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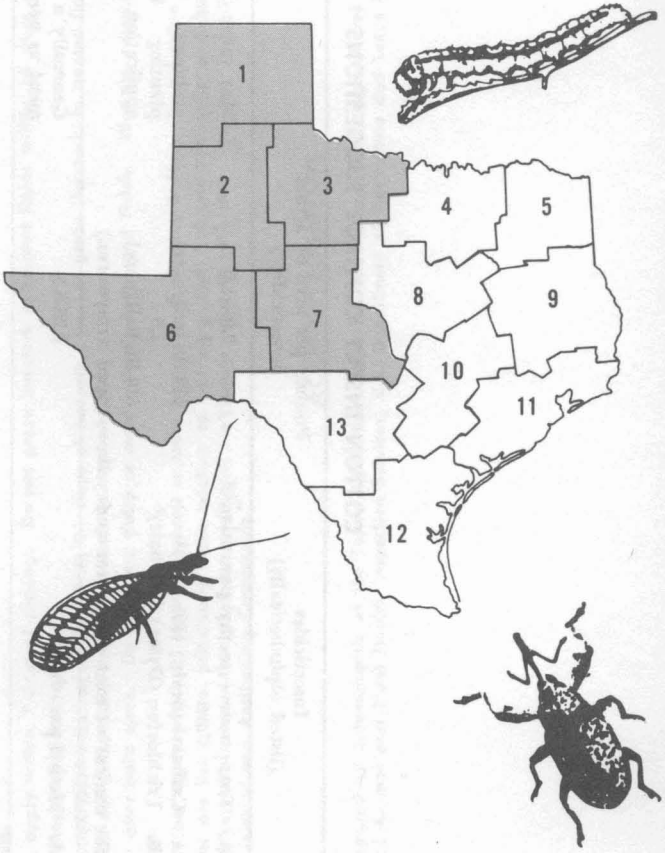
SUGGESTIONS for controlling Cotton Insects

in the High Plains, Rolling Plains and Trans-Pecos Areas of Texas



TEXAS AGRICULTURAL EXTENSION SERVICE
THE TEXAS A&M UNIVERSITY SYSTEM
JOHN E. HUTCHISON, DIRECTOR, COLLEGE STATION, TEXAS

Suggestions for Controlling Cotton Insects in the High Plains, Rolling Plains and Trans-Pecos Areas of Texas

Suggestions in this publication are based on results of continuing research conducted throughout the state by the Texas Agricultural Experiment Station and the Agricultural Research Service, U.S. Department of Agriculture. Research results for some of the minor cotton pests from other cotton producing states have been evaluated carefully and utilized in developing these suggestions. A committee of state and federal research personnel and specialists of the Texas Agricultural Extension Service meets annually to review research results and to develop suggestions for the safest, most profitable insect control practices for Texas producers.

At least 12 insect and mite species attacking Texas cotton show some resistance to once-effective chemicals. Evidence indicates that the more extensively a material is used, the more rapidly resistance develops. Therefore, use of insecticides should be restricted to actual need, based on field inspections.

Fruits, vegetables and animal feed can be contaminated by insecticidal drift. Continued excessive use of persistent insecticides results in soil residues which jeopardize the use of fields for growing certain forage, vegetable or root crops.

For information on identification of major cotton insects, their life history and the kind of damage they cause, see *Cotton Insects* (B-933, Texas Agricultural Extension Service).

INSECT CONTROL PROGRAM

In planning an insect control program, the cotton producer should consider effective use of both natural and cultural control. Major factors to be considered include insecticide resistance, the importance of protecting natural enemies of cotton insects, resurgence of primary pests and increased numbers of secondary pests following insecticide applications, environmental contamination with pesticides and increasing restrictions on pesticide use. Therefore, insecticides should be applied only when necessary, as determined by frequent field inspections, to prevent economic losses from damaging pests. *This approach to cotton pest management is preferred over other alternatives available to cotton producers.* (See table of suggestions for cotton insect control for further information.)

Early Season
(Plant emergence to first ⅓-grown squares)

Thrips damage and population buildups vary from season to season and area to area. They normally cause heaviest damage from plant emergence until early squaring begins. Heavy infestations may reduce stands, stunt plants, reduce fruiting and delay maturity.

The *cotton fleahopper,* which damages small squares, commonly occupies a key position in a cotton insect management program. Base chemical applications not only on fleahopper numbers but also upon fruiting rate and excessive small square loss. In early season, cotton may sustain heavy square loss without reducing yields, but maturity may be delayed. Carefully

evaluate the decision to apply the first application, because insecticide applications made after 1/3-grown squares are present may create conditions favorable for outbreaks of bollworm-tobacco budworm by destroying beneficial insects.

Midseason and Late Season

Midseason is the 6-week fruiting period following the appearance of first 1/3-grown squares. The major concern during this period is insuring adequate fruit set. Proper crop management and frequent field inspection often can prevent premature insecticide applications during this period.

Late season is the remainder of the production season when the major concern is boll protection. In fields where insecticide applications were initiated during the midseason and late-season periods, boll protection should be a primary concern as long as immature bolls are present which can be expected to mature before the average frost date for the area or before crop termination through the use of desiccants or defoliants.

Since cotton grown under irrigation or on high-yielding land is subject to insect damage later in the season than cotton on dryland acreage, any production practices which prolong plant growth (particularly late irrigations and excessive nitrogen use) should be avoided during the late season.

Insecticides may be required at application intervals of not more than 5 days for effective control of the boll weevil, bollworm, tobacco budworm and pink bollworm.

Bollworms normally cause more damage to cotton in the High Plains and Trans-Pecos counties than any other insect. Eggs generally are laid on the tender growth of the plant's terminal area. Eggs hatch in about 3 days and the small worms begin working their way down the plants, feeding on the squares and bolls.

Tobacco budworm and *beet armyworm* infestations may accompany bollworms. These species attack cotton in a manner similar to that of bollworms. Apply insecticides when worms are small.

Boll weevils are a serious threat to cotton production in most of these counties. See the table for discussion of infestation counts and control recommendations. Overwintered weevils often are confined after emergence to small areas of the field. Spot treatment of infested areas before first 1/3-grown squares will slow and sometimes prevent the spread of weevils throughout the field. The beneficial insect population in the field is less affected when treatment is confined only to spots where weevils exist.

Begin *pink bollworm* field inspections as soon as the first bolls are 3 weeks old. Continue inspections weekly. Walk diagonally across the field and collect at least 100 bolls (2/3-grown or larger). Crack the bolls and examine the inside of the hull for tunnels made by small worms. Where tunneling is not found, check lint and seed for evidence of feeding or worms. this is particularly important in determining infestation in Pima cotton.

Begin treatment when 10 to 15 percent of the bolls are infested during early and midseason. Continue treatment until 70 percent are open. Where infestations occur late in the season, 40 to 50 percent of the top bolls may be infested without economic loss.

For additional information, see *Ways to Fight the Pink Bollworm in Texas* (L-219, Texas Agricultural Extension Service).

EARLY STALK DESTRUCTION AND FARM CLEANUP

Early harvest, stalk destruction and plowing under debris immediately after harvest reduce boll weevil, pink bollworm, bollworm and tobacco budworm populations. Pay particular attention to the destruction of green or cracked bolls and other plant debris left at the ends of rows following stripper harvest. Do not allow stubble regrowth or development of volunteer seedlings.

These practices force the boll weevil into starvation before time to enter winter quarters, prevent late-season buildup of weevils, pink bollworms, bollworms and tobacco budworms and reduce the number surviving the winter. The addition of 0.5 lb. methyl parathion or 0.25 lb. azinphosmethyl (Guthion) to arsenic acid or phosphate-type defoliants has proved effective in reducing potential overwintering bollweevil populations. *Do not add methyl parathion or azinphosmethyl to chlorate-type defoliants.* See *Cotton Defoliation Guide For Texas* (L-145, Texas Agricultural Extension Service) for a list of chlorate-type defoliants. *Growers and applicators are cautioned to use combinations of phosphate-type defoliants (Folex and Def) and phosphate insecticides with extreme care.* These combinations may pose a much greater toxicity hazard than either of the compounds used alone.

BENEFICIAL INSECTS

Natural populations of beneficial insects can often effectively control cotton pests such as the bollworm, tobacco budworm, cotton aphid and spider mite. However, practical methods of releasing beneficial insects in cotton fields have not been devised. Because most insecticides are highly injurious to the populations of beneficial insects, applications should be avoided unless frequent field inspections reveal economically damaging levels of injurious insects.

GENERAL INSTRUCTIONS

In the late-season program dusts and sprays are equally effective when applied properly. Where chemicals are applied, thorough plant coverage is required to achieve control. If showers occur within 24 hours following an application, fields should be checked to determine possible need for repeating the applications. When infestations are heavy, increase dosages to the maximum recommended.

For detailed information on using sprays and spray machinery, see *Insecticidal Spraying of Field Crops With Ground Machinery* (L-486, Texas Agricultural Extension Service), and *Pesticide Application Ground Equipment Calibration Guide* (L-764, Texas Agricultural Extension Service).

Dusts should be applied when the air is calm, but the presence of dew is not necessary. Place dust nozzles on ground machines 4 to 6 in. above plants. Dusts and wettable powders are washed off by light showers more easily than sprays.

Ground machines and airplanes are equally effective for insecticide application. For best results with airplanes, flag swaths so that they overlap.

Conversion Table—Pounds of actual insecticide in different quantities of spray concentrate*

Insecticide	Gal.	2 Qt.	1 Qt.	1 Pt.
Azinphosmethyl (Guthion)	2.0	1.0	0.5	0.25
Carbophenothion (Trithion)	4.0	2.0	1.0	0.5
Chlordimeform (Galecron or Fundal)	4.0	2.0	1.0	0.5
Demeton	2.0	1.0	0.5	0.25
Dicrotophos (Bidrin)	8.0	4.0	2.0	1.0
Dimethoate (Cygon or De-Fend)	2.67	1.33	0.67	0.33
Ethion	4.0	2.0	1.0	0.5
Methyl parathion	4.0	2.0	1.0	0.5
Monocrotophos (Azodrin)	5.0	2.5	1.25	0.625
Parathion	2.0	1.0	0.5	0.25
Toxaphene	6.0	3.0	1.5	0.75

	Pounds actual carbaryl (Sevin) or trichlorfon (Dylox) per acre				
	3.0	2.0	1.0	0.5	0.25
Pounds of carbaryl (Sevin) or trichlorfon (Dylox) required:					
80% wettable or soluble powder	3.75	2.5	1.25	0.625	0.312
50% wettable or soluble powder	6.0	4.0	2.0	1.0	0.5

*Certain formulations may differ in the amount of actual insecticide per gallon. Refer to the manufacturer's labels for specific concentrations, and adjust spray mixtures accordingly.

PRECAUTIONS

All insecticides are poisonous. Follow carefully all precautions on the label. Take special precautions when handling azinphosmethyl (Guthion), monocrotophos (Azodrin), dicrotophos (Bidrin), demeton, disulfoton (Di-Syston), methyl parathion, parathion and phorate (Thimet). Avoid skin contact. Do not breathe vapors or drift from sprays or dusts.

Do not enter fields for 48 hours following application of methyl parathion at rates used for bollworm and tobacco budworm control.

Do not graze livestock in cotton fields or feed gin trash treated with insecticides, except those with no label restrictions.

Prevent drift from contaminating neighboring crops.

Follow recommended procedures in disposing of "empty" pesticide containers and discarding unneeded pesticides. See *Disposal—Pesticides and Pesticide Containers* (L-1008, Texas Agricultural Extension Service) for recommended procedures.

Most insecticides are destructive to honeybees. Since bees help pollinate many agricultural crops, make every effort to prevent their destruction.

For additional information, contact your county Extension agent or write the Extension entomologists, Entomology Department, Texas A&M University, College Station, Texas 77843 (713/845-1661).

POLICY FOR MAKING INSECT CONTROL SUGGESTIONS

Suggestions on use of pesticides made by the Texas Agricultural Extension Service and the Texas Agricultural Experiment Station are based upon:

- Effectiveness under Texas conditions
- Avoidance of residues in excess of allowable tolerances
- Avoidance of toxicity to humans, animals and desirable vegetation
- Avoidance of adverse side effects upon beneficial predators, parasites, honeybees, fish and other wildlife, plants, animals and humans.

Suggested pesticides must be registered and labeled for use by the U.S. Environmental Protection Agency and the Texas Department of Agriculture. The status of pesticide label clearances is subject to change, and may have changed since this publication was printed. County Extension agents and appropriate specialists are advised of changes as they occur.

The USER always is responsible for the effects of pesticide residues on his livestock and crops, as well as problems that could arise from drift or movement of the pesticide from his property to that of others. *Always read and follow carefully the instructions on the container label.*

For further information, contact your county Extension agent or:

Project Leader in Pesticide Chemicals,
Texas A&M University (713/845-1353)

Educational programs conducted by the Texas Agricultural Extension Service serve people of all ages regardless of socio-economic levels, race, color, sex, religion or national origin.

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COTTON INSECT CONTROL SUGGESTIONS

Insects	Insecticides (listed alphabetically)	Pounds per acre of actual insecticide(s)	Remarks
Cutworms	A. Toxaphene + methyl parathion[1,2]	2.0+1.0	May cause damage during seedling stage. Keep fields as weed-free as possible 3 weeks before planting to minimize cutworm problems. Plow under cover crops at least 3 weeks before planting. Insecticide sprays or baits are recommended for application over the drill.
	Baits	1.5	
	A. Carbaryl (Sevin) (5% bait)[5]	(30 lb. bait/acre)	
	B. Trichlorfon (Dylox) (5% bait)[7]	1.5 (30 lb. bait/acre)	
	(See below for control of beet armyworm and yellow-striped armyworm.)		
Garden webworm	A. Methyl parathion[2]	0.25-0.5	Generally a problem on seedling to 6-leaf stage. Apply treatment as needed.
Thrips	A. Azinphosmethyl (Guthion)[3]	0.125	Inspect cotton as soon as it emerges to a stand. If thrips are present and leaf buds between the cotyledons are affected, treat at once. Make second application 7 days later if infestation persists. Base applications on 4-leaf or older cotton on the extent of plant damage. Silvering of the lower leaf surface is commonly observed, followed by wilted, deformed and bronzed or blackened leaves.
	B. Carbaryl (Sevin)[5]	0.5	
	C. Dicrotophos (Bidrin)[4]	0.05-0.1	
	D. Dimethoate (Cygon or De-Fend)[6]	0.1	
	E. Toxaphene[1]	0.75-1.0	
Cotton fleahopper	A. Carbaryl (Sevin)[5]	0.5-1.0	Base all treatments on damage (excessive loss of squares) as well as numbers of fleahoppers; for example, during the first 3 weeks of squaring, 25 to 50 cotton fleahoppers (nymphs and adults) per 100 terminals may cause damage. As plants increase in size and fruit load, larger populations may be tolerated without serious damage. Use insecticides only when few or no squares are being "set" by the plants, due to fleahopper attack. A sequential sampling technique for the cotton fleahopper is suggested for making decisions concerning the need for fleahopper control. Use of this technique will usually reduce sampling time by at least 50% with little or no reduction in accuracy. See *Sequential Sampling Procedures for the Cotton Fleahopper* (L-1090, Texas Agricultural Extension Service). Insecticides applied early in the blooming period may result in outbreaks of bollworm and tobacco budworm due to the destruction of beneficial insects. *Use recommended higher application rates only when infestations are severe.*
	B. Dicrotophos (Bidrin)[4]	0.05-0.1	
	C. Dimethoate (Cygon or De-Fend)[6]	0.1	
	D. Methyl parathion[2]	0.1	
	E. Trichlorfon (Dylox)[7]	0.25-0.5	
Lygus bugs	A. Carbaryl (Sevin)[5]	1.0-2.0	Lygus bugs are attracted to succulent growth where their feeding causes shedding of squares and young bolls, stunted growth and deformed bolls. The need for lygus bug control is regulated by the abundance of lygus in relation to the fruiting condition of the cotton plants. During the period of prebloom to 2 weeks after bloom initiation, begin treatment when 10 lygus are found per 50 sweeps (count each nymph as two) of a 15- to 16-inch net. Make sweeps at several locations in the field by *sweeping across the top of one row only* in such a way that the top 10 in. of the plants are struck. After the early fruiting period, begin treatment when lygus counts exceed 20 to 30 per 50 sweeps. These population levels can be tolerated without causing yield or quality loss *provided the plants have retained squares and set bolls normally during the first 4 to 5 weeks of fruiting.*
	B. Methyl parathion[2]	0.5	
	C. Parathion[2]	0.5	
	D. Trichlorfon (Dylox)[7]	1.0-1.5	
Overwintered boll weevil	A. Azinphosmethyl (Guthion)[3] (EC or ULV)	0.25	Where weevils are found apply at the first ⅓-grown square stage to prevent egg laying. Base additional treatment on economic damage levels shown under "boll weevils" below. These insecticides also control thrips and cotton fleahoppers.
	B. Carbaryl (Sevin)[5]	1.25-1.5	
	C. Malathion (ULV only)[8]	12-16 fluid oz.	
	D. Methyl parathion[2]	0.25-0.5	
	E. Toxaphene + methyl parathion[1,2]	1.0+0.25	
Cotton aphid	A. Demeton (Systox)[9]	0.125-0.25	Generally beneficial insects will effectively hold cotton aphid populations below damaging levels. Therefore, give careful consideration before beginning applications.
	B. Dicrotophos (Bidrin)[4]	0.1	
	C. Methyl parathion[2]	0.25-0.375	
	D. Parathion[2]	0.25-0.375	
Bollworm Tobacco budworm	A. Carbaryl (Sevin) + methyl parathion[5,2]	2.0+0.5 to 3.0+0.75	**FIELD INSPECTION PRIOR TO INITIAL CHEMICAL APPLICATION:** Check fields twice weekly (on a 3- to 4-day schedule). Examine 100 green squares (½-grown or larger) at random throughout the field for worm damage. *Before bloom,* begin treatment when 15 to 25 percent of the green squares are worm damaged. *After bolls are present,* begin treatment when 8 to 10 percent of the green squares are worm damaged. Avoid flared or yellowed squares in field sampling. **FIELD INSPECTION AFTER INITIATION OF INSECTICIDE APPLICATIONS:** Check fields closely 2 to 3 days following each application. Where control has not been obtained,
	B. Methyl parathion[2]	1.25-2.0	
	C. Methyl parathion + chlordimeform (Galecron or Fundal)[2,9]	1.25+0.125 to 2.0+0.125	
	D. Monocrotophos (Azodrin)[12]	0.8-1.0	
	E. Monocrotophos (Azodrin) + chlordimeform (Galecron or Fundal)[9,12]	0.8+0.125 to 1.0+0.125	
	F. Toxaphene + methyl parathion[1,2]	0.75+1.0 to 1.5+1.5	
	G. Toxaphene + methyl parathion +	0.75+1.0+0.125 to	

			30 per 50 sweeps. These population levels can be tolerated without causing yield or quality loss *provided the plants have retained squares and set bolls normally during the first 4 to 5 weeks of fruiting.*
Overwintered boll weevil	A. Azinphosmethyl (Guthion)[3] (EC or ULV)	0.25	Where weevils are found apply at the first ⅓-grown square stage to prevent egg laying. Base additional treatment on economic damage levels shown under "boll weevils" below. These insecticides also control thrips and cotton fleahoppers.
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Cotton aphid	A. Demeton (Systox)[9]	0.125-0.25	Generally beneficial insects will effectively hold cotton aphid populations below damaging levels. Therefore, give careful consideration before beginning applications.
	B. Dicrotophos (Bidrin)[4]	0.1	
	C. Methyl parathion[2]	0.25-0.375	
	D. Parathion[2]	0.25-0.375	
Bollworm Tobacco budworm	A. Carbaryl (Sevin) + methyl parathion[5,2]	2.0+0.5 to 3.0+0.75	**FIELD INSPECTION PRIOR TO INITIAL CHEMICAL APPLICATION:** Check fields twice weekly (on a 3- to 4-day schedule). Examine 100 green squares (½-grown or larger) at random throughout the field for worm damage. *Before bloom,* begin treatment when 15 to 25 percent of the green squares are worm damaged. *After bolls are present,* begin treatment when 8 to 10 percent of the green squares are worm damaged. Avoid flared or yellowed squares in field sampling.
	B. Methyl parathion[2]	1.25-2.0	
	C. Methyl parathion + chlordimeform (Galecron or Fundal)[2,9]	1.25+0.125 to 2.0+0.125	
	D. Monocrotophos (Azodrin)[12]	0.8-1.0	
	E. Monocrotophos (Azodrin) + chlordimeform (Galecron or Fundal)[9,12]	0.8+0.125 to 1.0+0.125	
	F. Toxaphene + methyl parathion[1,2]	0.75+1.0 to 1.5+1.5	
	G. Toxaphene + methyl parathion + chlordimeform (Galecron or Fundal)[1,2,9]	0.75+1.0+0.125 to 1.5+1.5+0.125	**FIELD INSPECTION AFTER INITIATION OF INSECTICIDE APPLICATIONS:** Check fields closely 2 to 3 days following each application. Where control has not been obtained, repeat application immediately. Apply insecticide at intervals as determined by infestations.
			Method A: Examine the terminal buds of cotton plants and a total of 100 green squares and small bolls taken from several points in the field. Repeat treatment when bollworm eggs and four to five young worms are found per 100 terminals and 5 percent of the squares and small bolls have been injured by small bollworms.
			Method B: Make a whole plant examination (terminals, squares, flowers and bolls) of all plants on 10 feet of row in at least five locations in the field. When counts average two or more larvae per 10 feet of row or exceed 10 in 50 feet, repeat treatment.
			Chlordimeform is an ovicide—effective against the egg stage. This insecticide is not effective against the larval stage. For this reason, it is suggested for use *only* in combination with other larvicides. The addition of chlordimeform is suggested when egg counts are high and tobacco budworm resistance is known to pose control problems. Each application should be based on the economic thresholds presented above in addition to egg density and Heliothis species involved.
			Under most conditions, avoid treating cotton for early budworm infestations until after blooms are observed in the field. Where moderately resistant tobacco budworms are noted, treatment interval may need shortening to 3 days and methyl parathion dosage increased to 2 lb. per acre. **WHERE HIGH RESISTANCE LEVELS OCCUR, EFFECTIVE CHEMICAL CONTROLS ARE NOT AVAILABLE.**
Boll weevil*	A. Azinphosmethyl (Guthion)[3] (EC or ULV)	0.25	**FIELD INSPECTION**—Examine cotton weekly. Examine 100 squares, at least ⅓-grown, at random, taking a few squares at several representative places in the field and from various portions of the plant. If 15 to 25 percent or more have weevil punctures, begin treatment. Apply insecticides at 5-day intervals. Under extremely heavy buildups, it may be necessary to shorten the interval to 3 days.
	B. Carbaryl (Sevin)[5]	1.6-2.4	
	C. Malathion (ULV only)[8]	12-16 fluid oz.	
	D. Methyl parathion[2]	0.375-1.0	
	E. Toxaphene + methyl parathion[1,2]	0.5+0.25 to 0.5+0.5	
*Refer to overwintered boll weevil control section above, before ⅓-grown square stage.			
Beet armyworm Yellow-striped armyworm	A. Methyl parathion[2]	1.0-1.5	Examine cotton for presence of these pests. Apply treatment as needed. Insecticides are most effective if applied when worms are small.
	B. Trichlorfon (Dylox)[7]	2.0	
Spider mites	A. Carbophenothion (Trithion)[10]	0.375-0.75	Treat when mites begin to cause noticeable leaf damage. Two applications at 5-day intervals may be necessary with all materials except demeton. In certain locations some mite species are highly resistant to miticides and are difficult to control with available materials. Use 0.6 to 1.0 lb. of Azodrin for control of resistant carmine mite.
	B. Demeton (Systox)[9]	0.25	
	C. Ethion[11]	0.375-0.75	
	D. Methyl parathion[2]	0.25-0.375	
	E. Monocrotophos (Azodrin)[12]	0.25-1.0	
	F. Parathion[2]	0.25	
Cotton leafworm	A. Azinphosmethyl (Guthion)[3]	0.25	Apply dusts or sprays when cotton leafworms first appear and at 5-day intervals until under control. Young worms are easier to kill than old worms. The BROWN COTTON LEAFWORM can be controlled effectively with parathion at 0.125-0.25 lb. per acre or malathion at 0.35 lb. per acre.
	B. Carbaryl (Sevin)[5]	1.0-1.25	
	C. Methyl parathion[2]	0.125-0.25	
	D. Parathion[2]	0.125-0.25	
Cabbage looper Soybean looper	A. Monocrotophos (Azodrin)[12]	1.0	Cabbage looper infestations usually are reduced or eliminated by disease agents before excessive leaf damage occurs. If Azodrin is used, several applications may be necessary for effective control.
Grasshoppers	A. Carbaryl (Sevin)[5]	1.5-2.0	Apply insecticides when damaging infestations appear.
	B. Malathion (ULV only)[8]	8 fluid oz.	
	C. Toxaphene[1]	1.5-3.0	

SELECTED INSECTICIDE USE RESTRICTIONS*

[1]**TOXAPHENE**—do not graze dairy animals or animals being finished for slaughter in fields treated late in the season.

[2]**METHYL PARATHION and PARATHION**—do not handpick or harvest within 7 days of application. Workers entering fields within 24 hours after application should wear protective clothing. (At rates above 0.5 per acre, do not enter fields within 48 hours after application).

[3]**AZINPHOSMETHYL**—do not apply EC within 1 day of picking or ULV within 2 days of handpicking. Cotton may be machine harvested any time after application of ULV. Where ULV or late-season EC applications are made, do not graze livestock on treated areas or feed gin waste.

[4]**DICROTOPHOS**—do not apply within 30 days of harvest. Do not graze livestock on treated fields or feed treated gin trash. Workers entering fields within 16 hours after treatment should be protected.

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[4]DICROTOPHOS—do not apply within 30 days of harvest. Do not graze livestock on treated fields or feed treated gin trash. Workers entering fields within 16 hours after treatment should be protected.

[5]CARBARYL—no time limitations. Problems may be encountered in spraying wettable powder with low-volume farm sprayers. Follow manufacturer's directions carefully.

[6]DIMETHOATE—do not apply within 14 days of harvest. Repeat applications should not be made at intervals closer than 14 days. Do not feed treated forage or graze livestock on treated fields.

[7]TRICHLORFON—do not apply within 7 days of picking. Do not graze livestock in treated fields within 14 days of application.

[8]MALATHION ULV—no time limitations.

[9]DEMETON and CHLORDIMEFORM—do not apply within 21 days of harvest. Do not graze livestock on treated fields. Do not feed gin waste to livestock.

[10]CARBOPHENOTHION—do not graze dairy or meat animals in treated fields.

[11]ETHION—do not apply after bolls open. Do not graze dairy or meat animals in treated fields. Workers entering fields within 24 hours following application should wear protective clothing.

[12]MONOCROTOPHOS—do not apply within 21 days of harvest or more frequently than every 5 days. Do not graze livestock on treated fields or feed gin waste to livestock.

*Only selected restrictions are listed here, principally those relating to waiting periods between application and harvest or field re-entry and grazing or feeding limitations. Every applicator should carefully review the label for additional restrictions prior to each use. Source—"EPA Compendium of Registered Pesticides. Volume III: Insecticides, Acaricides, Molluscicides and Antifouling Compounds."

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