

E.M. 2921 (Rev.)
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WASHINGTON STATE UNIVERSITY

INSECT AND MITE PESTS
OF
HOME AND GARDEN

COOPERATIVE EXTENSION SERVICE • COLLEGE OF AGRICULTURE • WASHINGTON STATE UNIVERSITY • PULLMAN

In cooperation with the United States Department of Agriculture

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To simplify the presentation of information, it is sometimes necessary to use trade names. No endorsement of products is intended.

PRECAUTIONS IN USING PESTICIDES

INTRODUCTION

Control measures are described for the more common pests (weeds or insects) normally encountered in Washington. This information is based on research by scientists of Washington State University, the USDA, and other agencies. There is no guarantee that the use of this information will provide satisfactory pest control and not cause plant injury or soil/plant residue problems. However, research data indicate that safe, effective control can be expected when directions for use are carefully followed and proper precautions are observed. Your County Extension Agent can provide or obtain additional information if needed.

SAFETY PRECAUTIONS

PESTICIDES ARE POISONOUS. Use only when needed and handle with care. Heed and follow, **ALL PRECAUTIONS** on the labels.

STORE PESTICIDES where they will not contaminate food or feed, and where children and animals cannot reach them. Keep them in their original containers, tightly closed, and in a dry place.

AVOID CONTACT with pesticides. If any is spilled on skin or clothing, wash thoroughly and change clothing **IMMEDIATELY.**

AVOID INHALATION of dusts or mists.

WASH CLOTHING each day before re-use.

WASH HANDS AND FACE before eating or smoking and immediately after completing the pesticide application. Do not smoke while applying or mixing pesticides.

IF ILLNESS OCCURS during or shortly after application call a physician immediately.

PROTECT FISH AND WILDLIFE. Do not apply pesticides in any manner that will contaminate lakes, streams, or ponds or irrigation ditches or canals. Do not clean spray equipment or dump excess material near such bodies of water.

DISPOSE OF EMPTY PESTICIDE CONTAINERS so that they cannot be used for other purposes. When possible, puncture, crush, or break them (except for aerosol cans). Large containers may be taken to a sanitary land-fill dump, or buried at least 18 inches deep in a level isolated place where water supplies cannot be contaminated. Rinse small containers with water four times, and if possible include the rinse water in the final spray application. These containers may be disposed of by means of city trash collection services.

*EC = Emulsifiable Concentrate
SP = Soluble Powder
LS = Liquid Solution
WP = Wettable Powder
Sol. = Soluble
Conc. = Concentrate
FI = Flowable
HS = Household Spray
D = Dust

G = Granular
S = Solution
Pt. = Pint
Qt. = Quart
Gal. = Gallon
lb. = Pound
T. = Tablespoon
t. = Teaspoon

****Warning**

When this bulletin was written it was not known if the registration of several of the recommended chemicals would be continued during 1969. These are indicated by a double asterisk**, or a zero with brackets, [0]. Consult your county agent or other agricultural authority before using any of these chemicals.

BLUEBERRIESAPHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion 57% EC	1
Malathion 4% or 5% D	1
Diazinon 25% EC	7

APPLICATION AND REMARKS

Apply when aphids appear and repeat if necessary. Use 1 T. per 3 gals. of water, Malathion 57% EC.

Use 2 T. per 3 gals. of water, 25% EC Diazinon.

LECANIUM SCALE

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Dormant spray oil 98%	See Remarks
Dormant oil superior 98%	See Remarks
Diazinon 25% EC	7
Malathion 25% WP	1

APPLICATION AND REMARKS

Apply oil sprays while plants are dormant and when temperatures are above freezing. Use 3/4 pt. Dormant spray oil per 3 gals. of water, or 1/2 pt. Dormant superior oil per 3 gals. of water.

Apply Diazinon or Malathion as needed during growing season. Use 3 T. Diazinon per 3 gals. of water or 6 T. Malathion per 3 gals. of water.

ORANGE TORTRIX – OBLIQUE-BANDED LEAFROLLER – TENT CATERPILLAR

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
TDE 50% WP (Rhothane)	14
Carbaryl 50% WP (Sevin)	0

APPLICATION AND REMARKS

In severe infestations of leafroller or tortrix, three applications may be necessary: Use 4 T. of either material per 3 gals. of water. 1st application--May 15; 2nd application--June 1; 3rd application--June 15. Use 4 T. per 3 gals. of water. The number of applications should be determined by the extent of the infestation.

BLUEBERRIES (Contd.)ROOT WEEVILS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Chlordane 44% EC	
PLUS	See Remarks
DDT 50% WP	
APPLICATION AND REMARKS	

Preplant treatment only. Apply 7 fl. oz. of Chlordane 44% liquid EC or 2-1/4 lbs. of 10% dust plus DDT 50% WP 7 oz. per 1000 sq. ft. of soil in sufficient water for even coverage prior to planting. Mix into soil by disking or rotary tillage. Or Prebloom treatment: Apply 3 T. of Chlordane 44% liquid EC and 1-1/2 oz. of DDT 50% WP per 1000 sq. ft. to the crowns of the plants in April before blossoms open. Do not apply when fruit is present.

CANE BERRIESCROWN BORER

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon 25% EC	7

APPLICATION AND REMARKS

Use 4 T. per 3 gals. of water. Apply to lower 3 ft. of canes and crown area during first 10 days of October.

DRY BERRY – RED BERRY MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Lime-sulfur	See Remarks
Lime-sulfur type materials as manufacturer directs	See Remarks
Kelthane 35% WP	2

APPLICATION AND REMARKS

Use 30 fl. oz. Lime-sulfur per 3 gals. of water. Spray canes in spring when vegetative buds are about 1/2 inch long. Use Lime-sulfur type materials as manufacturer directs.

Use 35% WP Kelthane at a dosage rate of 2 t. per gallon of water. Apply Kelthane in delayed dormant period or just before buds swell. Respray as needed.

CANEBERRIES (Contd.)ROOT WEEVILS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Chlordane 44% liquid EC PLUS DDT 50% WP	See Remarks See Remarks

APPLICATION AND REMARKS

Preplant treatment only. Do not apply when fruit is present. Apply 7 fl. oz. of Chlordane 44% liquid EC and 7 oz. of DDT 50% WP per 1000 sq. ft. of soil in sufficient water for even coverage prior to planting. Mix into soil by disking or rotary tillage. Or apply 3 T. of Chlordane 44% liquid EC and 1-1/2 oz. of DDT 50% WP per 1000 sq. ft. to the crowns of the plants in April before blossoms open. Do not plant root crops in treated soil for at least one year.

ORANGE TORTRIX – OTHER LEAFROLLERS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
TDE 50% WP (Rhothane)	14

APPLICATION AND REMARKS

Use 4 T. per 3 gals. of water. Apply within 1 week after blossoms open. Repeat in 10 days.

SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Kelthane 18-1/2% EC	2

APPLICATION AND REMARKS

Use 2 T. per 3 gals. of water, as needed.

CURRENTS–GOOSEBERRIESCURRENT APHID – CURRENT FRUITFLY (GOOSEBERRY MAGGOT)
TWO-SPOTTED SPIDER MITE

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion 5 EC	1 (currants)
Malathion 5% D	3 (gooseberries)

APPLICATION AND REMARKS

Use 1 T. Malathion 5 EC per 3 gals. of water or 5% dust. Apply when aphids appear. The same may be used for currant fruitfly but make 1st application as blossoms start to wither. Repeat at 10-day intervals up to 3 days before harvest. When mites are a problem before harvest particularly near dusty roadways, use either Malathion spray or dust at above rates. Several applications may be needed after harvest to prevent serious loss of foliage.

CURRENTS—GOOSEBERRIES (Contd.)CURRENT BORER

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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None

APPLICATION AND REMARKS

Prune, remove and burn weakened or infested shoots.

SAN JOSE SCALE

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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Lime-sulfur

0

APPLICATION AND REMARKS

Use commercially prepared lime-sulfur at the rate of 1 qt. per gal. of water before buds break. Spray to thoroughly cover shoots while plants are dormant in the early spring.

GRAPESCLIMBING CUTWORMS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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DDT 10% D

40

APPLICATION AND REMARKS

Apply 1 T. of 10% dust around base of vine as buds are starting to swell. The base of posts, guy wire, or other supporting structures should also be treated. Repeat in 10 days if cutworms persist.

GRAPE LEAFHOPPER – GRAPE MEALYBUG

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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Malathion 5 EC

or 5% D

3

Malathion 5% D

APPLICATION AND REMARKS

For leafhoppers apply dust or spray when nymphs are present on underside of leaves. Use 1 t. of 5 EC Malathion per gal. of water or dust thoroughly with 5% dust.

For mealybug apply Malathion at above rates when nymphs have moved out from under bark and onto new growth or grape clusters (either before or after bloom). Repeat in 2 weeks if necessary.

STRAWBERRIESROOT WEEVILS (BRACHYRHINUS) – WOODS WEEVIL (NEMOCESTES)
OBSCURE WEEVIL (SCIOPTES)

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Chlordane 44% liquid EC	See Remarks
PLUS	
DDT 50% WP	See Remarks

APPLICATION AND REMARKS

Use preplant only. Apply 3-1/2 fl. oz. of Chlordane 44% liquid EC and 7 oz. of DDT 50% WP per 1000 sq. ft. of soil in sufficient water for good coverage prior to planting. Mix into soil by disking or rotary tillage. *NOTE: Do not plant root crops in treated soil for at least 1 year after treatment.*

GARDEN SYMPHYLAN

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Lindane 50% WP	See Remarks

APPLICATION AND REMARKS

Use preplant only. Apply 1-1/2 oz. of 50% WP per 1000 sq. ft. of soil in sufficient water for good coverage prior to planting. Mix into soil by disking or rotary tillage. *NOTE: Lindane-treated soil may give off-flavor to root crops, corn, or tomatoes for at least 2 years after treatment.*

SPITTLE BUG

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Carbaryl (Sevin) 50% WP	1

APPLICATION AND REMARKS

Use 4 t. per gallon of water. Apply in spring when first blossoms open.

OMNIVOROUS LEAF TIER

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Carbaryl (Sevin) 50% WP	1

APPLICATION AND REMARKS

Use 4 t. per gal. of water. Apply about May 1 and repeat in 3 weeks.

STRAWBERRIES (Contd.)**STRAWBERRY LEAFROLLER**

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Carbaryl (Sevin) 50% WP	1

APPLICATION AND REMARKS

Use 4 t. per gal. of water. Apply when there are more than two larvae per plant.

SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Kelthane 18-1/2% WP	5
Malathion 5 EC	3

APPLICATION AND REMARKS

Use 1 T. of either material per gal. of water.

APHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon 25% EC	5

APPLICATION AND REMARKS

Use 2 T. per gal. of water.

SLUGS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Metaldehyde bait	6

APPLICATION AND REMARKS

Scatter through planting but do not get on leaves or fruit.

GENERAL PESTSSLUGS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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Metaldehyde bait	0
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APPLICATION AND REMARKS

Broadcast to seedbed around borders and between rows. Use 0.5 lb. per 1000 sq. ft. Do not apply directly to plants.

CUTWORMS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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DDT D	0
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Carbaryl (Sevin) D	0
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Carbaryl bait 5%	0
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Methoxychlor D	0
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APPLICATION AND REMARKS

Apply any one of these materials as a 5% dust or bait to the soil surface at first sign of cutworm activity. Do not apply to plants.

EARWIGS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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DDT D	0
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APPLICATION AND REMARKS

Apply 5% DDT dust to soil surface when earwigs are first noticed. Repeat in 3 weeks if necessary. Do not apply to plants.

GARDEN SYMPHYLAN

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
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Diazinon EC, WP, G,	See Remarks
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APPLICATION AND REMARKS

Use Preplant only. Apply 7-1/2 fl. oz. of 4 EC or 15 fl. oz. of 2 EC or 7 oz. of 50% WP or 1.6 lbs. of 14% G or 11.5 lbs. of 2% G/1000 sq. ft. as soil treatment just prior to planting. EC or WP formulations should be applied in sufficient water for even coverage with a sprayer or watering can. Mix chemicals into top 4–6 inches of soil by disking or rotary tillage.

GENERAL PESTS (Contd.)WIREWORMS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	Treat prior to planting.
Diazinon D	See Remarks

APPLICATION AND REMARKS

Apply 5 lbs. of 5% DDT or 6 lbs. of 4% Diazinon dust per 1000 sq. ft. of soil surface. Thoroughly mix with soil to a depth of 8–9 inches. Do not apply DDT where root crops will be grown.

VEGETABLES AND MELONS**ASPARAGUS**ASPARAGUS BEETLE

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Rotenone D	1
DDT D	See Remarks
Carbaryl (Sevin) D	1

APPLICATION AND REMARKS

Dust spears when beetles appear with 4% Malathion or 3/4 to 1% Rotenone and repeat treatment at 7-day intervals.

Use 5% DDT dust to control beetles during *fern stage only*. Do not apply during cutting season. Sevin may be applied as a 5% dust during cutting season. Do not repeat application within 3 days.

BEANSAPHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Naled (Dibrom) EC	4

APPLICATION AND REMARKS

Apply Malathion or Dibrom when aphids appear and repeat at weekly intervals as needed. Use 1/2 t. of Dibrom 8 EC to 1 gal. of water or 4% Malathion dust.

SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Naled (Dibrom) EC	4
Kelthane WP	7
Diazinon EC, D	7

APPLICATION AND REMARKS

Apply control measure when mites first appear and repeat application as necessary. Use 4% Malathion dust. Use 1/2 t. Dibrom 8 EC in 1 gal. of water. Use 2 t. of Kelthane 18.5% WP per 1 gal. of water. Do not feed Kelthane-treated vines to meat or dairy animals. Use 2 t. 25% Diazinon EC per 1 gal. of water or 4% dust.

BEETSAPHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	7
Diazinon EC, D	14

APPLICATION AND REMARKS

Apply control measures when aphids first appear and repeat applications at 8–10-day intervals as needed. Use 4% Malathion dust. Use 2 t. of Diazinon 25% EC per gal. of water.

BEETS (Contd.)FLEA BEETLES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	0
DDT WP	0
Methoxychlor WP, D	14
Carbaryl (Sevin) WP	3 See Remarks

APPLICATION AND REMARKS

Apply control measures when flea beetles first appear. Use 5% DDT or 5% methoxychlor dust or 1 T. 50% DDT or 50% methoxychlor or 50% WP Sevin per 1 gal. of water. Repeat treatment at 10-day intervals. Do not use DDT-treated tops for food or feed. Use a 14-day restriction on Carbaryl if beet tops are to be used as feed.

BROCCOLI, CABBAGE, CAULIFLOWERAPHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	3 (broccoli) 7 (cabbage, cauliflower)
Malathion EC	
Diazinon EC	5 (broccoli, cauliflower) 7 (cabbage)

APPLICATION AND REMARKS

Apply when aphids first appear, repeat application at 8–10-day intervals. Use 4% Malathion dust or Malathion 57% EC at 1 T. per gal. of water or 2 t. 25% EC Diazinon in 1 gal. of water.

CABBAGE WORMS – CABBAGE LOOPERS – DIAMOND-BACK MOTH

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	Do not apply DDT after edible parts start to form.
DDT WP	
Naled (Dibrom) EC	1
Rotenone D	1

APPLICATION AND REMARKS

Apply when worms first appear. Repeat applications at 10–14-day intervals. Use 1% Rotenone or 5% DDT as dusts. Apply 50% DDT WP 1 T. or Dibrom 8 EC at 1 t. per gallon.

BROCCOLI, CABBAGE, CAULIFLOWER (Contd.)CABBAGE MAGGOT

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon EC	5 (broccoli, cauliflower) 7 (cabbage)

APPLICATION AND REMARKS

Use 1 t. of 25% EC per gal. of water. Apply 1/2–1 cup of material to soil at base of each plant immediately after transplanting.

CARROTSCARROT RUST FLY

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon 25% EC	10

APPLICATION AND REMARKS

Use 1 T. Diazinon 25% EC per gal. of water. Apply to soil at base of plants at 10-day intervals starting in early July. Reduces but does not eliminate damage.

CORN–SWEETCORN EARWORM

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	0
Malathion D	5

APPLICATION AND REMARKS

Apply first application when silks first appear. Repeat 3–4 times at 3-day intervals. Direct insecticide application to silks. Do not feed plant residues treated with DDT to livestock. Use 5% DDT or 4% Malathion dusts.

APHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	5
Diazinon D, EC	7

APPLICATION AND REMARKS

Use 2 t. of Diazinon 25% EC per gallon of water as a spray or use Malathion or Diazinon dust.

CUCUMBERS**CUCUMBER BEETLES**

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Diazinon EC	7
Carbaryl (Sevin) D	0

APPLICATION AND REMARKS

Use 4% Malathion or 5% Sevin as dusts or 2 t. of 25% Diazinon EC in 1 gal. of water. Apply when beetles first appear and repeat at 7–10-day intervals as needed.

APHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Diazinon EC	7
Naled (Dibrom) EC	0

APPLICATION AND REMARKS

Dust with 4% Malathion or spray with Diazinon 25% EC at 2 t. per gal water or 1/2 t. Dibrom 8 EC in 1 gal. of water. Apply when aphids first appear.

SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Kelthane WP	2

APPLICATION AND REMARKS

Apply when mites first appear. Repeat at 7–10-day intervals. Use 4% Malathion dust or Kelthane 18-1/2% WP at 1 T. per gal. of water.

LETTUCECABBAGE LOOPER

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Rotenone D	1
Naled (Dibrom) EC	1

APPLICATION AND REMARKS

Apply Rotenone 1% dust or Dibrom 8 EC at 1/2 t. per gal. of water at 7 - 10-day intervals.

APHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	14 (leaf lettuce) 7 (head lettuce)
Naled (Dibrom) EC	1
Diazinon EC	10

APPLICATION AND REMARKS

Apply 4% Malathion dust or 1/2 t. Dibrom 8 EC or 2 t. 25% EC Diazinon in 1 gal. of water.

MUSKMELONCUCUMBER BEETLE

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Diazinon EC	3
Carbaryl (Sevin) D	0

APPLICATION AND REMARKS

Use 4% Malathion or 5% Sevin as dusts or 2 t. of 25% Diazinon EC in 1 gal. of water. Apply when beetles first appear and repeat at 7–10-day intervals as needed.

APHIDS – SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon EC	3
Naled (Dibrom) EC	1
Malathion D	1

APPLICATION AND REMARKS

Use Diazinon 2 t. 25% EC or Dibrom 8 EC at 1/2 t. in 1 gal. water or apply 4% Malathion dust.

MUSKMELON (Contd.)SQUASH BUGS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Methoxychlor D	7
Carbaryl (Sevin) D	0

APPLICATION AND REMARKS

Dust soil underneath plants when first squash bugs appear with 5% Methoxychlor. Do not apply to foliage. Sevin may be used as a 5% dust to foliage.

ONIONSTHRIPS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon EC	10
Malathion D	3 (green onions)

APPLICATION AND REMARKS

Apply 2 t. Diazinon 25% EC per gal. of water or 4% Malathion dust when thrips appear.

ONION MAGGOTS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon G	See Remarks

APPLICATION AND REMARKS

Apply 4 oz. of 2% Diazinon granules per 100 ft. of row with the seed in the furrow at the time of planting.

PEASPEA WEEVIL

(Not a problem in Western Washington)

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	0
Methoxychlor D	7
Malathion D	3 See Remarks
Rotenone D	1

APPLICATION AND REMARKS

Use 5% DDT or 5% Methoxychlor dust. Make 3 to 4 applications at 4- to 7-day intervals. Start dusting at the first portion of the bloom period when adults appear and before they lay eggs. Do not apply DDT to varieties with edible pods. Do not feed forage treated with DDT to dairy animals or other livestock.

Use 4% Malathion or 1% Rotenone or 5% Methoxychlor dusts as first pods begin to form. Make 3 to 4 applications at 4- to 7-day intervals. There is a 7-day waiting period when using Malathion if vines are to be fed to livestock.

PEA APHID

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	3 See Remarks
Diazinon EC	0 See Remarks

APPLICATION AND REMARKS

Use 4% Malathion dust or 2 t. of Diazinon 25% EC in 1 gal. of water. Repeat application in 10 days if needed. See Remarks on Malathion under Pea weevil. There is a 4-day waiting period on Diazinon if vines are to be fed to livestock.

PEA MOTH

(Not a problem in Eastern Washington)

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	0

APPLICATION AND REMARKS

Apply 5% DDT dust when pods begin to form. Repeat application in 10 days. Do not apply DDT to varieties with edible pods. Do not feed forage treated with DDT to dairy animals or other livestock.

PEPPERS**FLEA BEETLES**

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	5
Methoxychlor D	7

APPLICATION AND REMARKS

Use 5% DDT or 5% Methoxychlor dusts. Repeat applications at 10-day intervals.

POTATOES**POTATO FLEA BEETLE – COLORADO POTATO BEETLE**

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	0
Carbaryl (Sevin) D	0

APPLICATION AND REMARKS

Dust with 5% DDT or 5% Sevin when beetles appear on foliage. Repeat every 10 days until harvest. Do not feed culled potatoes treated with DDT to dairy animals.

SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	0
Kelthane WP	0
Naled (Dibrom) EC	0

APPLICATION AND REMARKS

Apply controls when spider mites appear. Apply 4% Malathion dust or 35% Kelthane WP at 1/2 T. per gal. of water or use 1/2 t. Dibrom 8 EC per gal. of water.

RADISHES

CABBAGE MAGGOT

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon G	Apply at planting time.

APPLICATION AND REMARKS

Use 1-1/2 oz. 2% granular Diazinon per 100 ft. of row. Apply in furrow with seed. The measures for control of the garden symphylan will also control maggots in radishes. (See under General Pests.)

FLEA BEETLES (ON RADISH AND TURNIPS)

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	0
Carbaryl (Sevin) D	3

APPLICATION AND REMARKS

Apply 5% DDT or 5% Sevin when beetles appear and repeat at 10-day intervals. Do not eat turnip greens treated with DDT.

SPINACH

APHIDS – SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	7
Naled (Dibrom) EC	1
Diazinon EC	10

APPLICATION AND REMARKS

Use 4% Malathion dust or 1/2 t. Dibrom 8 EC or 2 t. Diazinon 25% EC in 1 gal. of water. Repeat at 8–10-day intervals.

CABBAGE LOOPER

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	See Remarks
Rotenone D	1
Naled (Dibrom) EC	1

APPLICATION AND REMARKS

Do not apply DDT after seedling stage. Apply when loopers first appear. Apply 5% DDT or 1% Rotenone dusts or 1/2 t. Dibrom 8 EC per gal. of water. Repeat at 7–10-day intervals.

SQUASHAPHIDS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Malathion D	1
Diazinon EC	See Remarks
Naled (Dibrom) EC	1

APPLICATION AND REMARKS

Apply 4% Malathion dust. Do not use Malathion on wet or damp foliage. Use 2 t. Diazinon 25% EC or 1/2 t. Dibrom 8 EC per gal. of water. Repeat in 8–10 days.

Do not spray Diazinon closer than 3 days before harvest of winter squash or 7 days before harvest of summer squash.

CUCUMBER BEETLES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Carbaryl (Sevin) D	0
Malathion D	1
Methoxychlor D	7

APPLICATION AND REMARKS

Apply 5% Sevin or 5% Methoxychlor or 4% Malathion dusts when beetles appear. Repeat in 8 to 10 days.

SQUASH BUG

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	5
Methoxychlor D	7
Carbaryl (Sevin) D	0

APPLICATION AND REMARKS

Apply 10% DDT dust, 5% Methoxychlor or 5% Sevin dusts to soil around base of plants when squash bugs appear.

TOMATOESAPHIDS (BLACK OR GREEN) – SPIDER MITES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon EC	1
Naled (Dibrom) EC	1

APPLICATION AND REMARKS

Apply 2 t. of 25% Diazinon EC in 1 gal. of water. Apply 1/2 t. of Dibrom 8 EC per gal. of water.

BLISTER BEETLES

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Naled (Dibrom) EC	1

APPLICATION AND REMARKS

Apply 1/2 t. of Dibrom 8 EC per gal. of water.

COLORADO POTATO BEETLE – TOMATO FRUITWORM – FLEA BEETLE – HORNWORM

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Carbaryl (Sevin) D	0

APPLICATION AND REMARKS

Apply 5% Sevin dust to foliage as needed.

CUTWORMS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	5
Carbaryl (Sevin) D	0
Carbaryl bait 5%	0
Methoxychlor D	1

APPLICATION AND REMARKS

Apply any one of these materials as a 5% dust or bait to the soil surface at first sign of cutworm activity. Do not apply to plants.

TOMATOES (Contd.)GARDEN SYMPHYLAN

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
Diazinon EC, WP, G	See Remarks

APPLICATION AND REMARKS

Use preplant only. Apply 7-1/2 fl. oz. of 4 EC or 15 fl. oz. of 2 EC or 7 oz. of 50% WP or 1.6 lbs. of 14% G or 11.5 lbs. of 2% G/1000 sq. ft. as soil treatment just prior to planting. EC or WP formulations should be applied in sufficient water for even coverage with a sprayer or watering can. Mix chemicals into top 4–6 inches of soil by disking or rotary tillage.

WIREWORMS

INSECTICIDE – FORMULATION* (Use One)	MINIMUM DAYS LAST APPLICATION
DDT D	See Remarks
Diazinon D	See Remarks

APPLICATION AND REMARKS

Use preplant only. Apply 5 lbs. of 5% DDT or 6 lbs. of 4% Diazinon dust per 1000 sq. ft. of soil surface. Thoroughly mix with soil to a depth of 8–9 inches. Do not apply DDT where root crops will be grown.

HOUSEHOLD PESTS

USE ONLY THOSE MATERIALS RECOMMENDED FOR HOME USE

ANTS

INSECTICIDE – FORMULATION* (Use One)

Chlordane HS, D,
Dieldrin D
Heptachlor D

APPLICATION AND REMARKS

Use household spray in homes! Apply Chlordane 5%, Dieldrin 2% or Heptachlor 5% dusts outside around foundations and in areas where ants are coming into the house. Sprays of Lindane, Diazinon or Malathion will give good knockdown of ants, but will not have the long lasting control provided from the use of Chlordane, Dieldrin or Heptachlor.

Kepone as a 0.125% bait may also be placed in nest openings and around foundations in areas frequented by ants.

BED BUGS

INSECTICIDE – FORMULATION* (Use One)

DDT HS, D
Chlordane HS, D
Dieldrin HS

APPLICATION AND REMARKS

Spray thoroughly but lightly bed springs and frames. Spray the sides and edges of mattresses and overstuffed furniture. Also spray all cracks in floors and baseboards. Several treatments may be necessary. Apply every 30 days until no bed bugs are found alive.

HONEY BEES

INSECTICIDE – FORMULATION* (Use One)

DDT 5% D
Chlordane 5% D

APPLICATION AND REMARKS

To destroy honey bees nesting in walls of buildings, inject a liberal amount of 5% DDT or Chlordane dust through their entrance hole. Do this in the evening after all of the bees have returned to their nest. After the bees have completely disappeared, close the entrance to the nest. It is advisable to remove and destroy the honey because of possible insecticide contamination.

BOOKLICE (PSOCIDS)

INSECTICIDE – FORMULATION* (Use One)

DDT HS

APPLICATION AND REMARKS

Spray exposed woodwork with the DDT household spray. *DO NOT SPRAY ON FOOD OR COOKING UTENSILS!* Dry out areas where psocids are found; they do not thrive in areas that are kept warm and dry.

HOUSEHOLD PESTS (Contd.)

BOX ELDER BUGS

INSECTICIDE – FORMULATION* (Use One)

DDT HS, D
Chlordane HS, D
Lindane HS, D

APPLICATION AND REMARKS

Apply sprays of Chlordane or DDT inside the home using only indoor household sprays. Heavy applications of 5% DDT or 0.5% Lindane or 0.5% Dieldrin dusts around the base of box elder trees and in areas around the outside of the home where bugs congregate will greatly reduce the numbers of these bugs.

CARPET BEETLES

INSECTICIDE – FORMULATION* (Use One)

Malathion HS
Lindane HS
Chlordane HS

APPLICATION AND REMARKS

These insects live on hair, lint and many other cloth items that may accumulate in the home. Be sure to clean up all places where there may be carpet beetle home sites. Clean out all cracks and under stoves, radiators, and the like. Spray all infested areas thoroughly.

CENTIPEDES

Usually not needed as these animals are beneficial, but if they become a pest problem they may be controlled by the use of a household spray containing DDT or Chlordane.

CLOTHES MOTHS

INSECTICIDE – FORMULATION* (Use One)

DDT HS.

APPLICATION AND REMARKS

It is necessary to locate the infestation of these pests before applying sprays. Items that make good homes for these pests are (1) upholstered furniture, (2) woolens of various kinds, (3) fleece lined slippers, coats and drapes, (4) flannel clothing. Treat infested items and also areas that may be attacked. Spray entire surfaces of closet walls with the DDT mixture. Use care to not breathe the fumes. Be sure to air out closets after spraying.

HOUSEHOLD PESTS (Contd.)

CLOVER MITES

INSECTICIDE – FORMULATION* (Use One)

Inside the Home

Odorless white kerosene
DDT HS
Chlordane HS
Pyrethrum HS.

Outside the Home

Malathion 57% EC
Diazinon 25% EC
Kelthane 18-1/2% EC; Diazinon 25% EC; Kelthane 18-1/2% EC.

APPLICATION AND REMARKS

These mites are usually not pests in homes but occasionally do move into homes in large numbers. They are not damaging but may be a considerable nuisance. Spray when first found. Spray all areas of entrance and any other areas such as walks where they may be swarming.

Use 3 T. Malathion per 3 gals. of water. Use 3 T. Diazinon per 3 gals. of water. Use 3 T. Kelthane per 3 gals. of water.

COCKROACHES

INSECTICIDE – FORMULATION* (Use One)

Chlordane HS
Malathion HS
Dieldrin HS
Diazinon HS

APPLICATION AND REMARKS

Spray or dust runways, window and door frames, underneath and around drainboards, around and under sinks and in cracks and holes near pipes and the like. Be sure to check all potential hiding places in cupboards and under rugs. Dust or spray all hiding places carefully. Do not use dusts or residual sprays where small children or animals may get into the residue.

CRICKETS

INSECTICIDE – FORMULATION* (Use One)

Chlordane HS
Dieldrin HS
Chlordane 5% D

APPLICATION AND REMARKS

Apply sprays or dust to floors and along baseboards. Be sure dust or spray gets into all cracks where crickets may enter or hide. Repeat applications at 10–14-day intervals as long as crickets remain a problem.

HOUSEHOLD PESTS (Contd.)

DRUGSTORE BEETLE

INSECTICIDE – FORMULATION* (Use One)

DDT HS.

APPLICATION AND REMARKS

Find infested food and destroy it! Remove all foods from cupboard shelves, clean, and thoroughly spray with DDT household spray. *DO NOT GET THE SPRAY ON FOOD, DISHES OR COOKING UTENSILS.* Food not known to be infested may be placed in shallow pans and heated in an oven at 140° F. for one-half hour. The oven door should be propped open slightly to prevent scorching of the food. All materials should then be placed in containers with tight fitting lids.

EARWIGS

INSECTICIDE – FORMULATION* (Use One)

Inside the Home

DDT HS
Chlordane HS

Outside the Home

DDT 5% D
Chlordane 5% D

Garden Sprays (Outside)

DDT 50% WP
Sevin 50% WP

APPLICATION AND REMARKS

Spray infested areas and hiding places inside the house with a DDT or Chlordane household spray. Dust infested areas outside thoroughly with either a 5% DDT or Chlordane dust; or apply DDT 50% WP as a spray using 1 lb. per 25 gals. of water or 12 T. per 3 gals. of water; or Sevin 50% WP 2 T. per gal. of water. Apply on ground or earwig hiding places only.

FIREBRATS

INSECTICIDE – FORMULATION* (Use One)

DDT HS
Chlordane HS
Malathion HS
Dieldrin HS

APPLICATION AND REMARKS

Apply household sprays, or any of the chemicals listed, on walls, baseboards, cupboards, and other areas infested with firebrats or silverfish. Be sure to spray any cracks or areas where pipes come through walls. *DO NOT SPRAY FOOD OR FOOD CONTAINERS OR UTENSILS. DO NOT USE SPRAYS NEAR OPEN FLAMES.*

HOUSEHOLD PESTS (Contd.)

FLEAS

INSECTICIDE – FORMULATION* (Use One)

Malathion 5% D, 2% HS
Lindane 1% D
Pyrethrum 0.2% D
Rotenone 1% D
Diazinon 0.5% HS

APPLICATION AND REMARKS

Thoroughly rub a T. of 4% or 5% Malathion or 1% Lindane dust into the fur of dogs. Use a 0.2% Pyrethrum or a 1% Rotenone dust for cats. Animal sleeping quarters should be dusted with a 5% Malathion dust.

Spray other infested areas such as basements, infested lawns, and the like with either a Malathion or Diazinon spray as per directions on label. *DO NOT SPRAY ON FOOD OR ANIMAL FEED OR WATER DISHES.*

FLIES

INSECTICIDE – FORMULATION* (Use One)

Inside the Home

DDT HS
Pyrethrum HS
Pyrethrum-Methoxychlor HS
Chlordane HS

Garden Sprays (Outside)

DDT 50% WP
Diazinon 50% WP or 25% EC
Malathion 50% EC

Baits

DDVP (Dichlorovos, Vapona)
Malathion
Diazinon
Dipterex

APPLICATION AND REMARKS

Keep garbage in tight containers. Spray garbage cans frequently with DDT, Diazinon, or Malathion at 12 t. per 3 gals. of water. This should give adequate control of flies in and around garbage cans. All breeding areas including plant and animal refuse should be removed. Spray favored resting places and all screens and window sills with either DDT or Chlordane. Use household sprays and bombs often where flies tend to congregate. Vapona strips may be used in areas of good ventilation.

Various mixtures including the listed chemicals are used as baits in controlling flies around the home. Use these materials as manufacturer directs on label.

HOUSEHOLD PESTS (Contd.)

FLOUR BEETLE – FLOUR & MEALMOTHS – GRAIN BEETLE (SAWTOOTH) – GRANARY – RICE WEEVILS

INSECTICIDE – FORMULATION* (Use One)

DDT HS

APPLICATION AND REMARKS

Find infested food and destroy it! Remove all foods from cupboard shelves, clean, and thoroughly spray with DDT household spray. *DO NOT GET THE SPRAY ON FOOD, DISHES, OR COOKING UTENSILS.* Food not known to be infested may be placed in shallow pans and heated in an oven at 140° F. for one-half hour. The oven door should be propped open slightly to prevent scorching of the food. All materials should then be placed in containers with tight fitting lids.

GOLDEN BUPRESTID

INSECTICIDE – FORMULATION* (Use One)

DDT HS.

APPLICATION AND REMARKS

No chemical control of Golden Buprestid beetles as they emerge from infested wood over a period of several years. Removal of infested wood is the only means of control.

HORNETS

INSECTICIDE – FORMULATION* (Use One)

DDT HS
Chlordane HS
Dieldrin HS

APPLICATION AND REMARKS

Locate hornet nests and when they are all in the nest, spray the complete nest carefully and thoroughly and completely with one of the pesticides shown. Do not spray whole rooms with either Dieldrin or Chlordane.

HOUSEHOLD PESTS (Contd.)

MOSQUITOES

INSECTICIDE – FORMULATION* (Use One)

Inside the Home

DDT HS
Lindane HS
Malathion HS

Outside the Home

DDT 50% WP
Malathion 25% WP or EC
Diazinon 50% WP
Diazinon 25% EC

APPLICATION AND REMARKS

Be sure to eliminate breeding areas by removing everything that might harbor these pests such as cans, buckets, jars, etc. that might hold water. Drain low areas and pools that will act as a home for developing mosquito larvae.

Spray or paint door jams, window screens, and other places of entry with chemicals shown and be sure to repeat sprays every 2 to 3 weeks during the mosquito season.

Apply outdoor garden sprays using DDT 50% WP, Malathion 25% WP or EC, or Diazinon 50% WP or 25 EC at the rate of 4 T. per 3 gals. of water. Spray areas in the garden where mosquitoes congregate.

POWDER POST BEETLES

INSECTICIDE – FORMULATION* (Use One)

DDT HS
DDT 5% D

APPLICATION AND REMARKS

Mix small amounts of DDT dust with water to form a paint or slurry. Paint this DDT-water solution on areas known to be infested with these insects. Dipping small hardwood articles in DDT solutions and heating in an oven held at 130° F. for 1-1/2 hours will also kill the insects.

CAUTION: The use of heat may warp or separate veneered wood and may loosen joints and destroy wood finishes.

SILVERFISH

INSECTICIDE – FORMULATION* (Use One)

DDT HS
Chlordane HS
Malathion HS
Dieldrin HS

APPLICATION AND REMARKS

Apply household sprays, or any of the chemicals listed, on walls, baseboards, cupboards, and other areas infested with firebrats or silverfish. Be sure to spray any cracks or areas where pipes come through walls. **DO NOT SPRAY FOOD OR FOOD CONTAINERS OR UTENSILS. DO NOT USE SPRAYS NEAR OPEN FLAMES.**

HOUSEHOLD PESTS (Contd.)

SPIDERS

INSECTICIDE – FORMULATION* (Use One)

Chlordane HS
Dieldrin HS
Lindane HS

Basement sprays

Chlordane 50% WP
Lindane 25% WP

APPLICATION AND REMARKS

Spray basements, attics, and other places where spiders are found, use Chlordane, Dieldrin, or Lindane household sprays. These materials kill spiders on contact and will continue to kill spiders in the treated areas for at least 3 to 4 weeks. For areas where a visible residue will not cause trouble, 9 oz. of Chlordane 50% WP or 3 oz. of Lindane 25% WP per 3 gals. of water may be used. Be sure to carefully screen windows and check for gaps under doors and windows that may allow spiders to enter the home.

TERMITES (DAMPWOOD)

INSECTICIDE – FORMULATION* (Use One)

See Remarks

APPLICATION AND REMARKS

Correct all conditions that allow excessive moisture. Remove all infested wood. Replace all infested wood with new wood except in areas near soil or any moisture source. Replace these areas with nonwoody materials such as concrete, rock, or metal. Creosote or other materials of this type should be used to impregnate areas where termites may attack in the future. The use of heavy sprays of Chlordane will help in eliminating termite infestations.

TERMITES (SUBTERRANEAN)

INSECTICIDE – FORMULATION* (Use One)

Dieldrin 18% EC
Chlordane 72% EC
Aldrin 25% EC
Heptachlor 25% EC
Lindane

APPLICATION AND REMARKS

Use Dieldrin 18% EC 2-3/4 gals. or Chlordane 72% EC 1 gal. or Aldrin 25% EC 2 gals. or Heptachlor 25% EC 2 gals./100 gals. of water or Lindane as label directs. Soil treatments with Dieldrin, Chlordane, Aldrin, Heptachlor, or Lindane are effective where the infestation is only in areas along basement walls. One treatment should give several years' protection.

For infestations along interior walls of basementless houses, dig a trench 6 to 8 inches wide and a few inches deep. Do not go below the tops of the footings. Along exterior walls dig a trench 6 to 8 inches wide and 15 inches deep. Do not dig below the footing. Extend it along the wall 4 to 5 feet in each direction beyond the areas of termite infestation.

Where infestations occur along the exterior foundation walls in homes having full basements, dig a trench 6 to 8 inches wide and 30 inches deep. Make a crowbar pipe or rod hole about one inch in diameter every foot along the bottom of the trench. This is for better penetration of the

HOUSEHOLD PESTS (Contd.)

WASPS – WEEVILS – YELLOW JACKETS

INSECTICIDE – FORMULATION* (Use One)

DDT HS
Chlordane HS
Dieldrin HS

APPLICATION AND REMARKS

Locate nests and when they are all in the nest, spray the complete nest carefully and thoroughly and completely with one of the pesticides shown. Do not spray whole rooms with either Dieldrin or Chlordane.

LAWN PESTS

ANTS – BILLBUGS – CUTWORMS – SOD WEBWORMS – LEAFHOPPERS

INSECTICIDE – FORMULATION* (Use One)

AMOUNT PER 1000 SQ. FT.

Chlordane, 8 lbs./gal. EC,	4 oz.
Chlordane, 5% G	5 lbs.
Diazinon, 4 lbs./gal. EC,	4 oz.
Diazinon, 2% G	5 lbs.

APPLICATION AND REMARKS

Apply to Ant nest or entire area. Water after application.

Apply chemicals when damage from cutworms or other pests is observed. Water after application.

Apply treatments in late afternoon when damage from webworms is observed (first application about July 15). Repeat application may be necessary. Water before application and do not water again until following morning.

Apply sprays for leafhoppers only when this pest is abundant or causing damage.

WHITE GRUBS – WIREWORMS

INSECTICIDE – FORMULATION* (Use One)

AMOUNT PER 1000 SQ. FT.

DDT 50% WP, 1 lb.
DDT 5% D, 5-1/2 lbs.

APPLICATION AND REMARKS

Preplant treatment only. Mix into soil to depth of 6 to 8 inches.

NIGHT CRAWLERS – EARTHWORMS

INSECTICIDE – FORMULATION* (Use One)

AMOUNT PER 1000 SQ. FT.

Chlordane 20% G, 5 lbs.
Chlordane 8 EC, 1 pt.

APPLICATION AND REMARKS

Water in material as thoroughly as possible immediately after application.

All Emulsifiable concentrates and Wettable Powders are mixed and applied with 10 gallons of water.

Choose any one of the insecticides for ants, billbugs, cutworms, earthworms, night crawlers, sod webworm, or leafhopper.