td>12.0 ounces</td>
<td>Field, sweet and popcorn. One application per season. 45 days from harvest.</td>
</tr>
<tr>
<td>Dyfonate 20G</td>
<td>6.0 ounces</td>
<td>Same as 10G.</td>
</tr>
<tr>
<td>Furadan 10G (carbofuran)</td>
<td>12.0 ounces</td>
<td>Field corn. Use only one time.</td>
</tr>
</tbody>
</table>
Thimet 15G (phorate) 8.0 ounces  Field and sweet corn. Can be used at planting and/or cultivation time.

**PLANTING TIME LIQUID:**

Furadan 4F (carbofuran) 2.4 fluid oz.  Split boot in combination with starter fertilizers OR 7 inch band over the row. Use only once per season.

**POST EMERGENCE GRANULES:** (Before June 10 for best results)

<table>
<thead>
<tr>
<th>Product</th>
<th>Weight</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bux 10G</td>
<td>12.0 oz</td>
<td>Basal only. Field, sweet, and popcorn.</td>
</tr>
<tr>
<td>Dasanit 15G</td>
<td>8.0 oz</td>
<td>Basal only. Field corn.</td>
</tr>
<tr>
<td>Dyfonate 10G</td>
<td>12.0 oz</td>
<td>Over plants or basal. Field, sweet and popcorn. 45 days. One application per season.</td>
</tr>
<tr>
<td>Dyfonate 20G</td>
<td>6.0 oz</td>
<td>Same as 10G</td>
</tr>
<tr>
<td>Di-Syston 15G (disulfoton)</td>
<td>8.0 oz</td>
<td>Basal only. Registered for field, sweet and popcorn.</td>
</tr>
<tr>
<td>Furadan 10G (carbofuran)</td>
<td>12.0 oz</td>
<td>Over plants or basal. Field corn.</td>
</tr>
<tr>
<td>Thimet 15G (phorate)</td>
<td>8.0 oz</td>
<td>Over plants or basal. Field and sweet corn.</td>
</tr>
<tr>
<td>Diazinon 14G</td>
<td>8.5 oz</td>
<td>Over plants or basal. Field, sweet and popcorn.</td>
</tr>
<tr>
<td>Mocap 10G*</td>
<td>12.0 oz</td>
<td>Basal only. Field corn.</td>
</tr>
</tbody>
</table>

*Mocap is also registered for planting time applications. Under certain conditions in research plots, stand has been reduced when banded over the row at planting time.*
POST EMERGENCE - LIQUIDS

Diazinon Ag. 500 2.4 fluid oz. Apply bands on each side of row and cover with soil immediately at last cultivation or lay-by.

CUTWORMS AND WIREWORMS

Corn following sod or stubble is most likely to be damaged by wireworms and cutworms. Continuous, clean cultivated corn is relatively free of wireworm infestations, and is a deterrent to cutworm infestations except in low-land fields that have a history of cutworm infestations.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldrin*</td>
<td>2 pounds</td>
<td>Broadcast 2 to 3 weeks before planting or before replanting and disk 3 or 4 inches into the soil. DO NOT USE on fields that will be planted to root crops or legumes following corn. DO NOT USE ON DAIRY FARMS.</td>
</tr>
<tr>
<td>Heptachlor</td>
<td>2 pounds</td>
<td></td>
</tr>
<tr>
<td>Chlordane</td>
<td>4 pounds</td>
<td></td>
</tr>
<tr>
<td>Aldrin*</td>
<td>1 pound</td>
<td>Row spray over seed furrow at planting. Cover with soil. DO NOT USE on fields that will be planted to root crops or legumes following corn. DO NOT USE ON DAIRY FARMS.</td>
</tr>
<tr>
<td>Heptachlor</td>
<td>1 pound</td>
<td></td>
</tr>
<tr>
<td>Chlordane</td>
<td>2 pounds</td>
<td></td>
</tr>
<tr>
<td>Sevin 5% bait</td>
<td>1 pound</td>
<td>20 pounds 5% bait per acre broadcast or band. Effective only when cutworms are 1/2 inch or less long, and soil surface is moist.</td>
</tr>
<tr>
<td>(Cutworms)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Diazinon 4 pounds Broadcast and disked in before replanting where stands have been destroyed by cutworms.

**SEED INSECTS**

Planter box treatment with lindane, aldrin*, dieldrin*, heptachlor or diazinon. Follow package directions. Never mix treated weed with feed grains.

*Registrations of aldrin and dieldrin have been cancelled by EPA. Supplies on hand can be used during the 1975 season.

**INSECTS DAMAGING CORN ABOVE GROUND**

**CORN ROOTWORM ADULTS**

Corn rootworm adults may interfere with pollination - if there are sufficient adults to chew silks to husks during the pollen-shed period. Controls are indicated when severe silk chewing is occurring at 25 to 50 percent pollen shed. Most likely to be a problem in late planted corn.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sevin (carbaryl)</td>
<td>1 pound</td>
<td>None</td>
</tr>
<tr>
<td>Ethyl or methyl parathion</td>
<td>4 ounces</td>
<td>12 days. Commercial application only.</td>
</tr>
<tr>
<td>EPN</td>
<td>4 ounces</td>
<td>14 days. Commercial application only.</td>
</tr>
<tr>
<td>Di-Syston (disulfoton)</td>
<td>4 ounces</td>
<td>28 days. Commercial application only. One treatment per season.</td>
</tr>
<tr>
<td>Malathion</td>
<td>1 pound</td>
<td>5 days</td>
</tr>
<tr>
<td>Malathion ULV</td>
<td>4 ounces</td>
<td>5 days. Commercial application.</td>
</tr>
<tr>
<td>Gardona</td>
<td>1 pound</td>
<td>5 days</td>
</tr>
</tbody>
</table>
CHINCH BUGS

Control when migrations are occurring from harvested small grains adjacent to corn or sorghum. Spraying barrier strips around margins of fields is suggested when bugs first begin to damage border rows. Use high gallonage directed at base of plants and on the soil.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxaphene</td>
<td>2 pounds</td>
<td>Do not feed treated foliage.</td>
</tr>
<tr>
<td>Sevin (carbaryl)</td>
<td>2 pounds</td>
<td>None</td>
</tr>
<tr>
<td>Diazinon</td>
<td>1 pound</td>
<td>None</td>
</tr>
</tbody>
</table>

EUROPEAN CORN BORERS

Apply chemical controls when first brood corn borer larvae are present in 50% of corn plants that are 36 inches or higher in extended leaf height, determined by "shot-hole" feeding signs in leaves. There is no reliable guide to the necessity for control of second brood - consider early harvest if second brood appears to be present in large numbers, to reduce field loss. Second brood borers will be more serious in late maturing corn.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazinon 14G</td>
<td>1 pound</td>
<td>10 days</td>
</tr>
<tr>
<td>EPN 4G</td>
<td>0.3 pound</td>
<td>14 days</td>
</tr>
<tr>
<td>Thimet 15G</td>
<td>1 pound</td>
<td>30 days. First brood only.</td>
</tr>
<tr>
<td>Furadan 10G</td>
<td>1 pound</td>
<td>First brood only.</td>
</tr>
<tr>
<td>(carbofuran)</td>
<td></td>
<td>Do not exceed 2 pounds active ingredient for both soil and foliar treatment.</td>
</tr>
<tr>
<td>Thimet 15G or 10G</td>
<td>1 pound</td>
<td>First brood only.</td>
</tr>
<tr>
<td>(phorate)</td>
<td></td>
<td>30 days. Do not make more than 1 application over plants.</td>
</tr>
<tr>
<td>Dyfonate 10G</td>
<td>1 pound</td>
<td>45 days harvest or grazing.</td>
</tr>
</tbody>
</table>
Grasshoppers

Prevent damage to corn by controlling grasshopper nymphs when there are 10 or more nymphs per square yard in field margins.

**MATERIALS**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxaphene EC</td>
<td>2 pounds</td>
<td>Field margins only. Do not feed treated forage.</td>
</tr>
<tr>
<td>Parathion EC</td>
<td>8 ounces</td>
<td>Commercial application only. 12 days.</td>
</tr>
<tr>
<td>Sevin 80WP</td>
<td>2 pounds</td>
<td>No restrictions.</td>
</tr>
<tr>
<td>Malathion EC</td>
<td>1 pound</td>
<td>5 days</td>
</tr>
<tr>
<td>Chlordane EC</td>
<td>1 pound</td>
<td>Field margins only. Do not feed treated forage.</td>
</tr>
</tbody>
</table>

Western Bean Cutworms

Use chemical controls when 14% of plants are infested with larvae in tassels and/or eggs on leaves and corn is 95-100 percent tasselled.

**MATERIAL**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbaryl WP (Sevin)</td>
<td>2 pounds</td>
<td>No restrictions.</td>
</tr>
<tr>
<td>Dylox (Trichlorfon)</td>
<td>1 pound</td>
<td>28 days</td>
</tr>
</tbody>
</table>

Spider Mites

Apply chemical control if 2 to 3 of the large lower leaves are killed by mites and corn has not reached dent stage. Insecticides do not kill eggs, so reinfestation frequently will occur.
<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEFORE AUGUST 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thimet 15G (phorate)</td>
<td>1 pound</td>
<td>30 days. Commercial application.</td>
</tr>
<tr>
<td>Di-Syston 15G (disulfoton)</td>
<td>1 pound</td>
<td>40 days. Commercial application.</td>
</tr>
<tr>
<td>AFTER AUGUST 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thimet 15G (phorate)</td>
<td>1 pound</td>
<td>30 days. Commercial application.</td>
</tr>
<tr>
<td>Di-Syston 15G (disulfoton)</td>
<td>1 pound</td>
<td>40 days. Commercial application.</td>
</tr>
<tr>
<td>Parathion EC</td>
<td>12 ounces</td>
<td>12 days. Commercial application.</td>
</tr>
<tr>
<td>Cygon EC (dimethoate)</td>
<td>8 ounces</td>
<td>14 days forage, 42 grain. Not more than 3 applications.</td>
</tr>
<tr>
<td>Ethion EC</td>
<td>1 pound</td>
<td>50 days. One application. Do not feed treated forage.</td>
</tr>
<tr>
<td>Trithion EC (carbophenothion)</td>
<td>1 pound</td>
<td>21 days. One application.</td>
</tr>
<tr>
<td>Metasystox-R EC (oxydemetonmethyl)</td>
<td>8 ounces</td>
<td>7 days.</td>
</tr>
<tr>
<td>Diazinon EC</td>
<td>8 ounces</td>
<td>None.</td>
</tr>
</tbody>
</table>

**ARMYWORMS**

Control when migration from adjacent fields is sufficient to damage margin rows.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbaryl (Sevin)</td>
<td>1.6 pounds</td>
<td>No restrictions.</td>
</tr>
<tr>
<td>Malathion 57% EC</td>
<td>1.5 pounds</td>
<td>5 days.</td>
</tr>
<tr>
<td>Dylox SP</td>
<td>1 pound</td>
<td>21 days. One application.</td>
</tr>
</tbody>
</table>
SORGHUM INSECTS

CORN EARWORMS AND FALL ARMYWORMS

Infestations may occur in whorls, and later in heads. Usually not feasible to control whorl infestations. If two or more larvae per head are present, controls may be profitable.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sevin 80WP</td>
<td>1.6 pounds</td>
<td>21 days for grain.</td>
</tr>
<tr>
<td>Toxaphene</td>
<td>1 pound</td>
<td>28 days. Do not feed treated forage to animals being finished for slaughter. DO NOT USE ON DAIRY FARMS.</td>
</tr>
</tbody>
</table>

GREENBUGS AND CORN LEAF APHIDS

Corn leaf aphid control is seldom necessary unless infestations are severe at the time the head is in the boot or at early head emergence, or sorghum is under drought stress.

Economic levels of greenbugs will depend upon stage of plant development, the variety grown, and growing conditions. Generally, yield increases can be expected from control if the lower two leaves are destroyed. After heading, predators and parasites may decrease greenbug populations rapidly. If more than 15% of greenbugs are parasitized (mummies), chemical controls should not be used.

Planting time applications of Di-Syston or Thimet granules will prevent infestations from developing on seedling sorghum if root development and moisture are sufficient for plant uptake. Protection should last about 30 days. There is evidence that planting time applications may cause development of resistant greenbugs, complicating chemical control later in the season.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT ACTIVE INGREDIENT PER ACRE</th>
<th>RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethoate EC</td>
<td>6 ounces</td>
<td>28 days. Use drop nozzle, so entire plant is covered.</td>
</tr>
<tr>
<td>Diazinon EC</td>
<td>8 ounces</td>
<td>7 days. Use drop nozzles.</td>
</tr>
<tr>
<td>Malathion 57% EC</td>
<td>1 pound</td>
<td>7 days. Use drop nozzles.</td>
</tr>
<tr>
<td>Ethyl parathion EC</td>
<td>8 ounces</td>
<td>12 days. Commercial application.</td>
</tr>
<tr>
<td>Di-Syston (disulfoton)</td>
<td>4 ounces</td>
<td>28 days. Commercial application.</td>
</tr>
</tbody>
</table>
Thimet 15G  
(phorate)  
8 ounces  
28 days. One application.

Di-Syston 15G  
(disulfoton)  
8 ounces  
30 days

SEED INSECTS IN SOIL

Seed treatment in planter box with aldrin, heptachlor, lindane, diazinon, or dieldrin. Follow package directions. NEVER MIX TREATED SEED WITH FEED GRAINS.

CONTAINER DISPOSAL

Proper disposal of insecticide containers is very important. Serious accidents have occurred when "empty" containers have not been disposed of safely. Suggested methods of disposal are:

PAPER BAGS: Be certain that all contents have been emptied into applicators or tanks. Burn paper containers, not to exceed 50 pounds, in open fields where; (1) regard is given to wind direction in relation to people, domestic animals, and water supplies, (2) where such burning is not in violation of Federal, State, or local ordinances, and (3) provisions are made to avoid contamination of surface water.

METAL, GLASS, OR PLASTIC CONTAINERS: Thoroughly rinse containers at least 3 times with water and dump rinse material into tanks to be used with regular applications. Recycle 5 gallon or larger metal drums where possible after complete decontamination. Containers that cannot be recycled should be punctured, crushed, and buried in a landfill, or 24 inches below the soil surface in a location that will not result in contamination of water, crops, man or animals.
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