Insecticide Recommendations

OF THE ENTOMOLOGY RESEARCH BRANCH FOR THE CONTROL OF INSECTS ATTACKING CROPS AND LIVESTOCK

1956 Season

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U.S. DEPARTMENT OF AGRICULTURE
March 1956

PRECAUTIONS

Insecticides are poisonous. Handle them with care. Follow the directions and heed all precautions on the container label.

When handling or mixing concentrated insecticides, avoid spilling them on your skin and keep them out of your eyes, nose, and mouth. If any is spilled on the skin or clothing, wash it off and change your clothing immediately. Wear a respirator and goggles when you are working with concentrated sprays or dusts.

Many of the new insecticides can be absorbed directly through the skin in hazardous quantities. In applying them, try to keep them off your skin and away from your eyes, nose, and mouth. Work on the windward side of the crop or animal being treated. When you have finished the job, wash all exposed surfaces of the body with soap and water. Change your clothing if any insecticide is spilled on it.

Parathion, methyl parathion, EPN, TEPP, and demeton are extremely poisonous. They should be applied only by a person thoroughly familiar with their hazards who will assume full responsibility for safe use and comply with all the precautions on the labels.

Store insecticides in closed containers in a dry place where children, irresponsible persons, and animals cannot reach them. Keep ethylene dibromide in a cool place away from dwellings. Be sure that insecticides are clearly labeled.

The fumigants carbon disulfide and ethylene dibromide are very poisonous to man and animals. They should be handled with every possible precaution and only by individuals thoroughly familiar with their hazards. Carbon disulfide is inflammable and explosive. Never open a container of it where there is little air in circulation or expose it near fire in any form. Do not transfer ethylene dibromide from one container to another in a closed room. Do not breathe the fumes.

If you spill one of the fumigant liquids on your skin wash it off promptly with soap and water. Remove immediately any clothing or shoes that have been wet with ethylene dibromide; otherwise severe blistering will result.

If you accidentally swallow an insecticide, induce vomiting by taking 1 tablespoonful of salt in a glass of warm water. Repeat if necessary. Call a doctor.

To protect fish and wildlife, be careful not to contaminate streams, lakes, or ponds with insecticides. Do not clean spraying equipment or dump excess spray material near such water. Avoid getting this material onto pasture grass or feed.

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INSECTICIDE RECOMMENDATIONS OF THE ENTOMOLOGY RESEARCH BRANCH FOR THE CONTROL OF INSECTS ATTACKING CROPS AND LIVESTOCK

1956 Season

Foreword

The recommendations of the Entomology Research Branch, Agricultural Research Service, as of March 15, 1956, for the chemical control of insects and mites that attack food, feed, and fiber crops and livestock are presented in these tables. The information was compiled by the various Sections of this Branch in consultation with the Pesticide Regulation Section of the Plant Pest Control Branch and the Federal Extension Service, and was coordinated by Arlo M. Vance.

It is emphasized that these recommendations are those made by the Entomology Research Branch. There are other recommendations and other materials registered for use that will leave no residues or residues within the tolerances set under Public Law 518, the Miller amendment to the Federal Food, Drug, and Cosmetic Act.

Official tolerances for a number of the insecticides now recommended have not yet been announced by the Food and Drug Administration. As they are announced, the Department will review the recommendations and make such changes as are necessary to insure that residues do not exceed the tolerances. Since the status of many chemicals is changing rapidly, we suggest that you keep in touch with the Department of Agriculture, your land-grant college, or manufacturers of specific products for up-to-date information.

Most of the recommendations listed in this Handbook appear in one or more of the references cited. However, some of them have been modified since the publications were issued, and others are new and have not previously appeared in print. The recommendations are limited to the 1956 growing season.

E. F. Knipling, Chief
Entomology Research Branch

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EXPLANATION OF TABLES

"Formulation" refers to the form or concentration of the undiluted insecticide to be used at the designated dosage. Dusts and granules are usually applied at the strength purchased. Unless otherwise indicated, emulsifiable concentrates and wettable powders are to be diluted with water, the amount depending on the output of the equipment, and applied as sprays.

A dash in the tolerance column means that no tolerance had been established at the time these recommendations were prepared. A dash in other columns indicates that there are no data for the insecticide that is opposite it on the same line.

The following abbreviations are used:

Bait	B
Dust	D
Emulsifiable concentrate . .	EC
Granules	G
Spray.	S
Wettable powder.	WP

The titles of the numbered references are given on pages 95-97.

LEGUME AND GRASS INSECTS

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
ALFALFA								
Alfalfa caterpillar	Methoxychlor	100	25% EC	1½-2 qt.	If there are 10 or more caterpillars per sweep of net, usually when alfalfa is 1/3 grown.	7		L 325
Alfalfa weevil								
Larvae								
On hay crop in West	Aldrin	--	EC or 1% D	2 oz. aldrin	In May or June.	15	--	PS 28, L 368, Utah Cir. 135 and Ext. Cir. 213
	Heptachlor	0.1	EC or 2.5% D	3/4 oz. heptachlor	do.	3	--	
	Lindane	--	EC or 1% D	1-2 oz. lindane	do.	15	--	
	Methoxychlor	100	EC or 10% D	1-2 lb. methoxychlor	do.	7	--	
	Parathion	1	EC or 1% D	4 oz. parathion	do.	15	See Precautions.	
On seed crop in West	DDT	--	25% EC 10% D	3-4 qt. 20 lb.	As soon as buds appear.		Do not feed treated alfalfa to live-stock or poultry.	
	Dieldrin	--	EC	4 oz. dieldrin	--		do.	
On crop in East	Heptachlor	0.1	EC	4 oz. heptachlor	Last half of April when plants are 10-15 in. tall; second application not later than 2 weeks before harvest; also to stubble as soon as crop is removed.	7		
Adults								
On crop in West	Dieldrin	--	EC	4 oz. dieldrin	In spring when alfalfa is ½-2 in. tall.	--	Do not pasture alfalfa treated with dieldrin until after first cutting.	
	Heptachlor	0.1	EC 2.5% D	4 oz. heptachlor 12 lb.	do.	7		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
ALFALFA (con.)								
Grasshoppers	Aldrin	--	EC	1½-2 oz. aldrin	Treat field margins and ditchbanks as well as alfalfa.	15	Do not feed alfalfa to dairy animals, animals being finished for slaughter or poultry if it has been treated with chlordane at recommended dosages, with aldrin at more than 2 oz., with dieldrin at more than 1 oz., or with toxaphene at more than 1½ lb. per acre. Do not feed alfalfa for 10 days after treatment with heptachlor at more than 4 but not over 8 oz. per acre.	Utah Cir. 135, FB 2064
	Chlordane	--	EC	½-1 lb. chlordane		--		
	Dieldrin	--	EC	3/4-1 oz. dieldrin	do.	30		
	Heptachlor	0.1	EC	2-4 oz. heptachlor	do.	7		
	Toxaphene	--	EC	1-1½ lb. toxaphene	do.	40		
	Same insecticides	--	D	Increase dosage by 50%	do.	--		
Lygus bugs, leafhoppers, thrips, and yellow-striped armyworm (On seed crop in West)	DDT	--	25% EC 10% D EC	3-4 qt. 20 lb. ½ lb. DDT	As soon as buds appear. do. During bloom.	--	Do not feed alfalfa treated with toxaphene at a dosage exceeding 1½ lb. per acre, or with DDT or dieldrin, to livestock or poultry. When alfalfa is in bloom, apply toxaphene spray or dust or DDT spray in evening or morning when bees are not active.	Utah Cir. 135, Ext. Bul. 221
	Dieldrin	--	EC (1½ lb./gal.) 1.5% D	1½ pt. 17 lb.	Only in early bud stage. do.	--		
	Toxaphene	--	EC 10% D	1½ lb. toxaphene 20 lb.	During bloom 3-4 weeks after bud-stage treatment.	40 --		
Meadow spittlebug	Spring treatment							
	Lindane	--	EC	¼ lb. lindane	Within week after eggs begin to hatch, when alfalfa is 4-6 in. high, from early April to May 20.	14	--	L 341, Ohio Pub. Ser. 22
	Methoxychlor	100	EC	1 lb. methoxychlor		7	--	
	Toxaphene	--	EC	1½ lb. toxaphene		40	--	
	Fall treatment							
	DDT	--	EC	1½ lb. DDT	In fall.	--	Do not feed forage treated with DDT to livestock.	
	Methoxychlor	100	EC	1½ lb. methoxychlor	do.	7		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
ALFALFA (con.)								
Mormon cricket			Baits	Amount in bait formula				
	Aldrin	--	EC or WP for wet bait; oil soln. for dry bait.	2 oz. aldrin	Prepare all baits according to directions in reference. Spread wet or dry bait ahead of advancing band of crickets at 10-20 lb. per acre.		Store bait where livestock cannot reach it. Do not pile it on ground. Keep livestock off air strips where planes are being loaded. Try not to spill bait; clean up any that is spilled.	FB 2081
	Chlordane	--	do.	½ lb. chlordane				
	Heptachlor	0.1	do.	4 oz. heptachlor				
	Sodium fluosilicate	--	Powder (for wet bait only)	4 lb.				
	Toxaphene	--	EC or WP for wet bait; oil soln. for dry bait.	1 lb. toxaphene				
Pea aphid	DDT	--	25% EC 10% D	3-4 qt. 20 lb.	As soon as buds appear.	--	Do not feed alfalfa treated with DDT to livestock or poultry.	Utah Cir. 135 and Ext. Cir. 221
	Malathion	8	EC (5 lb./gal.) 4% D	1 qt. 30 lb.	During bud stage.	7	--	
	Parathion	1	25% EC 1% D	1 pt. 30-35 lb.	do.	15	See Precautions.	
	TEPP	--	40% EC	1 pt.	During bud stage or in evening during bloom period to avoid killing bees.	3	do.	
Potato leafhopper	Methoxychlor	100	25% EC	1 qt.	When alfalfa is about half grown or earlier if insect becomes abundant.	7		L 229
				Per colony				
Red harvester ant	Carbon disulfide	--	Fumigant	4 fl. oz.	Pour into entrance hole of nest.		See Precautions.	FB 1668
	Chlordane	--	5% D	½ lb.	Spread thinly in continuous band 4-6 in. wide, in circle 5-6 ft. in diameter centering at nest entrance.		Do not dust vegetation that may be eaten by man or livestock. Do not broadcast dust.	
	Dieldrin	--	25% D	½ lb.				

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
ALFALFA (con.)								
Spider mites	Sulfur	Safe	D	25 lb.	Before plants bloom, and again 10 days later if needed.			Utah Cir. 135
Spotted alfalfa aphid	Malathion	8	EC (5 lb./gal.) 5% D	1 pt. 15 lb.		7	—	
	Parathion	1	25% EC	1 pt.		15	See Precautions.	
Thrips. See Lygus bugs.								
Tortricid moth	Parathion	1	EC	½ lb. parathion	In May as soon as over-wintering larvae start tying top leaves of plants.	15	See Precautions.	Utah Cir. 135
Yellow-striped armyworm. See Lygus bugs.								
CLOVER (seed crop)								
Clover seed weevil	DDT	--	5% D	20 lb.	When 20% of clover heads are withered and brown, in early morning or late evening when bees are inactive.		Do not feed treated clover to livestock.	Oreg. Cir. Inf. 485
Grasshoppers	. . . . . Same as for Alfalfa							
Meadow spittlebug	do.							
GRASS (range and pasture)								
Grasshoppers	. . . . . Same as for Alfalfa		EC, WP, D, or oil soln.				Do not feed forage treated with aldrin, chlordane, dieldrin, heptachlor, or toxaphene to dairy animals or animals being finished for slaughter and do not allow these animals to graze on treated vegetation.	FB 2064
Mormon cricket	. . . . . Same as for Alfalfa							

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
GRASS (range and pasture) (con.)								
White-fringed beetles	DDT	--	EC, WP, D, or G	25 lb. DDT	Only in winter and early spring to surface of noncultivated land not used for grazing animals, under general direction of Federal or State white-fringed beetle personnel.			L 401
	Dieldrin	--	EC, WP, D, or G	3-5 lb. dieldrin				
PEANUTS								
Corn earworm	DDT	--	3% D	25 lb.			Do not feed peanut forage treated with DDT or toxaphene to livestock.	FB 2063
Fall armyworm	Toxaphene	--	20% D	10 lb.				
Potato leafhopper	DDT	--	1% D	First application 20 lb., second and third applications 25 lb.	First application about July 10, second 3 wk. later, and third 3 wk. after second.			
Southern corn rootworm	Aldrin	--	5% D 2% G In mixture with fertilizer.	40 lb. 100 lb. 2 lb. aldrin	To soil before planting. Broadcast dust with crop duster. Broadcast granules or insecticide-fertilizer mixture with fertilizer distributor, or apply to row with fertilizer side-dressing attachments. If broadcast cultivate immediately after application, working insecticide into top 3-4 in. of soil.			L 391
	Heptachlor	0.1	5% D 2.5% G In mixture with fertilizer.	40 lb. 80 lb. 2 lb. heptachlor				
Tobacco thrips	DDT	--	25% EC 3% D	3 pt. 10 lb.	As soon as injury appears and again 10 days later.		Do not feed treated forage to livestock.	FB 2063
Velvetbean caterpillar	DDT	--	3 or 5% D	20 lb.		--	Do not feed forage treated with DDT or toxaphene to livestock.	L 348
	Methoxychlor	100	5% D	20 lb.		7		
	Toxaphene	--	10% D	15 lb.		--		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEANUTS (con.)								
White-fringed beetles	Aldrin	--	EC, WP, D, or G	Insecticide per acre Broadcast 3 lb. In drill row 3/4-1½ lb.	Broadcast on soil when preparing for planting and immediately work into upper 3 in. Or apply insecticide alone or mixed with a fertilizer in drill row at time of planting.			L 401
	Chlordane	0.3	EC, WP, D, or G	Broadcast 5 lb. In drill row 1-2 lb.				
	DDT	7	EC, WP, D, or G	Broadcast 10 lb. In drill row 2-3 lb.				
	Dieldrin	--	EC, WP, D, or G	Broadcast 1½ lb. In drill row ½-3/4 lb.				
	Heptachlor	0.1	EC, WP, D, or G	Broadcast 3 lb. In drill row 3/4-1½ lb.				
SOYBEANS								
Mexican bean beetle	Malathion	--	25% WP 5% D	4 lb. 35 lb.	To under surface of leaves.	7	--	FB 1624
	Methoxychlor	100	50% WP 5% D	3 lb. 35 lb.		7	--	
	Parathion	--	25% WP 2% D	2 lb. 35 lb.		15	See Precautions.	
Velvetbean caterpillar	. . . . . Same as for Peanuts							
SWEETCLOVER								
Sweetclover weevil	Aldrin	--	EC (2 lb./gal.)	1 qt.	Early in spring to new stands to protect them from over-wintering adults. To control newly emerged adults migrating from old stands in midsummer, apply heptachlor only.	--	Do not allow livestock to graze on sweetclover treated with aldrin or dieldrin until after first cutting.	Neb. E.C. 55-157
	Dieldrin	--	EC (1½ lb./gal.)	1½ pt.		--		
	Heptachlor	0.1	EC (2 lb./gal.)	1 qt.		10		
VETCH (seed crop)								
Vetch bruchid	DDT	--	3% D	25 lb.	As soon as first pods appear.	--	Do not feed treated vetch to livestock.	Oreg. Cir. Inf. 372

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CORN 1/								
Armyworm	DDT	--	25% EC	3 qt.	When larvae are young.		Do not feed treated corn as forage to livestock or use it for ensilage.	FB 1850
	Toxaphene	--	45% EC 60% EC	1½ qt. 1 qt.	do.			
Chinch bug								L 364
Border rows	Dieldrin	--	EC (1½ lb./gal.)	1½ pt.	To base of plants where bugs congregate. Coat or wet the bugs.		Do not feed plants treated with dieldrin or toxaphene to livestock.	
	Toxaphene	--	EC or WP 10% D 20% D	2 lb. toxaphene 20 lb. 10 lb.	do.			
Barrier strips	Dieldrin	--	EC (1½ lb./gal.)	3 pt.	Strip 4 rods wide, half along edge of small-grain field and half along edge of crop to be protected, and strip across each end; repeat 1 or 2 weeks later if needed.		Do not harvest grain for 7 days after it is treated with dieldrin. Do not feed straw from treated crop or treated corn to livestock.	
Corn earworm								PS 11, FB 1651
On dent corn, larvae in whorl, budworm damage	DDT	--	25% EC 1 gal. + light mineral oil ½ gal. to make 25 gal.	25 gal. spray	To entire plant before tasseling and silking.		Do not feed treated corn as forage to livestock or use it for ensilage.	
On seed corn, larvae in silks and ear tips	DDT	--	25% EC 3 gal. + light mineral oil 7 gal. to make 100 gal.	25 gal. spray	With high-clearance sprayer having 4 nozzles per row. Direct spray to ears. Make first application no later than 2 days after silks appear; repeat 3 days or 2 and 4 days later.		do.	

1/ See also Sweet Corn under Vegetable, Bramble, and Strawberry Insects.

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Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CORN (con.)								
European corn borer on dent corn	DDT	--	EC or WP 5 or 10% D 5% G	1½ lb. DDT 40 or 20 lb. 15-20 lb.	When 3/4 of plants show feeding in whorl; and again 7-10 days later.		Do not feed DDT-treated corn as forage to dairy animals or animals being finished for slaughter or use it for ensilage.	Iowa Pamphlet 176, FB 2084
	Ryania	Exempt	40% D	30-40 lb.				
Fall armyworm	DDT or TDE	--	50% WP 5% D	2 lb. 40 lb.	When larvae are small.		Do not feed corn treated with these insecticides as forage to livestock or use it for ensilage.	FB 1990, PS 12
	Toxaphene	--	EC 5% D 20% D	1½-2 lb. toxaphene 40 lb. 10-15 lb.	do.			
On dent corn, larvae in whorl, budworm damage	DDT	--	25% EC 1 gal. + light mineral oil ½ gal. to make 25 gal.	25 gal. spray	To entire plant before tasseling and silking.			
Grasshoppers and Mormon cricket	. . . . . Same as for Alfalfa						Do not feed corn sprayed or dusted with aldrin, chlordane, dieldrin, heptachlor, or toxaphene as forage to dairy animals or animals being finished for slaughter.	
Southern corn rootworm	Aldrin	--	EC (2 lb./gal.) 2.5% D Aldrin-fertilizer mixture	1 or 2 qt. 20 or 40 lb. ½ or 1 lb. aldrin	Minimum dosage to row or hills when planting; maximum dosage broadcast before planting and immediately work into top 3 or 4 in. of soil.			L 391
	Chlordane	--	45% EC 5% D Chlordane-fertilizer mixture	2 or 3 pt. 20 or 30 lb. 1 or 1½ lb. chlordane				
	Heptachlor	0.1	EC (2 lb./gal.) 2.5% D Heptachlor-fertilizer mixture	1 or 2 qt. 20 or 40 lb. ½ or 1 lb. heptachlor				

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CORN (con.)								
Sugarcane beetle	Aldrin	--	EC (2 lb./gal.) 2% G 5% G	2 qt. 50 lb. 20 lb.	In 6-8 in. band on top of row at planting time or as soon as possible after corn comes up.		Do not apply after plants are 6 inches high.	
SORGHUM								
Chinch bug	. . . . . Same as for Corn							
Corn earworm and corn leaf aphid on heads for seed	Aldrin	--	EC	72 mg. aldrin per bag	Streak inside of paper bags to be placed over sorghum heads.		Do not feed heads of sorghum that have been protected with aldrin-treated bags to milk animals, animals being finished for slaughter, or poultry.	
Fall armyworm	. . . . . Same as for Corn							
Grasshoppers	. . . . . Same as for Alfalfa							
Sorghum midge	DDT	--	5% D	25 lb.			Do not feed sorghum grain or forage treated with DDT to livestock.	FB 1566
	. . . . . Also same as for Corn earworm and Corn leaf aphid on sorghum							
SMALL GRAINS								
Armyworm	. . . . . Same as for Corn							
Chinch bug	. . . . . Same as barriers for Chinch bug on corn							
Fall armyworm	. . . . . Same as for Corn.							
Grasshoppers	. . . . . Same as for Alfalfa.						Do not feed small grains treated with aldrin, chlordane, dieldrin, heptachlor, or toxaphene to dairy animals or animals being finished for slaughter.	FB 2064

CORN, SORGHUM, AND SMALL-GRAIN INSECTS (continued)

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions		References
						Min. days from last application to harvest or feeding	Other	
SMALL GRAINS (con.)								
Greenbug on barley, oats, and wheat	Parathion	1	25% EC 1% D 2%	1 pt. 25 lb. 12½ lb.	When temperature is 50°F. or above.	14	See Precautions.	L 309
Mormon cricket	. . . . . Same as for Alfalfa							
Red harvester ant	do.							
White-fringed beetles	. . . . . Same as for Peanuts							

Restriction 1.--Do not apply DDT, chlordane, or toxaphene when foliage that is to be eaten by man or livestock is on the plants.

Restriction 2.--Parathion and TEPP are extremely poisonous. They should be applied only by a person familiar with the hazards who will assume full responsibility for safety and enforce the precautions prescribed by the manufacturers.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions		References
						Min. days from last application to harvest or feeding	Other	
SUGAR BEETS								
Aphids	Nicotine sulfate	--	40% soln.	1 pt. in S	On foliage.	--	--	FB 2060
	Parathion	--	1% D EC or WP	20-30 lb. ¼ lb. parathion	do.	15	Restriction 2.	
	TEPP	--	1% D EC	20-30 lb. ¼ lb. TEPP	do.	3	do.	
Armyworms	DDT	--	10% D	20-30 lb.	On foliage or in trap furrows.		Restriction 1.	
	Toxaphene	--	D	4-6 lb. toxaphene	do.		do.	
Blister beetles	DDT	--	10% D	20-30 lb.	On beetles.		do.	
	Toxaphene	--	D	4-6 lb. toxaphene			do.	
Cutworms	DDT	--	D, WP, or EC	2 lb. DDT	On soil surface and worked into top 2 in.		do.	
	Toxaphene	--	D, WP, or EC 3% B	2 lb. toxaphene 20 lb.	do. Scatter on soil surface late in afternoon.		do.	
Flea beetles	DDT	--	5% D	20 lb.	On foliage.		do.	
Grasshoppers	Toxaphene	--	B, WP, or EC	1½-2 lb. toxaphene	On foliage and soil.		do.	
Leaf miners	Parathion	--	1% D EC or WP	20-30 lb. ¼ lb. parathion	On foliage.	15	Restriction 2.	
	Toxaphene	--	D WP or EC	2 lb. toxaphene 1½ lb. toxaphene	On foliage when insects appear.		Restriction 1.	
Lygus bugs	DDT	--	D, WP, or EC	½ lb. DDT	On foliage of young plants when insects appear.		do.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
SUGAR BEETS (con.)								
Root maggots	Aldrin	--	WP	½ lb. aldrin/100 lb. seed	Mix dry with seed.		--	
			D, WP, or EC	3 lb. aldrin	To soil surface and work into top 3 in.		Apply before planting.	
	Heptachlor	--	D, WP, or EC	2 lb. heptachlor	do.		do.	
			WP	¼ lb. heptachlor/100 lb. seed	Mix dry with seed.		--	
Webworms	Parathion	--	1% D	20-30 lb.	On foliage when insects appear.	15	Restriction 2.	FB 2060
			EC or WP	¼ lb. parathion				
	Toxaphene	--	10% D	20-30 lb.	do.	--	Restriction 1.	
			EC or WP	1½ lb. toxaphene				
White grubs	Chlordane	--	D, WP, or EC	10 lb. chlordane	To soil surface and work into top 3-4 in.		Apply before planting.	FB 1798
Wireworms	Chlordane	--	D, WP, or EC	5-8 lb. chlordane	To soil surface and work into top 6-9 in.		Apply before planting or after harvest.	FB 1866
	DDT	--	D, WP, or EC	10 lb. DDT	do.		do.	
	Ethylene dibromide	--	40% soln. (dilute 85% soln. with petroleum thinner 3:7 by vol.)	10 gal.	Inject 8 in. deep into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	
SUGARCANE								
Sugarcane borer In Louisiana	Cryolite	--	D containing 85-90 % sodium fluoaluminate	8 or 10 lb. cryolite	Minimum dosage with ground machine and maximum with aircraft.			C 878
	Ryania	Exempt	40% D	8 or 10 lb.	For first generation apply 4 times at weekly intervals beginning with general hatching about April 15. For second generation in fields not already dusted, apply 4 times at weekly intervals beginning with general hatching about June 15.			
Wireworms	Chlordane	--	1% D	200 lb.	Apply on cane seed pieces in open furrow at time of planting in fall.			
Small soil arthropods	Chlordane	--	5% D	40 lb.				

Recommendations and tolerances given in this section apply only to crops to be used as human food and not as forage or for livestock feed. None of these recommendations apply to any crop that has been harvested or will be harvested within the next day.

The restrictions referred to by number in the table are as follows:

Restriction 1.--Do not apply DDT or toxaphene to spinach, brussel sprouts, kohlrabi, collard, kale, mustard, beet, swiss chard, rutabaga, or turnip when foliage that is to be eaten is on the plants. Do not apply DDT or toxaphene to foliage that is to be fed to livestock.

Restriction 2.--Do not use parathion, TEPP, sulfotepp, or demeton in the home garden. These insecticides are extremely poisonous and should be applied only by a trained operator who will enforce the precautions prescribed by the manufacturers and assume full responsibility for safety.

Restriction 3.--Do not apply DDT to lima beans for fresh market after the pods begin to form or to snap beans after the pods begin to form. Do not apply DDT to bean vines that are to be fed to livestock.

Restriction 4.--Do not apply chlordane to leafy vegetables past the seedling stage of growth, or to foliage that is to be fed to livestock.

Restriction 5.--Do not use lindane in fields to be planted later to potatoes or other root crops, as it may adversely affect their flavor.

Restriction 6.--Aerosols that are effective for use on plants usually contain the poison gas methyl chloride. Regardless of the insecticide in these aerosols they should be applied only by a trained operator who will enforce the precautions prescribed by the manufacturers and assume full responsibility for safety.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions		References
						Min. days from last application to harvest or feeding	Other	
ASPARAGUS								
Asparagus beetle	DDT	7	5% D 25% EC 50% WP	20-35 lb. 3 pt. 3 lb.	On foliage.		Do not use DDT during cutting season.	HG 46, FB 1646
	Rotenone	Exempt	0.75% D 5% powder	20-35 lb. 4 tbsp./gal. S	do.			
BEANS								
Aphids	Malathion	8	5% D 25% WP 50%	20-35 lb. 6 lb. 1½ pt.	On foliage.	3		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Parathion	1	2% D	25-35 lb.	do.	Snap beans 21, others 15	Restriction 2.	
Bean leaf beetle	DDT	7	3-5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.		Restriction 3. Apply sparingly; heavy dosages may injure beans.	HG 46
	Rotenone	Exempt	0.75-1% 5% powder	20-35 lb. 2½ lb. in S	do.		--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BEANS (con.)								
Corn earworm	DDT	7	3-5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.		Restriction 3. Apply sparingly; heavy dosages may injure beans.	HG 46
	Methoxychlor	14	5% D 30% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7		
Cutworms (in soil)	DDT	7	D, WP, or EC	2 lb. DDT	To soil surface before planting.		Do not apply on plants past seedling stage.	
	Toxaphene	7	D, WP, or EC	2 lb. toxaphene	do.		do.	
			3% B	40 lb.	Spread on soil (not plants) in late afternoon.		—	
Japanese beetle	DDT	7	. . . . . Same as for Bean leaf beetle					
	Methoxychlor	14	. . . . . Same as for Corn earworm					
Leafhoppers	DDT	7	. . . . . Same as for Bean leaf beetle					
	Malathion	8	. . . . . Same as for Aphids					
	Methoxychlor	14	. . . . . Same as for Corn earworm					
	Parathion	1	. . . . . Same as for Aphids					
Lima-bean pod borer	DDT	7	. . . . . Same as for Bean leaf beetle					
Mexican bean beetle	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.	3	—	FB 1624
	Methoxychlor	14	5% D 25% EC 50% WP	20-35 lb. 3 pt. 3 lb.	do.	7	—	
	Parathion	1	D, EC, WP	½ lb. parathion	do.	Snap beans 21, other 15	Restriction 2.	
	Rotenone	Exempt	0.75%-1% D 5% powder Extract	20-35 lb. 2½ lb. in S 1/8 lb. rotenone in S	do.	—	—	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BEANS (con.)								
Root maggots	Aldrin Dieldrin Lindane	0 — 10	Slurry: 1/3 oz. 75% WP + 1½ oz. thiram 75% WP in 1 cup water	1 pt./100 lb. bean seed	Mix with seed and dry at least 1 hour within 30 days of planting.			L 370
Spider mites	Aramite	Snap beans 1 and others 0	3% D 15% WP	20-35 lb. 1½ lb.	On foliage.	15	Do not apply Aramite to lima beans while pods are on plants if they are for fresh market.	HG 46
	Malathion	8	. . . . . Same as for Mexican bean beetle					
	Parathion	1	do.					
Cucumber beetles	DDT	7	. . . . . .Same as for Bean leaf beetle					
	Rotenone	Exempt	. . . . . Same as for Mexican bean beetle					
Stink bugs	DDT	7	. . . . . .Same as for Bean leaf beetle					
	Sabadilla	Exempt	20% D	20-35 lb.	On foliage.			HG 46
Western bean cutworm	DDT	7	5% D	20-35 lb.	On foliage at 2-day intervals after young worms are found.		Restriction 3.	Idaho Ext. Bul. 233
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface every 2-5 years and work into top 6-9 in.		Apply either before planting or after harvest. DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	Lima beans 5 (inorganic bromides)	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	

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VEGETABLE, BRAMBLE, AND STRAWBERRY INSECTS (continued)

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BEETS (table)								
Beet webworm	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On foliage.		Restriction 1.	HG 46
	Pyrethrum	Exempt	0.2% D EC	20-30 lb. 1/40 lb. pyrethrins	do.		--	
	Toxaphene	--	10% D EC or WP	20-30 lb. 1½ lb. toxaphene	do.		Restriction 1.	
Blister beetles	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On beetles.	--	Restriction 1.	
	Methoxychlor	14	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	7	--	
Cutworms	DDT	7	D, WP, or EC	2 lb. DDT	To soil surface before planting.		Restriction 1.	
	Toxaphene	--	D, WP, or EC 3% B	2 lb. toxaphene 40 lb.	do.		do.	
Flea beetle (adults)	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On foliage.	--	Restriction 1.	
	Methoxychlor	14	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	7	--	
	Rotenone	Exempt	0.75-1% D 5% powder	20-30 lb. 2½ lb. in S	do	--	--	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface every 2-5 years and work into top 6-9 in.		Apply either before planting or after harvest. DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	--	40% soln. (dilute 85% soln. with petroleum thinner 3:7 by vol.)	10 gal.	Inject 8 in. into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BLACKBERRY								
Aphids	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.		Do not apply malathion while fruit is on plants.	HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.		--	
Japanese beetle (adults) and rose chafer	DDT	7	5% DDT 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.	--	Do not apply DDT while fruit is on plants.	
	Methoxychlor	14	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7	--	
Orange tortrix	Cryolite	7 (fluorine)	50-90% D	20-35 lb. as D 15 lb. cryolite in S	To foliage in spring when plants begin to grow.		Do not apply while fruit is on plants.	
	TDE	7	5% D 50% WP	20-35 lb. 6 lb.	do.		do.	
Raspberry cane borer, red-necked cane borer	Rotenone	Exempt	0.75% D 5% powder	20-35 lb. 2½ lb. in S	On foliage just before plants begin to bloom; repeat in about 2 weeks.			
Raspberry fruitworm	Rotenone	Exempt	0.75% D	20-35 lb.	On foliage 7 days after first blossoms; repeat in 10 and 20 days.			
Rose scale	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage after harvest.		Do not apply malathion while fruit is on plants.	
	White oil	Exempt	EC	½ cup/gal. water	On dormant plants.		--	
Stink bugs	DDT	7	5% DDT 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.		Do not apply DDT while fruit is on plants.	
	Sabadilla	Exempt	20% D	20-35 lb.	do.		--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BROCCOLI								
Cabbage aphid	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage when aphids first appear; repeat weekly as long as needed.	3	--	FB 1957
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--	--	
	Parathion	1	2% D EC or WP	20-35 lb. ½ lb. parathion	On foliage.	21	Restriction 2.	
	Demeton	0.75	EC	¼ to ½ lb. demeton	do.	21	Restriction 2.	
Cabbage looper and other caterpillars	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage every 7-10 days. On summer or fall plantings in South begin as soon as true leaves appear. On other plantings begin when insects appear.		Do not apply DDT or toxaphene after heads begin to form.	FB 1957
	Toxaphene	7	10-15% D 40% WP 63% EC	25 lb. 6-9 lb. 3-5 pt.				
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S				
Cutworms (soil)	Toxaphene	7	D, WP, or EC 3% B	2 lb. toxaphene 40 lb.	Apply to soil surface before planting. Spread on soil, not plants, in late afternoon.		Do not apply D or S on plants past seedling stage.	
Harlequin bug and stink bugs	Sabadilla	Exempt	10-20% D	25 lb.	On foliage.			HG 44
Root maggots	Chlordane	0.3	40-50% WP 72-75% EC 5% D Drench: 1½ lb. 40% WP or ½ pt. 72% EC/100 gal.	4 lb. 1 qt. 30 lb. 3/4 cup/plant	To soil at base of plants when leaves first appear; repeat shortly after thinning or transplanting. On soil where plant is set.		Restriction 4	FB 1957, HG 44

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BRUSSELS SPROUTS								
Cabbage aphid	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage when aphids first appear; repeat weekly as long as needed.	7		HG 44
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Parathion	1	2% D EC or WP	20-30 lb. ½ lb. parathion	On foliage.	21	Restriction 2.	
	Demeton	0.75	EC	¼-½ lb. demeton	do.	21	do.	
Cabbage looper and other caterpillars	DDT	7	. . . . . Same as for Broccoli				Do not apply DDT or toxaphene on plants past seedling stage.	HG 44
	Toxaphene	7	do.					
	Rotenone	Exempt	do.					
Cutworms (soil)	Toxaphene	7	do.				Do not apply D or S on plants past seedling stage.	
Root maggots	Chlordane	0.3	do.				Restriction 4.	
CABBAGE								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage when aphids first appear; repeat weekly as long as needed.	7		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.			
	Parathion	1	2% D EC or WP	20-35 lb. ½ lb. parathion	On foliage.	21	Restriction 2.	
	Demeton	0.75	EC	¼-½ lb. demeton	do.	21	do.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CABBAGE (con.)								
Caterpillars	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage every 7-10 days. On summer or fall plantings in South begin as soon as true leaves appear. On other plantings begin when insects appear.		Do not apply DDT or toxaphene after heads begin to form.	HG 44
	Toxaphene	7	10-15% D 40% WP 63% EC	25 lb. 6-9 lb. 3-5 pt.				
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S				
Cutworms	Toxaphene	7	D, WP, or EC	2 lb. toxaphene	To soil surface before planting.		Do not apply D or S after heads begin to form.	
			3% B	40 lb.	Spread on soil (not plants) in late afternoon.			
Flea beetles	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage.	--	Do not apply after heads begin to form.	
	Methoxychlor	14	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	7	--	
	Rotenone	Exempt	0.75-1% D 5% powder	20-30 lb. 2½ lb. in S	do.	--	--	
Harlequin bug and stink bugs	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage.		Do not apply DDT after heads begin to form.	
	Sabadilla	Exempt	10-20% D	25 lb.	do.		--	
Mole crickets	Chlordane	0.3	D, WP, or EC	1-2 lb. chlordane	On soil of infested field.		Restriction 4.	
			3% B	40 lb.	Scatter on soil (not plants) in late afternoon.			
			Drench: 4 oz. 50% WP/100 gal.	100 gal./1000 sq. ft.	To surface of seedbed before planting.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CABBAGE (con.)								
Root maggots	Chlordane	0.3	40-50% WP 72-75% EC 5% D	4 lb. 1 qt. 30 lb.	To soil at base of plants when leaves first appear; repeat shortly after transplanting or thinning.		Restriction 4.	HG 44
			Drench: 1½ lb. 50% WP or ½ pt. 75% EC/100 gal.	3/4 cup/plant	On soil where each transplant is set.		do.	
Vegetable weevil	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage.		Do not apply after heads begin to form.	
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.		do.	
White-fringed beetle grubs	DDT	7	D, WP, or EC	¼ lb. DDT/1000 sq. ft.	To soil surface before planting; work into top 3 in.		Do not apply after heads begin to form.	
	Chlordane	0.3	D, WP, or EC	1/8 lb. chlordane/ 1000 sq. ft.	do.		Do not apply to plants past seedling stage.	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in.		Apply either before planting or after harvest. DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT	do.			
CANTALOUP. See Melons.								
CARROT								
Carrot rust fly	Chlordane	0.3	D, EC, or WP	5 lb. chlordane	To soil surface and work into top 6 in. before planting.		Do not apply to plants past seedling stage.	HG 46

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CARROT (con.)								
Leafhoppers	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On foliage.	--	Do not use DDT-treated tops for food or feed.	HG 46
	Methoxychlor	14	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	7	--	
Vegetable weevil	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On foliage.		Do not use DDT-treated foliage for food or feed.	
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.		--	
Wireworms	Chlordane	0.3	D, WP, or EC	5-8 lb. chlordane	To soil surface and work into top 6-9 in.		Apply either before planting or after harvest.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	75 (inorganic bromides)	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. deep into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	
CAULIFLOWER								
Aphids	Malathion	8	. . . . . Same as for Cabbage			7	--	FB 1957
	Nicotine sulfate	2 (nicotine)	do.			--	--	
	Parathion	1	do.			21	Restriction 2.	
	Demeton	0.75	do.			21	do.	
Caterpillars	DDT	7	do.				Do not apply DDT or toxaphene after the curd begins to form.	FB 1957
	Toxaphene	7	do.					
	Rotenone	Exempt	do.					
Cutworms	Toxaphene	7	do.				do.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CAULIFLOWER (con.)								
Flea beetle	DDT	7	. . . . . Same as for Cabbage			--	Do not apply DDT after curd begins to form.	HG 46
	Rotenone	Exempt	do.			--		
	Methoxychlor	14	do.			7		
Harlequin bug and stink bugs	DDT	7	do.				Do not apply DDT after curd begins to form.	
	Rotenone	Exempt	do.					
	Sabadilla	Exempt	do.					
Mole crickets	Chlordane	0.3	do.				Restriction 4.	L 237
Root maggots	Chlordane	0.3	do.				do.	HG 44 and 46
Vegetable weevil	DDT	7	do.				Do not apply DDT after curd begins to form.	
	Rotenone	Exempt	do.					
White-fringed beetle grubs	DDT	7	do.				Do not apply after curd begins to form.	
	Chlordane	0.3	do.				Restriction 4.	
Wireworms	Chlordane	0.3	. . . . . Same as for Beets.				do.	FB 1866
	Ethylene dibromide	10 (inorganic bromides)	do.				Do not apply within 2 weeks before planting.	
CELERY								
Aphids	Malathion	8	. . . . . Same as for Cabbage			7	--	
	Nicotine sulfate	2 (nicotine)	do.			--	--	
	Parathion	1	do.			21	Restriction 2.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CELERY (con.)								
Celery leaf tier	Pyrethrum	Exempt	0.2% D EC	20-30 lb. 1/40 lb. pyrethrum	2 applications ½ hour apart.	--	--	HG 46
	DDT	7	5% D 50% WP 25% EC	20-30 lb. 2½ lb. 2½ qt.	On foliage.	30	Do not apply after bunch begins to form or after stalk is half grown, whichever is earlier.	
Cutworms (soil)	DDT	7	D, WP, or EC	2 lb. DDT	To soil surface.		Do not apply on plants past the seedling stage.	
	Toxaphene	7	D, WP, or EC	2 lb. toxaphene	do.		do.	
			3% B	40 lb.	Spread on soil (not plants) in late afternoon.		--	
Lygus bugs	DDT	7	5% D 50% WP 25% EC	20-30 lb. 2½ lb. 2½ qt.	On foliage.	30	Do not apply after bunch begins to form or after stalk is half grown, whichever is earlier.	
	Pyrethrum	Exempt	0.2% EC	20-30 lb. 1/40 lb. pyrethrum	do.	--	--	
Spider mites	Aramite	1	3% D	20-30 lb.	On foliage.	15		HG 46
	Malathion	8	5% D 25% WP 50% EC	20-30 lb. 6 lb. 1½ pt.	do.	7		
	Parathion	1	2% D EC or WP	20-30 lb. ½ lb. parathion	do.	21	Restriction 2.	
CHARD. See Swiss chard.								
COLLARDS								
Aphids	Nicotine sulfate	2 (nicotine)	. . . . . Same as for Cabbage					HG 44
	Parathion	1	do.			21	Restriction 2.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
COLLARDS (con.)								
Cabbage looper and other caterpillars	DDT	7	. . . . . Same as for Cabbage				Restriction 1.	HG 44
	Rotenone	Exempt	do.				--	
	Toxaphene	--	do.				Restriction 1.	
Cutworms (soil)	DDT	7	do.				do.	HG 29
	Toxaphene	--	do.				do.	
Flea beetles	DDT	7	do.			--	do.	HG 46
	Rotenone	Exempt	do.			--	--	
	Methoxychlor	14	do.			7	--	
Harlequin bug and stink bugs	DDT	7	do.				Restriction 1.	
	Rotenone	Exempt	do.				--	
	Sabadilla	Exempt	do.				--	
Mole crickets	Chlordane	0.3	do.				Restriction 4.	L 237
Root maggots	Chlordane	0.3	do.				do.	HG 44
Vegetable weevil	DDT	7	do.				Restriction 1.	
	Rotenone	Exempt	do.				--	
Wireworms	Chlordane	0.3	do.				Apply either before planting or after harvest.	
CORN. See Sweet corn.								
COWPEA. See Peas, blackeye.								

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CUCUMBER, FIELD								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-40 lb. 6 lb. 1½ pt.	On foliage.	3		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	—		
	Parathion	1	1% D EC or WP	20-40 lb. ¼ lb. parathion	do.	15	Restriction 2.	
	TEPP	0	1% D EC	20-40 lb. ¼ lb. TEPP	do.	3	do.	
Cucumber beetles	Cryolite	7 (fluorine)	50-90% D	20-40 lb. as D 6 lb. cryolite in S	do.	—	Remove excess residue by washing or brushing.	HG 46
	Methoxychlor	14	5% D 50% WP	20-40 lb. 3 lb.	do.	7	—	
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb. in S	do.	--	--	
Pickleworm	Cryolite	7 (fluorine)	50-90% D	20-40 lb. as D 8 lb. cryolite in S	On foliage when worms appear in blossoms; repeat.	--	Remove excess residue by washing or brushing.	
	Lindane	10	1% D 25% WP	20-40 lb. 1 lb.	do.	1	Restriction 5.	
	Rotenone	Exempt	1% D	20-40 lb.	do.	—	Only partly effective	
	Sabadilla	Exempt	20% D	20-40 lb.	do.	--	do.	
Spider mites	Aramite	1	3% D 15% WP	20-35 lb. 1½ lb.	On foliage.	15		HG 46
	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	do.	3		
	Parathion	1	2% D	20-35 lb.	do.	15	Restriction 2.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CUCUMBER, GREENHOUSE								
Aphids	Nicotine	2 (nicotine)	40% nicotine soln.	2 tsp./gal. S	On foliage.	--	--	
	Malathion	8	WP or EC	1 lb. malathion/100 gal.	do.	3	--	
			10% aerosol	1 lb./50,000 cu. ft.	In closed greenhouse in air above plants. Temperature should be 70-85°F. and ventilators closed for at least 2 hours.	3	Should be used only by a trained operator. Restriction 6.	
	Parathion	1	10% aerosol	do.	do.	15	Restrictions 2 and 6.	
	Sulfotepp	0	5% aerosol	do.	do.	15	do.	
	TEPP	0	5% aerosol	do.	do.	3	do.	
Armyworms, cabbage looper, cutworms, earwigs, and thrips	DDT	7	3% D 50% WP	--	On foliage.	--	Do not use DDT on cucumber after fruit begins to form.	
	Malathion	8	. . . . . Same as for Aphids					
	Parathion	1	do.					
Cucumber beetles	DDT	7	3% D	--	On foliage.	--	Do not use DDT on cucumber after fruit begins to form.	
	Parathion	1	10% aerosol	1 lb./50,000 cu. ft.	Same as for Aphids.	15	Restrictions 2 and 6.	
	Rotenone	Exempt	1% D	--	On foliage.	--	--	
Garden centipede	Lindane	10	Drench: 5 oz. 25% WP/50 gal.	50 gal./1,000 sq. ft.	Spray on soil and water it in. For newly set plants, put 1 pt. around base of each plant.		Do not use lindane for this purpose except in greenhouse. Restriction 5.	
Greenhouse whitefly and spider mites	Malathion	8	. . . . . Same as for Aphids					
	Parathion	1	do.					
	TEPP	0	do.					

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CUCUMBER, GREENHOUSE (con.)								
Mealybug	Malathion	8	. . . . . Same as for Aphids					
	Parathion	1	do.					
	Sulfotepp	0	do.					
	TEPP	0	do.					
Mushroom mite	Parathion	1	do.					
	Sulfotepp	0	do.					
	TEPP	0	do.					
Spider mites	. . . . . Same as for Greenhouse whitefly							
Thrips	. . . . . .Same as for Armyworms.							
EGGPLANT								
Colorado potato beetle	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On foliage.	5		HG 46
	Rotenone	Exempt	0.75% D 5% powder	20-30 lb. 2½ lb. in S	do.	--		
Cutworms	DDT	7	D, WP, or EC	2 lb. DDT	On soil surface.		Do not apply on plants past seedling stage.	
	Toxaphene	7	D, WP, or EC	2 lb. toxaphene	do.		do.	
			3% B	40 lb.	Scatter on soil (not plants) late in afternoon.		--	
Eggplant lace bug	Malathion	8	5% D 25% WP 50% EC	20-30 lb. 6 lb. 1½ pt.	On foliage.	3		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
EGGPLANT (con.)								
Flea beetles	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	On foliage.	5	Restriction 1.	HG 46
	Methoxychlor	14	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	7	—	
	Rotenone	Exempt	0.75-1% D 5% powder	20-30 lb. 2½ lb. in S	do.	—	—	
Hornworms	TDE	7	10% D 50% WP 25% EC	20-30 lb. 4 lb. 1 gal.	do.	3		
Spider mites	Malathion	8	5% D 25% WP 50% EC	20-30 lb. 6 lb. 1½ pt.	do.	3		
HOPS								
Aphids and spider mites	Parathion	1	1% D	30-40 lb.	On foliage.	15	Restriction 2.	
KALE								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage when aphids first appear; repeat weekly as long as needed.	7		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Parathion	1	2% D EC or WP	20-35 lb. ½ lb. parathion	On foliage.	21	Restriction 2.	
Cabbage looper and other caterpillars	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage every 7-10 days as needed. Begin on summer or fall plantings in South as soon as true leaves appear, and on other plantings when insects appear.		Restriction 1.	HG 44
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S.	do.		—	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
KALE (con.)								
Cutworms (soil)	DDT	7	D, WP, or EC	2 lb. DDT	To soil surface preferably before planting.		Restriction 1.	HG 44
	Toxaphene	--	D, WP, or EC	2 lb. toxaphene	do.		do.	
			3% B	40 lb.	Spread on soil (not plants) in late afternoon.		--	
Flea beetles	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage.	--	Restriction 1.	
	Methoxychlor	14	5% D 50% WP 25% EC	25 lb. 3 lb. 3 pt.	do.	7	--	
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.	--	--	
Harlequin bug and stink bugs	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	do.		Restriction 1.	
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.		--	
	Sabadilla	Exempt	10-20% D	25 lb.	do.		--	
Mole crickets	Chlordane	0.3	D, WP, or EC	1-2 lb. chlordane	On soil.		Restriction 4.	
			3% B	40 lb.	Scatter on soil.			
			Drench: 4 oz. 50% WP/100 gal.	100 gal./1,000 sq. ft.	To soil surface in seedbed preferably before planting.			
Root maggots	Chlordane	0.3	40-50% WP	4 lb.	To soil at base of plants when leaves first appear; repeat shortly after transplanting or thinning.		Restriction 4.	
			72-75% EC	1 qt.				
			5% D	30 lb.				
			Drench: 1½ lb. 40-50% WP or ½ pt. 72-75% EC	3/4 cup/plant	On soil where each transplant is set.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
KALE (con.)								
Vegetable weevil	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage.		Restriction 1.	HG 44
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.		--	
White-fringed beetle grubs	Chlordane	0.3	D, WP, or EC	1/8 lb. chlordane/ 1,000 sq. ft.	To soil surface before planting. Work into top 3 in.		Restriction 4.	
	DDT	7	D, WP, or EC	¼ lb. DDT/1,000 sq. ft.	do.		Restriction 1.	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in. before planting or after harvest.		Restriction 4.	
KOHLRABI								
Aphids	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	On foliage when aphids first appear; repeat weekly as long as needed.	--	--	
	Parathion	1	2% D EC or WP	20-35 lb. ½ lb. parathion	On foliage.	21	Restriction 2.	
Caterpillars	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	do.		Restriction 1	HG 44 and 46
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.		--	
	Toxaphene	7	10-15% D 40% WP 63% EC	25 lb. 6-9 lb. 3-5 pt.	do.		--	
Cutworms (soil)	DDT	7	. . . . . Same as for Kale				Restriction 1.	
	Toxaphene	7	do.				do.	
Flea beetles	DDT	7	do.			--	Restriction 1.	
	Methoxychlor	14	do.			7	--	
	Rotenone	Exempt	do.			--	--	
Root maggots	Chlordane	0.3	do.				Restriction 4.	

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Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
LETTUCE, FIELD								
Caterpillars	DDT	7	5% D 25% EC 50% WP	20-30 lb. 3 pt. 3 lb.	On foliage.	30	Do not apply to head lettuce after heads begin to form or to leaf lettuce after seedling stage of growth.	HG 46, Ariz. Ext. Cir. 219
	Dieldrin	--	D, WP, or EC	½ lb. dieldrin	do.	30	do.	
	Toxaphene	7	D, WP, or EC	3-4½ lb. toxaphene	do.	30	do.	
	Rotenone	Exempt	1% D 5% powder	20-30 lb. 4½ lb. in S	do.	--	--	
Leafhoppers	DDT	7	. . . . . Same as for Kale			30	Do not apply DDT to head lettuce after heads begin to form or to leaf lettuce after seedling stage of growth.	HG 46
	Malathion	8	do.			7		
	Methoxychlor	14	do.			7		
Mole crickets	Chlordane	0.3	do.			30	Restriction 4.	L 237
Wireworms	Chlordane	0.3	do.				Apply either before planting or after harvest.	FB 1866
LETTUCE, GREENHOUSE								
Aphids	Malathion	8	WP or EC	1 lb. malathion/ 100 gal.	On foliage.	7	--	
			10% aerosol	1 lb./50,000 cu. ft.	Apply aerosols in closed greenhouse in air above plants. Temperature should be 70-85°F. and ventilators closed for at least 2 hours.	7	Restriction 6.	
	Parathion	1	10% aerosol	do.		21	Restriction 2 and 6.	
	Sulfotepp	0	5% aerosol	do.		21	do.	
	TEPP	0	5% aerosol	do.		3	do.	
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 tsp./gal.	On foliage.	--	--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
LETTUCE, GREENHOUSE (con.)								
Armyworms, cabbage looper, and cutworms	DDT	7	3% D	--	On foliage.	--	Do not apply to head lettuce after heads begin to form or to leaf lettuce after seedling stage of growth.	
	Malathion	8	WP or EC 10% aerosol	1 lb. malathion 1 lb./50,000 cu. ft.	do. Same as for Aphids.	7 7	-- Restriction 6.	
	Parathion	1	10%	1 lb./50,000 cu. ft.	do.	21	Restriction 2 and 6.	
Greenhouse whitefly	Malathion	8	WP or EC 10% aerosol	1 lb. malathion 1 lb./50,000 cu. ft.	On foliage. Same as for Aphids.	7 7	-- Restriction 6.	
	Parathion	1	10% aerosol	do.	do.	21	Restriction 2 and 6.	
	TEPP	0	5% aerosol	do.	do.	3	do.	
Sowbugs	DDT	7	3% D	--	On soil and in hiding places.	--	Do not apply to head lettuce after heads begin to form or to leaf lettuce after seedling stage of growth.	
	Parathion	1	10% aerosol	1 lb./50,000 cu. ft.	Same as for Aphids.	21	Restriction 2 and 6.	
LOGANBERRY								
Aphids	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.		Do not apply while fruit is on plants.	HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.		--	
Japanese beetle adults and rose chafer	DDT	7	5% DDT 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	--	Do not apply while fruit is on plants.	
	Methoxychlor	14	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7	--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
LOGANBERRY (con.)								
Orange tortrix	Cryolite	7 (fluorine)	50-90% D	20-35 lb. as D 15 lb. cryolite in S	On foliage in spring when plants begin to grow.		Do not apply while fruit is on plants.	HG 46
	TDE	7	5% D 50% WP	20-35 lb. 6 lb.	do.		do.	
Raspberry cane borer	Rotenone	Exempt	0.75% D 5% powder	20-35 lb. 2½ lb. in S	On foliage just before plants begin to bloom; repeat in 2 weeks.			
Raspberry fruit-worm	Rotenone	Exempt	0.75% D 5% powder	20-35 lb. 2½ lb. in S	On foliage 7 days after first blossoms; repeat in 10 and 20 days.			
Rose chafer. See Japanese beetle.								
Rose scale	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage after harvest.		Do not apply while fruit is on plants.	
	White oil	Exempt	EC	½ cup/gal. water	On dormant plants.		--	
Stink bugs	DDT	7	5% DDT 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.		Do not apply while fruit is on plants.	
	Sabadilla	Exempt	20% D	20-35 lb.	do.		--	
MELONS								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-40 lb. 6 lb. 1½ pt.	On foliage.	3	--	L 389
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--	--	
	Parathion	1	2% D EC or WP	15-30 lb. 1/3 lb. parathion	do.	15	Restriction 2.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
MELONS (con.)								
Cucumber beetles	Cryolite	7 (fluorine)	50-90% D	20-40 lb. as D 6 lb. cryolite in S	On foliage.	--	--	L 389
	Dieldrin	--	2% D EC or WP	15-30 lb. 1/3 lb. dieldrin	do.	30	--	
	Methoxychlor	14	5% D 50% WP	20-40 lb. 3 lb.	do.	7	--	
	Parathion	1	2% D EC or WP	15-30 lb. 1/3 lb. parathion	do.	15	Restriction 2.	
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb. in S	do.	--	--	
Leafhoppers	Parathion	1	2% D EC or WP	15-30 lb. 1/3 lb. parathion	do.	15	Restriction 2.	
Leaf miners and thrips	Dieldrin	--	2% D EC or WP	15-30 lb. 1/3 lb. dieldrin.	do.	30	--	
	Parathion	1	2% D EC or WP	15-30 lb. 1/3 lb. parathion	do.	15	Restriction 2.	
Pickleworm	Cryolite	7 (fluorine)	50-90% D	20-40 lb. as D 6 lb. cryolite in S	do.		Only partly effective.	FB 1468
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb. in S	do.		do.	
Spider mites	Aramite	1	D or WP	½ lb. Aramite	do.	15	--	L 389
	Malathion	8	5% D 25% WP 50% EC	20-40 lb. 6 lb. 1½ pt.	do.	3	--	
	Ovex	--	7.5% D	15-30 lb.	do.	--	Do not apply ovex after harvest begins.	
	Parathion	1	2% D EC or WP	15-30 lb. 1/3 lb. parathion	do.	15	Restriction 2.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
MINT								
Flea beetles On crop for distillation only	Cryolite	--	50% D	25-30 lb.	On foliage.		Do not feed spent hay from treated crop to livestock.	FB 1988
	DDT	--	5% D	25-30 lb.	do.		do.	
On crop for market or home use	Rotenone	Exempt	1% D	25-30 lb.	do.		--	
MUSKMELON. See Melons.								
MUSTARD								
Aphids	Parathion	1	1% D WP or EC	20-35 lb. ¼ lb. parathion	On foliage as soon as plants appear; repeat weekly.	21	Restriction 2.	
	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	do.	7		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Rotenone	Exempt	1% D 5% EC 5% powder	20-35 lb. 2 qt. 5 lb. in S	do.	--		
Caterpillars and flea beetles	Cryolite	7 (fluorine)	50-90% D	20-35 lb. as D	On foliage every 7 to 10 days. Begin on fall plantings in South as soon as plants are up; on other plantings when insects appear.		Do not apply to plants past seedling stage of growth.	
	Rotenone	Exempt	1% D 5% EC 5% powder	20-35 lb. 2 qt. 5 lb. in S	do.		--	
	Toxaphene	--	10-15% D 10% WP 63% EC	20-35 lb. 6-9 lb. 3-5 pt.	do.		Restriction 1.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
MUSTARD (con.)								
Harlequin bug	Rotenone	Exempt	1% D 5% EC 5% powder	20-35 lb. 2 qt. 5 lb. in S	On foliage.		Only partially effective.	HG 46
	Sabadilla	Exempt	20% D	20-35 lb.	do.		--	
Vegetable weevil	Rotenone	Exempt	1% D 5% EC 5% powder	20-35 lb. 2 qt. 5 lb. in S	do.			
OKRA								
Aphids	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.		Do not apply while pods are on plants.	HG 46 and L 305
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.		---	
Blister beetles and corn earworm	Cryolite	7 (fluorine)	50-90% D	20-35 lb. as D 12 lb. cryolite in S	do.		Do not apply while pods are on plants.	
	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.		do.	
Cucumber beetles and flea beetles	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.		do.	
	Rotenone	Exempt	1% D 0.025% spray	20-35 lb. --	do.		--	
Japanese beetle	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.		Do not apply while pods are on plants.	
	Methoxychlor	--	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.		do.	
Stink bugs	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.		do.	
	Sabadilla	Exempt	20% D	20-35 lb.	do.		--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
ONIONS								
Onion maggot	Dieldrin	0.1	WP slurry	½ lb. toxicant/100 lb. seed	To seed in slurry with thiram.		Apply before planting.	
	Heptachlor	0.1	WP slurry	do.	do.		do.	
Thrips	DDT	7	10% D EC or WP	30 lb. 1½ lb. DDT	On foliage every 10-14 days.	--	Do not apply on foliage that is to be eaten.	L 372
	Dieldrin	0.1	1.5% D EC or WP	30 lb. ½ lb. dieldrin	do.	14	do.	
	Heptachlor	0.1	2.5% D EC or WP	30 lb. ½ lb. heptachlor	do.	5	do.	
	Toxaphene	7	20% D EC or WP	30 lb. 2 lb. toxaphene	do.	--	do.	
	Parathion	1	2% D EC or WP	30 lb. ¼ lb. parathion	do.	21	Restriction 2.	
	Malathion	8	5% D EC or WP	30 lb. 3/4 lb. malathion	do.	3	--	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface every 2-5 years and work into top 6-9 in.		Apply either before planting or after harvest. DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	--	40% soln. (dilute 85% soln. with petroleum thinner 3:7 by vol.)	10 gal.	Inject 8 in. into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	
PEAS, BLACKEYE								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.	3	This usage applies to blackeye peas as a vegetable only, not as a forage crop.	HG 46
Cowpea curculio	Methoxychlor	14	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7	do.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEAS, GARDEN								
Aphids	DDT	7	D or EC	1-2 lb. DDT	On foliage.	--	Do not apply DDT to varieties of peas with edible pods after pods form, or vines to be fed to livestock.	FB 1945
	Malathion	8	D or EC	1-1¼ lb. malathion	do.	3	--	
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--	--	
	Parathion	1	1% D EC or WP	25-35 lb. 1/3-1/2 lb. parathion	do.	10	Restriction 2.	
	TEPP	0	1% D	25-35 lb.	do.	3	do.	
	Rotenone	Exempt	1% D	35 lb.	do.	--	--	
Pea moth	Parathion	1	1% D EC or WP	25-35 lb. 1/3-1/2 lb. parathion	do.	10	Restriction 2.	
Pea weevil	DDT	7	5% D	20-25 lb.	To foliage during early bloom period before weevil eggs are laid.	--	Do not apply DDT to varieties with edible pods after pods form, or vines to be fed to livestock.	FB 1971
	Malathion	8	D or EC	1-1¼ lb. malathion	do.	3	--	
	Methoxychlor	14	5% D	20-25 lb.	do.	7	--	
	Parathion	1	1% D EC or WP	25-35 lb. 1/3-1/2 lb. parathion	do.	10	Restriction 2.	
PEPPERS								
Aphids	Malathion	8	5% D 25% WP 50% EC	15-30 lb. 6 lb. 1½ pt.	On foliage.	3	--	FB 2051
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--	--	
	Parathion	1	1% D 15% EC	15-30 lb. 1 pt.	do.	15	Restriction 2.	
	Rotenone	Exempt	1% D 5% powder	15-30 lb. 3 lb. in S	do.	--	--	

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Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEPPERS (con.)								
Cutworms (soil)	DDT	7	D, WP, or EC	2 lb. DDT	To soil surface.		Do not apply on plants past seedling stage of growth.	HG 29
	Toxaphene	--	D, WP, or EC 3% B	2 lb. toxaphene 40 lb.	do. Spread on soil (not plants) in late afternoon.		do. --	
Flea beetles	DDT	7	5% D 50% WP	15-30 lb. 3 lb.	On foliage.	5	--	FB 2051
	Methoxychlor	14	5% D 50% WP 25% EC	15-30 lb. 3 lb. 3 pt.	do.	7	--	
	Parathion	1	1% D 15% EC	15-30 lb. 1 pt.	do.	15	Restriction 2.	
	Rotenone	Exempt	1% D 5% powder	15-30 lb. 3 lb. in S	do.	--	--	
Hornworms	TDE	7	10% D 50% WP 25% EC	15-30 lb. 4 lb. 1 gal.	do.	--	Wash peppers as directed in FB 2051.	
Leaf miners	Parathion	1	1% D 15% EC	15-30 lb. 1 pt.	do.	15	Restriction 2.	
Pepper maggot	Parathion	1	1% D 15% EC	15-30 lb. 1 pt.	do.	15	Restriction 2.	
	Rotenone	Exempt	1% D 5% powder	15-30 lb. 3 lb. in S	do.	--	--	
Pepper weevil	DDT	7	10% D 50% WP	15-30 lb. 3 lb.	To infested foliage every 7-10 days.	5		L 226
POTATO								
Aphids	DDT	--	5% D 25% EC 50% WP	20-35 lb. 2½-3 pt. 2-5 lb.	On foliage.	--	--	FB 2040, FB 2098
	Malathion	8	5% D 50% EC 25% WP	20-35 lb. 1½-2 pt. 3-5 lb.	do.	3	--	

Aphids continued on page 43.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
POTATO (con.)								
Aphids (con.)	Nicotine sulfate	--	40% nicotine soln.	1½-2 pt. in S	On foliage.	--	--	FB 2040, FB 2098
	Parathion	--	1% D EC or WP	20-35 lb. ½ lb. parathion	do.	5	Restriction 2.	
	Rotenone	Exempt	0.75-1% D 5% EC 5% powder	20-35 lb. 1½-2 qt. 4-5 lb. in S	do.	--	--	
Armyworms	DDT	--	D, WP, or EC	1½-2 lb. DDT	To nearby infested vegetation before worms reach potato fields.		Restriction 1.	FB 2040
	Toxaphene	--	D, WP, or EC	1½-2 lb. toxaphene				
Blister beetles	Cryolite	--	50-90% D	20-35 lb. as D 8-12 lb. cryolite in S	Dust or spray beetles.			
	DDT	--	D, WP, or EC	1½-2 lb. DDT	do.			
	Methoxychlor	--	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.			
	Toxaphene	--	D, WP, or EC	2-3 lb. toxaphene	do.			
Colorado potato beetle and flea beetle adults	Calcium arsenate	--	Powder 25% D in lime or talc	5 lb. in S 20-35 lb.	On foliage.			FB 1958, 2034, 2040, and 2098
	Cryolite	--	50-90% D	20-35 lb. as D 8-12 lb. cryolite in S	do.			
	DDT	--	5% D 25% EC 50%	20-35 lb. 2½-3 pt. 2-5 lb.	do.			
	Dieldrin	--	D, EC, or WP	1/2-3/4 lb. dieldrin	do.			
	Heptachlor	0.1	D, EC, or WP	1/2-3/4 lb. heptachlor	do.			
	Paris green	--	10% D in lime Powder	20-35 lb. 4 lb. paris green	do.			
	Rotenone	Exempt	0.75-1% D 5% EC 5% powder	20-35 lb. 1½-2 qt. 4-5 lb. in S	do.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
POTATO (con.)								
Cutworms	DDT	--	D, EC, or WP	2 lb. DDT	To soil surface.			HG 29
	Toxaphene	--	D, EC, or WP 3% B	2 lb. toxaphene 40 lb.	do. Spread on soil (not plants) in late afternoon.			
European corn borer. See Plant bugs.								
Flea beetles (adults). See Colorado potato beetle.								
Flea beetles (larvae)	Aldrin	0.1	D, G, WP, or EC	2-3 lb. aldrin	To soil surface before planting.			FB 2098
	Chlordane	0.3	D, G, WP, or EC	4-8 lb. chlordane	do.			
	Dieldrin	--	D, G, WP, or EC	2 lb. dieldrin	do.			
	Heptachlor	0.1	D, G, WP, or EC	2-3 lb. heptachlor	do.			
Grasshoppers	Toxaphene	--	D WP or EC	2½ lb. toxaphene 1½ lb. toxaphene	To foliage in and around potato field as needed.		Restriction 1.	FB 2040
Leafhoppers	DDT	--	5% D 25% EC 50%	20-35 lb. 2½-3 pt. 2-5 lb.	On foliage.	--	--	FB 2098
	Malathion	8	5% D 50% EC 25% WP	20-35 lb. 1½-2 pt. 3-5 lb.	do.	3	--	
	Methoxychlor	--	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	--	--	
	Parathion	--	1% D EC or WP	20-35 lb. ½ lb. parathion	do.	5	Restriction 2.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
POTATO (con.)								
Mole crickets	Aldrin	0.1	D, WP, EC, or B	1-2 lb. aldrin	On soil surface preferably before planting.			FB 2098
	Chlordane	0.3	D, WP, EC, or B	1-2 lb. chlordane	do.			
	Dieldrin	—	D, WP, EC, or B	1-2 lb. dieldrin	do.			
	Heptachlor	0.1	D, WP, EC, or B	1-2 lb. heptachlor	do.			
Plant bugs, potato tuberworm, and European corn borer	DDT	—	5% D 25% EC 50%	20-35 lb. 2½-3 pt. 2-5 lb.	On foliage.			
Potato psyllid	DDT	—	5% D 50% WP	20-35 lb. 2 lb.	To foliage of infested fields when plants are 6 in. high; repeat 3 or 4 times at 2-week intervals.			FB 2034
Potato tuberworm. See Plant bugs.								
Vegetable weevil (on foliage)	Aldrin	0.1	D, WP, or EC	3/4 lb. aldrin	On foliage.	--	—	FB 2098
	DDT	--	5% D 25% EC 50% WP	20-35 lb. 2½-3 pt. 2-5 lb.	do.	--	--	
	Parathion	—	1% D EC or WP	20-35 lb. ½ lb. in S	do.	5	Restriction 2.	
White-fringed beetle grubs	Aldrin	0.1	D, G, WP, or EC	2-3 lb. aldrin	To soil surface before planting. Work into top 3-4 in.			
	Chlordane	0.3	D, G, WP, or EC	4-6 lb. chlordane	do.			
	DDT	—	D, G, WP, or EC	10 lb. DDT	do.			
	Dieldrin	--	D, G, WP, or EC	2 lb. dieldrin	do.			
	Heptachlor	0.1	D, G, WP, or EC	2-3 lb. heptachlor	do.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
POTATO (con.)								
White grubs	Aldrin	0.1	D, G, WP, or EC	2-3 lb. aldrin	To soil surface before planting. Work into top 3-4 in.			FB 2098
	Chlordane	0.3	D, G, WP, or EC	10 lb. chlordane	do.			
	Dieldrin	—	D, G, WP, or EC	2 lb. dieldrin	do.			
	Heptachlor	0.1	D, G, WP, or EC	2-3 lb. heptachlor	do.			
Wireworms In any area	Ethylene dibromide	—	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	FB 1866
	Chlordane	0.3	D, G, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in.		—	
In irrigated lands only	DDT	—	D, WP, or EC	10 lb. DDT	do.			
In South	Aldrin	0.1	D, G, WP, or EC	2-3 lb. aldrin	do.			FB 2098
	Dieldrin	—	D, G, WP, or EC	2 lb. dieldrin	do.			
	Heptachlor	0.1	D, G, WP, or EC	2-3 lb. heptachlor	do.			
PUMPKIN								
Aphids	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1½ pt. in S	On foliage.	--	--	FB 2086
	Parathion	1	1% D 15% WP	20-40 lb. 1 lb.	do.	15	Restriction 2.	
	TEPP	0	1% D 40% EC	20-40 lb. ½ pt.	do.	3	do.	
Cucumber beetles	Cryolite	7 (fluorine)	50-90% D	20-40 lb. as D 6 lb. cryolite in S	do.	—	Remove excess residues by washing or brushing.	
	Methoxychlor	14	5% D 50% WP	20-40 lb. 3 lb.	do.	7	do	
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb. in S.	do.	—	--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PUMPKIN (con.)								
Cutworms	DDT	7	D, WP, or EC	2 lb. DDT	Apply on soil surface.		Do not apply after plants come up.	FB 2086
	Toxaphene	--	D, WP, or EC	2 lb. toxaphene	do.		do.	
			3% B	40 lb.	Scatter on soil (not plants) late in afternoon.		Do not get on plants.	
Squash bug	DDT	7	5% D	--	To bugs on soil and under trap boards.		Do not apply on plants.	HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1½ pt.	On foliage.		Only partly effective.	FB 2086
	Sabadilla	Exempt	20% D	20-40 lb.	do.		--	
Squash vine borer	Lindane	10	1% D 25% WP	20-30 lb. 1 lb.	Once or twice a week to stems and vines at base of plants.	1	Restriction 5.	
	Methoxychlor	14	5% D 50% WP	20-40 lb. 3 lb.	do.	7	Only partly effective.	FB 2086
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb.	do.	--	do.	
RADISH								
Root maggots	Chlordane	0.3	5% D 45% EC 50% WP	1½ oz./50 ft. row 3 tsp./gal./200 ft. row 1½ level tbsp./gal./200 ft. row	When first leaves appear; repeat shortly after thinning.	--	Do not apply on plants past seedling stage.	HG 46
RASPBERRY								
Aphids	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.		Do not apply malathion while fruit is on plants.	HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
RASPBERRY (con.)								
Japanese beetle adults and rose chafer	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.	--	Do not apply DDT while fruit is on plants.	HG 46
	Methoxychlor	14	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7		
Orange tortrix	Cryolite	7 (fluorine)	50-90% D	20-35 lb. as D 15 lb. cryolite in S	To foliage in spring when plants begin to grow.		Do not apply while fruit is on plants.	
	TDE	7	5% D 50% WP	20-35 lb. 6 lb.	do.		do.	
Raspberry and red-necked cane borers	Rotenone	Exempt	0.75% D	20-35 lb.	On foliage just before plants begin to bloom; repeat in about 2 weeks.			
Raspberry fruit-worm	Rotenone	Exempt	0.75% D	20-35 lb.	On foliage 7 days after first blossoms; repeat in 10 and 20 days.			
Rose chafer. See Japanese beetle.								
Rose scale	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage after harvest.		Do not apply malathion while fruit is on plants.	
	White oil	Exempt	EC	½ cup/gal. water	On dormant plants.			
Stink bugs	DDT	7	5% DDT 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.		Do not apply DDT while fruit is on plants.	
	Sabadilla	Exempt	20% D	20-35 lb.	do.			
RUTABAGA								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage when aphids first appear; repeat weekly as long as needed.	7		HG 46

Aphids continued on page 49.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
RUTABAGA (con.)								
Aphids (con.)	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt.	On foliage when aphids first appear; repeat weekly as long as needed.	--		HG 46
	Parathion	1	2% D EC or WP	20-35 lb. ½ lb. parathion	On foliage.	21	Restriction 2.	
Cabbage looper and other caterpillars	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	do.		Restriction 1.	HG 46
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.		--	
Cutworms	DDT	7	D, WP, or EC	2 lb. DDT	To soil surface before planting.		Restriction 1.	
Flea beetles	DDT	7	5% D 50% WP 25% EC	25 lb. 2½ lb. 2½ qt.	On foliage	--	do.	
	Methoxychlor	14	5% D 50% WP 25% EC	25 lb. 3 lb. 3 pt.	do.	7	--	
	Rotenone	Exempt	1% D 5% EC 5% powder	25 lb. 2 qt. 5 lb. in S	do.	--	--	
Root maggots	Chlordane	0.3	5% D 45% EC 50% WP	20 lb. 2½ pt. 2½ lb.	Dust or spray plants as soon as they appear; repeat shortly after thinning.		Restriction 4.	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in.		Apply either before planting or after harvest.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT	do.		DDT recommended only in irrigated lands in West.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
SOYBEAN, EDIBLE (not as a forage crop)								
Mexican bean beetle	Malathion	--	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.	3		FB 1624
	Methoxychlor	--	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7		
	Rotenone	Exempt	1% D 5% powder	20-35 lb. 2½ lb. in S	do.	--		
Velvetbean caterpillar	Methoxychlor	--	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7		L 348
SPINACH								
Aphids	Parathion	1	1% D WP or EC	20-35 lb. ¼ lb. parathion	On foliage.	21	Restriction 2.	
	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	do.	7		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Rotenone	Exempt	1% D 5% EC 5% powder	20-35 lb. 2 qt. 5 lb. in S	do.	--		
Beet webworm	Pyrethrum	Exempt	0.2% D EC	20-30 lb. 1/40 lb. pyrethrum	do.			
SQUASH								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-40 lb. 4 lb. 1½ pt.	On foliage.	3	--	FB 2086
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1½ pt. in S	do.	--	--	
	Parathion	1	1% D 15% WP	20-40 lb. 1 lb.	do.	15	Restriction 2.	
	TEPP	0	1% D 40% EC	20-40 lb. ½ pt.	do.	3	do.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
SQUASH (con.)								
Cucumber beetles	Cryolite	7 (fluorine)	50-90% D	20-40 lb. in D 6 lb. cryolite in S	On foliage.	--	Remove excess residue by washing or brushing.	FB 2086
	Methoxychlor	14	5% D 50% WP	20-40 lb. 3 lb.	do.	7	do.	
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb. in S	do.	--	--	
Cutworms	DDT	7	D, WP, or EC	2 lb. DDT	On soil surface, not plants.		Do not apply after plants come up.	
	Toxaphene	--	D, WP, or EC	2 lb. toxaphene	do.		do.	
			3% B	40 lb.	Scatter on soil (not plants) late in afternoon.		Do not get on plants.	
Pickleworm	Cryolite	7 (fluorine)	50-90% D	20-40 lb. as D 8 lb. cryolite in S	On foliage when worms appear in blossoms; repeat weekly.	--	Remove excess residue by washing or wiping.	
	Lindane	10	1% D 25% WP	20-30 lb. 1 lb.	do.	1	Restriction 5.	
	Rotenone	Exempt	1% D	20-40 lb.	do.	--	Only partly effective.	
	Sabadilla	Exempt	20% D	20-40 lb.	do.	--	do.	
Squash bug	DDT	7	5% D	--	To bugs on soil and under trap boards.		Do not apply on plants.	HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1½ pt. in S	On foliage		Only partly effective.	FB 2086
	Sabadilla	Exempt	20% D	20-40 lb.	do.		--	
Squash vine borer	Lindane	10	1% D	20-30 lb.	To stems and vines at base of plants at weekly intervals.	1	Restriction 5.	
	Methoxychlor	14	5% D 50% WP	20-40 lb. 3 lb.	do.	7	Only partly effective.	
	Rotenone	Exempt	1% D 4% powder	20-40 lb. 4 lb. in S	do.	--	do.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
STRAWBERRY								
Ants	Chlordane	0.3	Drench: 4 oz. 50% WP or 3 fl. oz. 45% EC/100 gal.	100 gal./1,000 sq. ft.	Drench infested soil.		Do not get on fruit.	HG 28, 46
Aphids	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage.	3		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Parathion	1	2% D EC or WP	20-35 lb. ½ lb. parathion	do.	14	Restriction 2.	
Earwigs	Chlordane	0.3	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	To infested soil in and adjacent to planting.	--	Do not allow chlordane to contaminate strawberry fruit or other food.	HG 46
Flea beetles	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.	--	Do not apply while fruit is on plants.	
	Methoxychlor	14	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7	--	
	Rotenone	Exempt	0.75-1% D 5% powder	20-35 lb. 2½ lb. in S	do.	--	--	
Mole crickets	Chlordane	0.3	3% B	40 lb.	On soil.		--	
			D, WP, or EC	4 lb. chlordane	do.		Do not apply while fruit is present.	
Spider mites	Aramite	1	3% D 15% WP	20-35 lb. 1½ lb.	On foliage.	21		
	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	do.	3		
Spittlebugs	Methoxychlor	14	. . . . . Same as for Flea beetles					
	Rotenone	Exempt	do.					

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
STRAWBERRY (con.)								
Strawberry leaf beetle	Methoxychlor	14	. . . . . Same as for Flea beetles.					HG 46
	Rotenone	Exempt	do.					
Strawberry root weevil	Chlordane	0.3	. . . . . Same as for Mole crickets					
Strawberry weevil	Methoxychlor	14	. . . . . .Same as for Flea beetles					
White-fringed beetle	DDT	7	D, WP, or EC	10 lb. DDT	To soil surface and work into top 3 in.		Do not get on fruits.	
	Chlordane	0.3	D, WP, or EC	5 lb. chlordane	do.		do.	
White grubs	Chlordane	0.3	D, WP, or EC	10 lb. chlordane	do.		do.	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in. before planting.		DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	5 (inorganic bromides)	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. deep into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	
SWEET CORN								
Corn earworm								
Larvae in silks and ears	DDT	7	1 gal. each of 25% EC and light mineral oil to make 25 gal.	25 gal. as S	Apply 3 times at 3-day intervals beginning on day after silks appear. Wet silks thoroughly.		Do not feed corn treated with DDT as forage to dairy animals or animals being finished for slaughter.	PS 11
Larvae in whorl, budworm damage	DDT	7	Reduce amount of oil by half.	25 gal. as S	To entire plant before tasseling and silking.			
European corn borer	DDT	7	EC or WP 5 or 10% D 5% G	1½ lb. DDT 40 or 20 lb. 15-20 lb.	Apply 4 times at 5-day intervals beginning when borers start hatching or begin feeding. Cover plants thoroughly.		do.	FB 2084, Iowa Pamphlet 176
	Ryania	Exempt	40% D	30-40 lb.				
Japanese beetle	DDT	7	25% EC 50% WP 5% D	3 pt. 3 lb. 20-35 lb.	On silks and foliage.		do.	HG 46

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
SWEET CORN (con.)								
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in. before planting or after harvest.		DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	—	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. deep into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	
SWEETPOTATO								
Sweetpotato weevil	Dieldrin	--	2% D	75 lb. in 1 application or 40 lb. in each of 2 applications.	To soil at base of plants in strips 6-8 in. wide.	30		HG 46
	Heptachlor	0.1	2 or 2.5% D	do.	do.	30		
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface every 2-5 years and work into top 6-9 in.		Apply either before planting or after harvest.	FB 1866
	Ethylene dibromide	50 (inorganic bromides)	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	
SWISS CHARD								
Beet webworm	Pyrethrum	Exempt	0.2% D EC	20-30 lb. 1/40 lb. pyrethrins	On foliage.			HG 46
Flea beetles	Rotenone	Exempt	1% D 5% powder	20-30 lb. 2½ lb. in S	do.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
TOMATO, FIELD								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-30 lb. 6 lb. 1½ pt.	On foliage.	3		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Parathion	1	2% D WP or EC	20-30 lb. ½ lb. parathion	do.	15	Restriction 2.	
Armyworms. See Tomato fruitworm.								
Blister beetles	DDT	7	10% D	20-30 lb.	On beetles.	5		HG 46
	Toxaphene	7	20% D	20-30 lb.	do.	5		
Colorado potato beetle	Cryolite	7 (fluorine)	50-90% D	20-30 lb. as D 12 lb. cryolite in S	On foliage.	5		
	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	5		
	Rotenone	Exempt	0.75% D 5% powder	20-30 lb. 2½ lb. in S	do.	--		
Cutworms (in soil)	DDT	7	D, WP, or EC	2 lb. DDT	On soil surface.			
	Toxaphene	7	D, WP, or EC	2 lb. toxaphene	do.			
Flea beetles	Cryolite	7 (fluorine)	50-90% D	20-30 lb. as D 12 lb. cryolite in S	On foliage.	5		
	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	5		
	Methoxychlor	14	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	7		
	Rotenone	Exempt	0.75% D 5% powder	20-30 lb. 2½ lb. in S	do.	--		
	Toxaphene	7	10% D	30 lb.	do.	5		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
TOMATO, FIELD (con.)								
Hornworms	Cryolite	7 (fluorine)	50-90% D	20-30 lb. as D 12 lb. cryolite in S	On foliage.	5		HG 46, FB 2045
	TDE	7	10% D 50% WP 25% EC	20-30 lb. 4 lb. 1 gal.	do.	5		
	Toxaphene	7	10% D	30 lb.	do.	5		
Leaf miners	Parathion	1	2% D 25% WP 25% EC	20-30 lb. 2 lb. 1 qt.	do.	15	Restriction 2.	L 367
Spider mites	Aramite	1	3% D 15% WP	20-30 lb. 1½ lb.	do.	15		HG 46
	Malathion	8	5% D 25% WP 50% EC	20-30 lb. 6 lb. 1½ pt.	do.	3		
	Parathion	1	2% D 25% WP 25% EC	20-30 lb. 2 lb. 1 qt.	do.	15	Restriction 2.	
Stink bugs	DDT	7	5% D 50% WP 25% EC	20-30 lb. 3 lb. 3 pt.	do.	5		HG 46
	Sabadilla	Exempt	20% D	20-30 lb.	do.	--		
Tomato fruitworm, tomato pinworm, armyworms, and climbing cutworms	Cryolite	7 (fluorine)	B consisting of 1 lb. cryolite in 10 lb. cornmeal	60 lb.	Scatter evenly over foliage. Time as for dusts.	--	Cryolite bait effective against fruitworm only.	L 367
			50-90% D	30 lb. as D 15 lb. cryolite in S	To foliage when first fruits of main crop are setting; repeat in 2 and 4 weeks.	5		
	DDT	7	10% D 50% WP 25% EC	30 lb. 4 lb. 1 gal.	do.	5		
	TDE	7	10% D 50% WP 25% EC	30 lb. 4 lb. 1 gal.	do.	5		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
TOMATO, FIELD (con.)								
Tomato psyllid	DDT	7	5% D 50% WP	25-35 lb. 2 lb.	On foliage when plants are 6 in. high if psyllid is present in area; repeat in 10 and 20 days.	5		FB 2045
Tomato russet mite	Sulfur	Safe	20-50% D Wettable sulfur	30 lb. 10 lb.	On foliage.			L 367
TOMATO, GREENHOUSE								
Aphids	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 tsp./gal.	On foliage.	--	--	FB 2082
	Malathion	8	25% WP 50% EC	4 lb./100 gal. 1½ pt./100 gal.	do.	3	--	
			10% aerosol	1 lb./50,000 cu. ft.	In closed greenhouse in air above plants. Temperature should be 70-85°F. and ventilators closed for at least 2 hours.	3	Restriction 6.	
	Parathion	1	10% aerosol	do.		15	Restrictions 2 and 6.	
	Sulfotepp	0	5% aerosol	do.		15	do.	
	TEPP	0	5% aerosol	do.		3	do.	
Armyworms and cabbage looper	DDT	7	3% D 50% WP	20 lb. 2 tbsp./gal.	On foliage.	5	--	
	Malathion	8	10% aerosol	1 lb./50,000 cu. ft.	Same as for Aphids.	3	Restriction 6.	
	Parathion	1	10% aerosol	do.	do.	15	Restrictions 2 and 6.	
Cutworms (soil)	DDT	7	10% D	20 lb.	To soil surface.	5		
	Toxaphene	7	10% D	20 lb.	do.	5		
Garden centipede	Lindane	10	25% WP	5 oz./50 gal. per 1,000 sq. ft.	Spray on soil and water it in. For newly set plants, put 1 pint around base of each plant.		Do not use lindane for this purpose except in greenhouses.	
Greenhouse leaf tier	DDT	7	3% D	20 lb.	On foliage.	5		
			5% aerosol	1 lb./50,000 cu. ft.	Same as for Aphids.	5	Restriction 6.	
	Parathion	1	10% aerosol	do.	do.	15	Restrictions 2 and 6.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
TOMATO, GREENHOUSE (con.)								
Greenhouse whitefly	Malathion	8	. . . . . Same as for Aphids					FB 2082
	Parathion	1	do.					
	TEPP	0	do.					
Mealybugs	Nicotine sulfate	2 (nicotine)	do.					
	Malathion	8	do.					
	Parathion	1	do.					
	Sulfotepp	0	do.					
	TEPP	0	do.					
Spider mites	Malathion	8	do.					
	Parathion	1	do.					
	Sulfotepp	0	do.					
	TEPP	0	do.					
Thrips	DDT	7	5% aerosol	1 lb./50,000 cu. ft.	Same as for Aphids.	5	Restriction 6.	
			3% D	20 lb.	On foliage.	5	--	
			50% WP	2 tsp./gal.	do.			
	Malathion	8	. . . . . Same as for Aphids					
	Parathion	1	do.					
Tomato fruitworm and tomato pinworm	DDT	7	. . . . . Same as for Thrips					
	Parathion	1	. . . . . Same as for Aphids					
Tomato russet mite	Parathion	1	do.					
	Sulfur	Safe	25-50% D	20 lb.	On foliage.	--	--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Dosage (Formulation per acre unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
TURNIP								
Aphids	Malathion	8	5% D 25% WP 50% EC	20-35 lb. 6 lb. 1½ pt.	On foliage when first leaves appear; repeat every 7 days as long as needed.	7		HG 46
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	2 pt. in S	do.	--		
	Rotenone	Exempt	1% D 5% powder	20-35 lb. 4 lb./100 gal. S	do.	--		
Caterpillars	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage every week or 10 days. On summer or fall plantings in South apply for web-worm as soon as true leaves appear.		Restriction 1.	
	Rotenone	Exempt	1% D 5% powder	20-35 lb. 4 lb./100 gal. S			--	
Flea beetles	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.	--	Restriction 1.	
	Rotenone	Exempt	1% D 5% powder	20-35 lb. 4 lb./100 gal. S	do.	--	--	
	Methoxychlor	14	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	do.	7	--	
Root maggots	Chlordane	0.3	5% D 45% EC 50% WP	20 lb. 2½ pt. 2½ lb.	Dust or spray as soon as plants appear; repeat soon after thinning.		Restriction 4.	
Vegetable weevil	DDT	7	5% D 50% WP 25% EC	20-35 lb. 3 lb. 3 pt.	On foliage.	--	Restriction 1.	
	Rotenone	Exempt	1% D 5% powder	20-35 lb. 4 lb./100 gal. S	do.		--	
Wireworms	Chlordane	0.3	D, WP, or EC	4-8 lb. chlordane	To soil surface and work into top 6-9 in.		Apply either before planting or after harvest. DDT recommended only in irrigated lands in West.	FB 1866
	DDT	7	D, WP, or EC	10 lb. DDT				
	Ethylene dibromide	--	40% soln. (dilute 85% soln. with petroleum thinner 1:7 by vol.)	10 gal.	Inject 8 in. deep into fallow soil every 12 in.		Do not apply within 2 weeks before planting.	

The recommendations for fruit insects are general and may need to be modified to apply to particular regions of the country. Consult your State agricultural experiment station for more detailed recommendations applicable to your conditions.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE								
Aphids, apple and apple grain	DNOC	--	20% EC 40% WP	1½ pt. 1½ lb.	Dormant.	--	--	C 270
	BHC Lindane	5 10	10% gamma WP 25% WP	2 lb. 1 lb.	Pre-pink or pink. do.	-- --	-- --	
	Parathion	1	15% WP	1 lb.	When aphids become abundant.	14	--	
	Malathion	8	25% WP	2 lb.	do.	3	--	
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	3/4-1 pt. + hydrated lime 1 lb.	do.	3	--	
	Demeton	0.75	EC (2 lb./gal.)	½-1 pt.	do.	21	Do not make more than 2 applications after first cover.	
Aphid, rosy apple	DNOC	--	20% EC 40% WP	1½ pt. 1½ lb.	Dormant.	--	--	
	BHC	5	10% gamma WP	2 lb.	Pre-pink or pink.	--	--	
	Parathion	1	15% WP	1 lb.	do.	--	Do not use on McIntosh or related varieties.	
	Malathion	8	25% WP	2-2½ lb.	Pre-pink or pink or when aphids appear.	3	--	
	Demeton	0.75	EC (2 lb./gal.)	½-1 pt.	do.	21	Same as for other apple aphids.	
Aphid, woolly apple	BHC Lindane	5 10	10% gamma WP 25% WP	2 lb. 1 lb.	In first cover spray, if aphids are present.	--	Later application may impart off-flavor to fruit.	
	Malathion	8	25% WP	2-2½ lb.	When aphids appear.	3	--	
	Parathion	1	15% WP	1 lb.	do.	14	--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Apple flea weevil	DDT	7	50% WP	2 lb.	Pre-pink or pink.		On McIntosh or related varieties use DDT instead of parathion.	
	Parathion	1	15% WP	1 lb.	do.			
Apple lace bug	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	3/4 pt. + hydrated lime 1 lb.	When lace bugs are present.	3		C 270
Apple and thorn skeletonizer	DDT	7	50% WP	2 lb.	1-2 applications early in spring when young caterpillars appear.			
	Lead arsenate	7 (combined lead)	Powder	2 lb.	do.			
Apple maggot	DDT	7	50% WP	2 lb.	3 applications 10 days apart beginning when flies appear.	40		
	Lead arsenate	7 (combined lead)	Powder	3 lb. + hydrated lime 3 lb.	2-3 applications 10-14 days apart beginning when flies appear.	40		
	Lead arsenate + DDT	7 (combined lead) + 7	Powder + 50% WP	3 lb. + 2 lb.	2-3 applications 14 days apart beginning when flies appear.	40		
	Methoxychlor	14	50% WP	2 lb.	3-5 applications, as needed, 10 days apart beginning when flies appear.	14		
Apple red bug	DDT	7	50% WP	2 lb.	At petal fall.			
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1 pt.	do.			
Bagworm	Chlordane	0.3	50% WP	2 lb.	In May or June when young first appear.			
	Lead arsenate	7 (combined lead)	Powder	3-4 lb.	do.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Borer, roundheaded apple-tree	Lead arsenate	7 (combined lead)	Powder	3 lb.	About 3 weeks after petal fall and 2-3 weeks later.			L 274
	Dichloroethyl-ether	--	100%	--	In fall inject into borer tunnels; in spring examine trees and treat tunnels missed in fall.			
	Paradichloro-benzene + carbon disulfide	--	1:1 mixture	--	do.			
	Pyrethrum	Exempt	1.5-2.5% alcohol extract of pyrethrins	--	do.			
	Rotenone	Exempt	1.5% extract	--	do.			
Borer, shot-hole	DDT	7	50% WP	2 lb.	Two, when adults are active in May and in September.	40	Do not make fall application until crop is harvested.	C 270, FB 1861, L 274
	Parathion	1	15% WP	2 lb.		14		
Cankerworms, fall and spring	DDT	7	50% WP	1 lb.	Pink.			L 183
	Lead arsenate	7 (combined lead)	Powder	3 lb.	do.			
Codling moth	Pacific Northwest							
	DDT	7	50% WP	1-2 lb.	2-4 cover sprays, first about 3 weeks after calyx and others at about 3-week intervals.	40		C 270
	Methoxychlor	14	50% WP	3 lb.	do.	14		

Codling moth continued on page 63.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Codling moth (con.)	Other areas							
	DDT	7	50% WP	2 lb.	3 or 4 at 10-14 day intervals beginning about 10-14 days after calyx for first brood; 1-3 at 10-12 day intervals for second and third broods.	40	After 5 DDT sprays change to other than a chlorinated hydrocarbon insecticide for additional covers.	C 270
	DDT + parathion	7 + 1	50% WP + 15% WP	1½ lb. + ½-1 lb.		40		
	Parathion	1	15% WP	1½ lb.	do.	14	--	
	EPN	3	25% WP	1 lb.	3-4 at 10-12 day intervals beginning at petal fall for first brood; 1-3 at 10-14 day intervals for second and third broods.	15	Do not use on McIntosh and related varieties.	
	Lead arsenate	7 (combined lead)	Powder	3 lb.	do.	40	Use only to control light infestations or where it has been satisfactory. Change to another material to control second and third brood if fruit is not to be washed.	
	Ryania	Exempt	Powder	5-6 lb.	do.	7	Suggest for trial to control strains resistant to DDT or for late applications to avoid excessive residues of other materials at harvest.	
Climbing cutworms	DDT	7	10% D	Small handful	On trunk and at ground about base of tree when opening buds are attacked.			
Eye-spotted bud moth	Lead arsenate	7 (combined lead)	Powder	3 lb.	1 or 2 at 10-day interval at pink or when buds are pushing out.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Fall webworm	DDT	7	50% WP	2 lb.	Midsummer, when webs are first noticed.	40		C 270
	Lead arsenate	7 (combined lead)	Powder	2 lb.	do.	40		
Fruitworms	DDT	7	50% WP	2 lb.	Calyx or first cover.			
	Lead arsenate	7 (combined lead)	Powder	3 lb.	do.			
Grasshoppers	Chlordane	0.3	40% WP	2½ lb.	Spray orchard ground cover and fence rows with 100 gal./acre when hoppers become numerous.	15		
	Parathion	1	15% WP	2½ lb.		14		
	Toxaphene	7	60% EC	1/3 gal.		30		
Japanese beetle	DDT	7	50% WP 25% EC 5% D	2 lb. 2 qt. 30 lb./acre	When beetles appear; repeat 10-14 days later if infestation continues.	40	--	FB 2004, PS 4
	Methoxychlor	14	50% WP 25% EC	3 lb. 3 qt.	do.	14	--	
	Parathion	1	15% WP	2 lb.	do.	14	--	
	Rotenone	Exempt	4% powder	3 lb.	When beetles appear; repeat at 7-10 day intervals as long as infestation continues.	3	Do not use near ponds or streams containing fish.	
Leafhoppers	DDT	7	50% WP	1 lb.	1-2 when leafhoppers appear.	40	--	C 270
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	½-1 pt.	do.	3	Use with soap or hydrated lime.	
	Parathion	1	15% WP	1 lb.	do.	14	--	
Leafroller, fruit tree	DDT	7	50% WP	2 lb.	When buds begin to separate.			
	Lead arsenate	7 (combined lead)	Powder	4 lb.	do.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Leafroller, red-banded	Lead arsenate	7 (combined lead)	Powder	3 lb.	Calyx and first cover.	--	--	C 270
	Parathion	1	15% WP	1 lb.	Calyx and first cover and fifth or sixth cover.	14	Do not use on McIntosh or related varieties.	
	TDE	7	50% WP	1½ lb.	Calyx and fifth or sixth cover.	40	--	
Mite, clover	Mineral oil	Exempt	EC or emulsion	3% oil	Delayed dormant.	--		
	Aramite	1	15% WP	1½ lb.	When mites appear in numbers; repeat if infestation persists.	14		
	Malathion	8	25% WP	2-2½ lb.	do.	7		
	Sulphenone	8	50% WP	1½-2 lb.	do.	21		
Mite, European red	Mineral oil	Exempt	EC or emulsion	3% oil	Late dormant--delayed dormant.	--	--	
	Ovex	--	50% WP	¼ lb. ½ lb.	Pink, calyx. First cover.	--	--	
	Demeton	0.75	EC (2 lb./gal.)	½-1 pt.	Pink and later as needed; summer applications can be 21 days apart.	21	Limit to 2 applications after crop is present.	
	Aramite	1	15% WP	1½ lb.	In cover sprays.	14	--	
	Chlorobenzilate	5	25% WP	1¼-1½ lb.	do.	14 (tentative)	--	
	EPN	3	25% WP	½-3/4 lb.	In cover sprays; 2 applications 7-10 days apart.	15	Do not use on McIntosh or related varieties or if phosphorus-resistant strains of mites are present.	
	Parathion	1	15% WP	1 lb.	do.	14	do.	
	Malathion	8	25% WP	2-2½ lb.	do.	7	Do not use if phosphorus-resistant strains of mites are present.	
	TEPP	0	20% EC or 40% EC	½-2/3 pt. ¼-1/3 pt.	In cover sprays; 2-3 applications 7 days apart.	3	Do not use with lime.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Mites, two-spotted spider, four-spotted spider, McDaniel, Schoeni, and others	Aramite	1	15% WP	1½ lb.	In cover sprays when infestation threatens.	14	--	C 270
	Demeton	0.75	EC (2 lb./gal.)	½-1 pt.	do.	21	Limit to 2 applications after crop is set.	
	Chlorobenzilate	5	25% WP	1¼-1½ lb.	In cover sprays; 2 applications 7-10 days apart.	14 (tentative)	--	
	EPN	3	25% WP	½-3/4 lb.	In cover sprays when infestation starts, or at half strength in second, third, and fourth, or third, fourth, and fifth cover sprays to prevent or delay infestation.	15	Do not use on McIntosh or related varieties or if phosphorus-resistant strains are present.	
	Parathion	1	15% WP	1 lb.	do.	14	do.	
	Malathion	8	25% WP	2-2½ lb.	do.	7	Do not use if phosphorus-resistant strains are present.	
	TEPP	0	20% EC or 40% EC	½-2/3 pt. ¼-1/3 pt.	In cover sprays; 2-3 applications 7 days apart.	3	Do not use with lime.	
Mite, pear leaf blister	Lime sulfur	Safe	Liquid	8 gal. 32° Be. or equivalent to give 3½° Be. in dilute spray.	In fall when mites are migrating from leaves to buds or late in dormant season just as buds are swelling.			C 270, FB 1739
	Mineral oil	Exempt	EC or emulsion	3% oil	Just as buds are swelling.			
Periodical cicada	TEPP	0	40% EC	¼-½ pt.	Late May or early June when adults start emerging; repeat every 3-5 days as necessary.		Spray early in morning before cicadas become active.	L 340

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Plum curculio	Dieldrin	0.1	50% WP	½ lb.	1-3 every 7-10 days beginning at petal fall.		Do not use after first cover.	YB 1952
	EPN	3	25% WP	1½ lb.	do.		Do not use on McIntosh or related varieties; may russet Golden Delicious and other tender varieties.	
	Parathion	1	15% WP	1½-2 lb.	do.		do.	
	Lead arsenate	7 (combined lead)	Powder	3 lb. + hydrated lime 3 lb.	do.		--	
	Methoxychlor	14	50% WP	3 lb.	do.		--	
Scales, Forbes, Putnam, and San Jose	Mineral oil	Exempt	EC or emulsion	3% oil	Dormant or delayed dormant. If "Superior" oil is used, 2% is effective. In Pacific Northwest dormant application of 1% oil with 3% liquid lime sulfur is effective.	--		
	Malathion	8	25% WP	2-2½ lb.	3, when crawlers are present, about second, fifth, and sixth, or second, sixth, and seventh covers.	7		
	Parathion	1	15% WP	½-1 lb.	do.	14		
			25% WP	1 lb.	One in 2-week period prior to pre-pink of pears.	--	Applies to Pacific Northwest.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
APPLE (con.)								
Scales, oyster shell and scurfy	Mineral oil	Exempt	EC or emulsion	3-4% oil	Dormant.		4% oil in Pacific Northwest.	C 270
	DDT	7	50% WP	2 lb.	When eggs are hatching, usually calyx and first cover.		--	
	Parathion	1	15% WP	2 lb.	do.		Do not use on McIntosh or related varieties; may russet Golden Delicious and other tender varieties.	
Tent caterpillars Eastern	DDT	7	50% WP	2 lb.	When caterpillars appear in early spring.			L 161
Western	DDT	7	50% WP	2 lb.	Just before bloom.			C 270
Treehoppers	Mineral oil	Exempt	EC or emulsion	4% oil	Dormant.			
Yellow-necked caterpillar	Parathion	1	15% WP	½ lb.	When young appear, usually July and August.	14		
APRICOT	. . . . . Same as for Peaches						Do not use Aramite on apricots after fruit forms.	
BLUEBERRY								
Bud mite	Summer oil	Exempt	EC or emulsion	2% oil	2, in late August and late September.			
Blossom weevil	Dieldrin	--	25% WP	2 lb.	When leaf buds show green and 7-9 days later.			
	Parathion	1	15% WP 1% D	1½ lb. 25-35 lb./acre				
Blueberry maggot	Calcium arsenate	3.5 (As_2O_3)	50% D	6-7 lb./acre	2 at 10-day intervals, first 7-10 days after flies appear in numbers.	14	Use only on fruit to be processed, and remove residue before processing.	FB 1951
	Rotenone	Exempt	2% D	25 lb./acre	As above, but 3 or 4 applications.	3	--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
BLUEBERRY (con.)								
Cherry fruitworm, cranberry fruitworm, plum curculio, and sharp-nosed leafhopper	Methoxychlor	14	50% WP 5% D	3 lb. 25 lb./acre	When largest berries of earliest varieties are about ¼ in. in diameter and 7-10 days later.	14		FB 1951
	Parathion	1	15% WP 1% D	1½-2 lb. 25-35 lb./acre		14		
Cranberry rootworm	Chlordane	0.3	5% D	200 lb./acre 2 oz./plant	Disk in before planting. Work into soil within 2 ft. of plant.			
	DDT	7	5% D	500 lb./acre 6 oz./plant	Same as for chlordane. do.			
Scale insects	Lime sulfur	Exempt	Liquid	1 gal. in 9 gal. water	Dormant.			
CHERRY								
Black cherry aphid	DNOC	0	40% WP or 20% EC	1½ lb. 1½ qt.	Dormant.			C 270
	Malathion	8	25% WP	2 lb.	2 at 10-14 day intervals, first when aphids appear about time buds are breaking.			
	Nicotine	2 (nicotine)	40% nicotine soln.	3/4 pt.				
	Parathion	1	15% WP	1 lb.	do.			
	TEPP	0	40% EC or 20% EC	¼ pt. ½ pt.	do.			
Cherry fruitworm	Methoxychlor	14	50% WP	2 lb.	4 weeks after petal fall.	14		
Fruit flies, cherry and black cherry					Begin all treatments when first adults are trapped.			
	Lead arsenate	7 (combined lead)	Powder	2½-3 lb. + lime 3 lb.	2-3 applications at 10-14 day intervals.	14	Use only on fruit to be processed, and remove residue before processing. Reduce to 1 lb. in spray on English Morello variety.	C 270
		7	10% D	40 lb./acre	3-4 applications at 10-day intervals.	14		
	Malathion	8	25% WP	2 lb.	2-3 applications at 10-day intervals.	3	--	
	Methoxychlor	14	50% WP	2 lb.	do.	7	--	

Fruit flies continued on page 70.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CHERRY (con.)								
Fruit flies (con.)	Parathion	1	15% WP	1-2 lb.	2-3 applications at 10-day intervals.	14		C 270
	Parathion + methoxychlor	1 + 14	15% WP + 50% WP	1 lb. + 1 lb.	do.	14		
	Rotenone	Exempt	4-4.5% powder 0.75% D	2-3 lb. 40 lb./acre	2-4 applications at 7-10 day intervals.	3		
Pandemis moth	DDT + parathion	7 + 1	50% WP + 15% WP	2 lb. + ½ lb.	Just before bloom.			
Pear-slug	DDT	7	50% WP	2 lb.	1-2, first about 20 days after bloom.	30	--	C 270
	EPN	3	25% WP	1 lb.	do.	15	--	
	Lead arsenate	7 (combined lead)	Powder	2 lb. + lime 2 lb.	do.	30	Reduce to 1 lb. on English Morello variety.	
	Parathion	1	15% WP	1½ lb.	do.	14	--	
Pear thrips	DDT	7	50% WP 5% D	2 lb. 40 lb./acre	1-3, first just after buds show green as buds begin to show white and just after bloom.	30		
Plum curculio	EPN	3	25% WP	1-1½ lb.	2-3 at 8-10-day intervals beginning at petal fall or shuck split.	14	--	
	Methoxychlor	14	50% WP	2 lb.	do.	14	--	
	Parathion	1	15% WP	2 lb.	do.	14	--	
	Lead arsenate	7 (combined lead)	Powder	2-3 lb. + lime 2-3 lb.	Petal fall, shuck fall.	30	Reduce to 1 lb. on English Morello variety.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CHERRY (con.)								
Scales, San Jose and Forbes	Mineral oil	Exempt	EC or emulsion	3% oil	Dormant.	--	--	C 270
	Malathion	8	25% WP	2-2½ lb.	3 weeks before and immediately after harvest.	3	--	
	Parathion	1	25% WP	1 lb.	2 weeks prior to pre-pink of pears.	14	Applies to Pacific Northwest.	
			15% WP	½-1 lb.	3 weeks before and immediately after harvest.	14	--	
Shot-hole borer	DDT	7	50% WP	2 lb.	2, when adults are active in May and in September.	40	Do not make fall application until crop is harvested.	C 270, FB 1861, L 274
	Parathion	1	15% WP	2 lb.		14		
CITRUS	. . . . . Results of USDA research are made available to local groups issuing recommendations.							
CURRANT AND GOOSEBERRY								
Currant aphid	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1 pt.	As leaf buds are opening.			
Imported currant-worm	Lead arsenate	7 (combined lead)	Powder 10-15% D	2 lb. 20-25 lb./acre	Soon after leaves are out.	--	Do not apply when fruit is present.	
	Rotenone	Exempt	4-5% WP	3 lb.	When worms appear.	3	--	
San Jose scale	Lime sulfur	Safe	Liquid	1 gal. in 7-8 gal. water	Dormant.			FB 1676
	Mineral oil	Exempt	EC or emulsion	2% oil	do.			
GRAPE								
Climbing cutworms	DDT	7	50% WP	2 lb.	Just as buds are swelling.			FB 1893
			10% D	Small handful.	To lower part of vine and ground below as buds are swelling.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
GRAPE (con.)								
European fruit lecanium	EPN	3	25% WP	1 lb.	When eggs have just hatched and nymphs are migrating over vines, usually shortly after bloom.			
	Parathion	1	15% WP	1 lb.				
Grape berry moth	DDT	7	50% WP	1½ lb.	At petal fall, 7-14 days later, when second brood eggs are found (35-45 days after bloom), and 14 days later. (A sticker may be used according to manufacturers' directions in first 2 applications but not later.)	40	Do not use a sticker with DDT after grapes reach buckshot size.	FB 1893
	DDT + parathion	7 + 1	50% WP + 15% WP	1½ lb. + 1 lb.		40		
	EPN	3	25% WP	1 lb.		15	--	
	Methoxychlor	14	50% WP	2 lb.		14	--	
	Methoxychlor + parathion	14 + 1	50% WP + 15% WP	2 lb. + 1 lb.		14		
	Parathion	1	15% WP	1 lb.		14	Do not use bordeaux mixture with parathion.	
Grape flea beetle	DDT	7	50% WP	2 lb.	In early spring when buds begin to swell if adults appear, or when shoots are 6-8 in. long if larvae are present.	40		
Grape leaf folder	DDT	7	50% WP	1½ lb.	When adults or small larvae are observed; schedule for grape berry moth gives control.	40		
Grape leafhopper and rootworm	DDT	7	50% WP	1½ lb.	Same as petal fall and first-cover spray for grape berry moth.	40		
Grape mealybug	EPN	3	25% WP	1½ lb.	1 or 2 applications 7-10 days apart when overwintering nymphs move out from under bark to base of buds onto grape clusters (may be just before or after bloom).			
	Parathion	1	15% WP	1 lb.				

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
GRAPE (con.)								
Grape phylloxera (leaf form only)	Lindane	10	25% WP	2 lb.	When galls first appear on leaves, 2 applications 7-10 days apart.	60		
Grapevine aphid	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	1 pt. with soap or Bordeaux mixture	When aphids appear on shoots.	3		FB 1893
	Parathion	1	15% WP	1 lb.	do.	14		
Japanese beetle	. . . . . Same as for Apple							FB 2004
Leaf-eating caterpillars	Lead arsenate	7 (combined lead)	Powder	3 lb.	If regular program is not effective add to second, third, or fourth application.		No application later than 21 days after bloom.	FB 1893
Red-banded leaf roller	Lead arsenate	7 (combined lead)	Powder	3 lb.	Add to second (just before bloom) or third (petal fall) application.		do.	
	Parathion	1	15% WP	2 lb.		14	--	
Rose chafer	DDT	7	50% WP	2 lb.	When adults first appear (usually near time of bloom of Concord grapes).			
Two-spotted spider mite	Malathion	8	25% WP	2 lb.	When mites first appear on leaves, and 7 days later if infestation is heavy.	3		
	Parathion	1	15% WP	½-1 lb.				
MANGO								
Oriental fruit fly	Malathion	8	25% WP	3 lb./40-150 gal./acre + 1 lb. yeast protein or 2 lb./3-40 gal./acre + 1 lb. yeast protein	Every 2 weeks while flies are on fruit.	2		ARS-33-3
PASSION FRUIT								
Oriental fruit fly and melon fly	. . . . . Same as for Mango							

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEACH								
Aphids, green peach	Mineral oil	Exempt	EC or emulsion	4% oil	When buds are swelling.			FB 1676, 1861, C 270
Aphids, green peach, black cherry, black peach, rusty plum	Malathion	8	25% WP	2 lb.	Early in season when aphids appear.			
	Parathion	1	15% WP	1 lb.	do.			
	Nicotine sulfate	2 (nicotine)	40% nicotine soln.	3/4 pt.	do.			
Borer, American plum	EPN	3	25% WP	2 lb.	3-4 at 21-day intervals beginning in June.	15		
	Parathion	1	15% WP	3 lb.		14		
Borer, lesser peach tree	EPN	3	25% WP	2 lb.	4 to trunks and scaffold limbs at 21-day intervals, beginning with emergence in June. In Georgia 2 each for first (April and May) and second (August and September) broods.	15		FB 1861
	Parathion	1	15% WP	3 lb.		14		
Borer, peach tree	DDT	7	50% WP	6-8 lb.	In latitude of Virginia and northward, 2 to trunks (July 1-15 and about 3 or 4 weeks later); southward 3 (July 10-15 and after 3- or 4-week intervals); in south Georgia 4 at 4-week intervals, beginning August 1.	21	If harvest interferes with application, postpone until just after harvest is completed; avoid hitting fruit with spray.	
	EPN	3	25% WP	2 lb.		15		
	Parathion	1	15% WP	2-3 lb.		14		
	Ethylene dichloride	--	50% EC	1/8 pt. 7.5% emulsion for 1-year-old trees to ½ pt. 20% emulsion for trees 4 years and older.	To ground in ring around trunk in fall or during first warm spell in spring.	--	Do not use in heavy, damp soil.	
	Paradichlorobenzene	--	Crystals	¼-1½ oz./tree, depending on age and size.	To ground in ring around trunk in late August to early September in northern areas; to late October in more southern areas.	--	Keep crystals from touching trees.	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEACH (con.)								
Borer, peach twig	Lime sulfur	Safe	Liquid	3½° Be. or 1 part lime sulfur to 10 parts water	Before pink stage of blossom buds.		Do not use on apricots.	C 270, FB 1861
	Basic lead arsenate	7 (combined lead)	Powder	3 lb. or 4 lb.	Just before bloom. Petal fall.		--	
	DDT	7	50% WP	2 lb.	Petal fall.		--	
Borer, shot-hole	DDT	7	50% WP	2 lb.	When beetles are active, usually in late May or June and September.	28	Do not make more than 1 application within 6 weeks of harvest and make it at least 4 weeks before.	
	DDT + parathion	7 + 1	50% WP + 15% WP	1 lb. + 1½ lb.		28		
	Parathion	1	15% WP	2 lb.	do.	14	--	
Climbing cutworms	DDT	7	10% D		Small handful on lower trunk and surrounding ground soil in early spring when worms appear.			C 270
Earwigs	DDT	7	10% D		Thoroughly to trunk and surrounding soil about a month before fruit ripens.	28	Do not get dust on fruit.	
Grasshoppers	. . . . . Same as for Apple							
Japanese beetle	do.							
Leaf roller, red-banded, and *Platynota flavedana*	Parathion	1	15% WP	2 lb.	When leaf rollers become active, about July 1.	14		
	TDE	7	50% WP	1½ lb.		21		
Mites, European red and two-spotted spider	Mineral oil	Exempt	EC or emulsion	3% oil	Dormant.	--		FB 1676, C 270
	Aramite	1	15% WP	1½ lb.	In summer 1-2 applications 7-10 days apart.	14 (tentative)		
	EPN	3	25% WP	½-1 lb.	do.	15		
	Malathion	8	25% WP	2-2½ lb.	do.	7		
	Parathion	1	15% WP	1 lb.	do.	14		
	TEPP	0	40% EC 20% EC	1/3 pt. 2/3 pt.	do.	3		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEACH (con.)								
Oriental fruit moth	DDT	7	50% WP	2 lb.	Pacific Northwest. 2-3 applications--at petal fall, 12-14 days later, and, if infestation warrants, in June when moths appear in bait traps. Other areas. 3 applications at 10-day intervals beginning at shuck split or 2 applications 6-8 and 4 weeks before harvest.	28	-- If DDT is used against second and third broods, do not make more than 1 application within 6 weeks of harvest and make it at least 4 weeks before harvest.	C 270, FB 1861
	EPN	3	25% WP	1½ lb.	3 applications at 10-day intervals beginning at shuck split or 2 applications 6 and 2-3 weeks before harvest.	15	--	
	Parathion	1	15% WP	1½-2 lb.		14	--	
Pandemis moth	Parathion	1	25% WP	½ lb.	In early spring as soon as worms are found in trees.			C 270
Periodical cicada	TEPP	0	. . . . . Same as for Apple					L 340
Plum curculio	EPN	3	25% WP	1-1½ lb.	In southern areas at petal fall, 10 days later, 7-10 days later and 4-5 weeks and 2 weeks prior to harvest; in northern areas 3-4 applications 7-10 days apart beginning at shuck-off.	15	--	FB 1861
	Methoxychlor	14	50% WP	3 lb.		21	--	
	Parathion	1	15% WP	1½-2 lb.		14	--	
	Dieldrin	0.1	50% WP	½ lb.	Can be substituted for EPN or parathion in petal fall and first cover.	--	Do not use after first cover spray.	

Plum curculio continued on page 77.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEACH (con.)								
Plum curculio (con.)	Lead arsenate	7 (combined lead)	Powder	2 lb. + lime 8 lb.	In southern areas at petal fall, 10 days later, 7-10 days later, and 1 month before harvest; in northern areas 3 applications 7-10 days apart beginning at shuck-off.	30		FB 1861
	Cryolite	7 (fluorine)	Powder	4 lb.	2 applications 2 weeks apart after harvest if infestation is heavy.			
Scales, European fruit, lecanium, and terrapin	Mineral oil	Exempt	EC or emulsion	4% oil	Dormant.	--		FB 1676, 1861, C 270
	Malathion	8	25% WP 50% EC	2-2½ lb. 1 qt.	At completion of hatching, about last of June.	7		
	Parathion	1	15% WP	2 lb.	do.	14		
Scales, Forbes, San Jose, and white peach	. . . . . Same as for Apple							FB 1676, 1861, C 270
Stink bugs	Dieldrin	0.1	50% WP	½ lb.	At petal fall and first cover.		Do not use dieldrin after first cover.	FB 1861
	EPN	3	25% WP	1½ lb.	As for first-brood plum curculio.			
	Parathion	1	15% WP	2 lb.	do.			
Tarnished plant bug	DDT	7	50% WP	2 lb.	At petal fall and 8-10 days later.		--	
	Dieldrin	0.1	50% WP	½ lb.	do.		Do not use dieldrin after first cover.	
	EPN	3	25% WP	1-1½ lb.	do.		--	
	Parathion	1	15% WP	1½-2 lb.	do.		--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEAR								
Borers	Same as for Apple							
Climbing cutworms	do.							
Codling moth	DDT	7	50% WP	2 lb.	2-4 cover sprays beginning with first cover.	30		C 270, FB 1739
	EPN	3	25% WP	1 lb.	do.	15		
	Methoxychlor	14	50% WP	3 lb.	do.	14		
	Parathion	1	15% WP	1½ lb.	do.	14		
	Lead arsenate	7 (combined lead)	Powder	3 lb.	2-4 cover sprays beginning with calyx.	40		
Fruit-tree leaf roller	Same as for Apple							
Pear leaf blister mite	do.							
Pear leaf worm	Lead arsenate	7 (combined lead)	Powder	2 lb.	At petal fall.			C 270
Pear midge	DDT	7	50% WP	2 lb.	2 applications 7 days apart, first just before sepals separate on most advanced buds.			
Mites, clover, European red, two-spotted spider, McDaniel, and related species.	Same as for Apple							
Pear psylla	Mineral oil	Exempt	EC or emulsion	2% oil	Late dormant.	--		C 270, FB 1739
	Rotenone + summer oil	Exempt	5% WP + EC or emulsion	2 lb. + 2 qt.	In summer when psylla occurs in numbers.	3		
	EPN	3	25% WP	1 lb.	At petal fall and during summer when psylla appears in numbers.	15		
	Malathion	8	25% WP	2 lb.		7		
	Parathion	1	15% WP	1 lb.		14		

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PEAR (con.)								
Pear-slug	DDT	7	50% WP	2 lb.	About 2 weeks after bloom.			C 270, FB 1739
	EPN	3	25% WP	1 lb.	do.			
	Parathion	1	15% WP	1½ lb.	do.			
	Lead arsenate	7 (combined lead)	Powder	2 lb.	do.			
Pear thrips	DDT	7	50% WP 5% D	2 lb. Thorough coverage.	When about half of buds are in green-tip stage.			
Plum curculio	EPN	3	25% WP	1½ lb.	At petal fall and 10 days later.			
	Parathion	1	15% WP	2 lb.	do.			
	Lead arsenate	7 (combined lead)	Powder	3 lb.	do.			
Scales, Forbes, San Jose, and scurfy	. . . . . Same as for Apple							
Syneta leaf beetle	Lead arsenate	7 (combined lead)	Powder 30% D	3 lb. Thorough coverage.	Calyx and 10-14 days later if infestation is severe.			
	DDT	7	5% D	do.	do.			
Treehoppers	Mineral oil	Exempt	EC or emulsion	4% oil	Dormant.			
PINEAPPLE								
Mealybug and red scale	Parathion	1	15% WP 1% D	1 lb. 85-90 lb./acre	When infestation is found on 3 adjacent plants; check every 1-2 months.	35-40		Fla. Cir. S-36
Pineapple mite	Sulfur	Safe	D	85-90 lb./acre	When mites appear.			

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PLUM AND PRUNE								
Aphids, hop, mealy, plum, thistle, and green peach	Mineral oil	Exempt	EC or emulsion	4% oil	Dormant	--		C 270
	Nicotine	2 (nicotine)	40% nicotine soln.	3/4-1 pt. + lime	When aphids first appear.	3		
	Parathion	1	15% WP	1 lb.	do.	14		
	Malathion	8	25% WP	2 lb.	do.	3		
	Demeton	--	EC(2 lb./gal.)	½-1 pt.	do.	--	Use only on non-bearing trees or after harvest.	
Borers	. . . . . Same as for Peach							
Eye-spotted bud moth	Lead arsenate	7 (combined lead)	Powder	3 lb.	Just as tips of leaves are pushing out from buds; if infestation is serious, repeat in 7-10 days.			C 270

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CHESTNUT								
Weevils	DDT	--	50% WP	4 lb.	3 weekly, beginning about August 15.			L 384
	Ethylene dibromide	--	40% soln.	1 cc./sq. ft.	Inject to depth of 5 in. after larvae enter soil.			
Mites	Aramite	--	15% WP	2 lb.	When mites appear in numbers.			
	Malathion	--	25% WP	2 lb.	do.			
FILBERT								
Filbert worm	Lead arsenate	--	Powder	3 lb.	About middle of July and 3 weeks later.			C 270, L 384
	DDT	--	50% WP	2 lb.	do.			
PECAN								
Black pecan aphid	Nicotine sulfate +	--	40% nicotine soln. +	½ pt. +	When yellow spots appear on foliage.		--	FB 1829
	summer oil or	--	EC or emulsion or	2 qt. or				
	bordeaux mixture	--	tank mix	2-1-100 or as for Pecan scab				
	Parathion	--	15% WP	1 lb.	do.		--	
			1% D	Cover trees thoroughly			--	
			25% WP	4 lb./5 gal./acre			Apply by airplane.	
	TEPP	--	40% EC	1 pt./5 gal./acre	do.		do.	
Curculio	BHC (gamma)	--	10% gamma WP	4 lb.	When buds show 1/4-1 in. of green growth.			
	Lindane	--	25% WP	1½ lb.	do.			
Fall webworm	Lead arsenate	--	Powder	3 lb.	When webs become numerous and caterpillars are still small.		Use with 2-1-100 bordeaux mixture.	
	Calcium arsenate	--	Powder	3 lb.			do.	
	DDT	--	50% WP	2 lb.	do.		--	

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PECAN (con.)								
May beetle	Lead arsenate	--	Powder	4 lb.	In spring when beetles are first noticed.		Use with 2-1-100 bordeaux mixture.	FB 1829
	DDT	--	50% WP	2 lb.	do.		--	
	Parathion	--	15% WP	2 lb.	do.		--	
Mites	Parathion	--	15% WP	1 lb.	When mites appear in numbers and, if infestation is heavy, repeat in about 10 days.			
	Sulfur	Safe	WP	4 lb.	Add to parathion spray if species other than Tetranychus hicoriae are present.			
Obscure scale	Mineral oil	Exempt	EC or emulsion	2-3% oil	Dormant.			
Pecan leaf casebearer	DDT	--	50% WP	2 lb.	When buds begin to open or near end of July.		--	
	Parathion	--	15% WP	2 lb.	do.		--	
	Lead arsenate	--	Powder	3 lb.	do.		Use with 2-1-100 bordeaux mixture.	
Pecan nut casebearer	DDT	--	50% WP	2-3 lb.	1-2 applications 7 days apart, between about April 20 and May 15, or when tips of nuts turn brown.		--	
	Parathion	--	15% WP	2 lb.			--	
	Nicotine sulfate + summer oil	--	40% nicotine soln. + EC or emulsion	13 fl. oz. + 2 qt.			--	
	Lead arsenate	--	Powder	6 lb.	do.		Do not use in humid areas.	
Pecan phylloxera	Nicotine sulfate + lime sulfur or summer oil	-- Safe Exempt	40% nicotine soln. + 30-32° Be. or EC or emulsion	3/4 pt. + 2½ gal. or 2 qt.	Delayed dormant, or until buds show 1-2 in. of growth.			
	BHC (gamma)	--	10% gamma WP	2½ lb.	do.			
	Lindane	--	25% WP	1¼ lb.	do.			

Pecan phylloxera continued on page 83.

Crop and insect	Insecticide	Tolerance (p.p.m.)	Formulation	Formulation per 100 gal. of water unless otherwise indicated	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
PECAN (con.)								
Pecan phylloxera (con.)	Dinitrobutylphenol	--	36% EC	3 qt.	Late February until buds begin to swell.			FB 1829
	Dinitrocyclohexylphenol + mineral oil	-- Exempt	40% WP + EC or emulsion	2 lb. + 2%	do.			
Pecan weevil	DDT	--	50% WP	6 lb.	When at least 6 weevils can be jarred from any tree, and 10-14 days later.			
	Toxaphene	--	40% WP EC (8 lb./gal.)	6 lb. 2½ pt.				
Spittlebug	Parathion	--	15% WP	2 lb.	About time first leaves are half grown.			
	Nicotine sulfate + summer oil	-- Exempt	40% nicotine soln. + EC or emulsion	3/4 pt. + 3 qt.	do.			
Twig girdler	DDT	--	50% WP	4 lb.	3 at 2-week intervals when first injured branches are noted.			
	Parathion	--	15% WP	3 lb.				
Walnut caterpillar	. . . . . Same as for Fall webworm on pecan							
WALNUT								
Walnut aphid	Nicotine sulfate	--	40% nicotine soln.	½ pt. + soap or spreader	When aphids appear.			C 270
			2% D	Cover tree thoroughly.	do.			
Walnut caterpillar	. . . . . Same as for Fall webworm on pecan							

Insect	Insecticide	Tolerance (cotton-seed) (p.p.m.)	Formulation	Dosage (Pounds of insecticide per acre unless otherwise indicated)	Application (As needed unless otherwise indicated)	Restrictions: Min. days from last application to hand picking	Restrictions: Other	References
Boll weevil	Aldrin	--	EC or D	0.25-0.75	Every 3-5 days until controlled.	5		Conference Report on Cotton Insects
	BHC (gamma)	--	EC or D	0.30-0.45	do.	--		
	Calcium arsenate	--	D	7-10	do.	--		
	Chlordane	--	EC or D	1.0-1.5	do.	--		
	Chlorthion	--	EC or D	0.3-1.0	do.	--		
	Dieldrin	--	EC or D	0.15-0.50	do.	5		
	Endrin	0	EC or D	0.2-0.5	do.	5*		
	Heptachlor	0.1	EC or D	0.25-0.75	do.	5		
	Methyl parathion	--	EC or D	0.25-0.50	do.	15		
	Toxaphene	--	EC or D	2-3	do.	--		
Bollworm	Calcium arsenate	--	D	12-15	Every 5-7 days until controlled.	--		
	DDT	--	EC or D	0.5-1.5	do.	--		
	Endrin	0	EC or D	0.2-0.5	do.	5*		
	Toxaphene	--	EC or D	2-4	do.	--		
Cotton aphid	BHC (gamma)	--	EC or D	0.3-0.6		--		
	Chlorthion	--	EC or D	0.25-0.5		--		
	Demeton	--	EC	0.125-0.4		5		
	Malathion	--	EC or D	0.4-0.75		--		
	Methyl parathion	--	EC or D	0.25-0.50		15		
	Parathion	--	EC or D	0.1-0.25		5		
Cotton fleahopper	Aldrin	--	EC or D	0.2	2-4 weekly.	5		
	BHC (gamma)	--	EC or D	0.1	do.	--		
	Chlordane	--	EC or D	0.2	do.	--		
	DDT	--	EC or D	0.5	do.	--		
	Dieldrin	--	EC or D	0.1	do.	5		
	Endrin	0	EC or D	0.08-0.15	do.	5*		
	Heptachlor	0.1	EC or D	0.2	do.	5		
	Toxaphene	--	EC or D	0.75-1.0	do.	--		
Cotton leafworm	Calcium arsenate	--	D	7-10		--		
	Chlorthion	--	EC or D	0.25-0.5		--		
	Endrin	0	EC or D	0.2-0.5		5*		
	Malathion	--	EC or D	0.25-0.5		--		
	Methyl parathion	--	EC or D	0.25-0.5		15		
	Parathion	--	EC or D	0.125		5		
	Toxaphene	--	EC or D	1.5-2.0		--		
Cutworms	DDT**	--	EC or D	1-2		--		
	Dieldrin	--	EC or D	0.3-0.5		5		
	Endrin	0	EC or D	0.2-0.5		5*		
	Toxaphene	--	EC or D	2-4		--		

* Workers entering fields within 5 days after application should be protected.

** Does not control all species.

Insect	Insecticide	Tolerance (cotton-seed) (p.p.m.)	Formulation	Dosage (Pounds of insecticide per acre unless otherwise indicated)	Application (As needed unless otherwise indicated)	Restrictions: Min. days from last application to hand picking	Restrictions: Other	References
'all armyworm	Aldrin	--	EC or D	0.25-0.5		5		Conference Report on Cotton Insects
	BHC (gamma)	--	EC or D	0.4-0.6		--		
	Chlordane	--	EC or D	1.5-2.0		--		
	DDT	--	EC or D	0.5-1.0		--		
	Dieldrin	--	EC or D	0.2-0.3		5		
	Endrin	0	EC or D	0.2-0.3		5*		
	Toxaphene	--	EC or D	2.0-2.5		--		
ygus and other mirids	Aldrin	--	EC or D	0.25-0.75		5		
	BHC (gamma)	--	EC or D	0.30-0.45		--		
	Chlordane	--	EC or D	1.0-1.5		--		
	Chlorthion	--	EC or D	0.3-1.0		--		
	DDT	--	EC or D	1.0-1.5		--		
	Dieldrin	--	EC or D	0.15-0.50		5		
	Endrin	0	EC or D	0.2-0.5		5*		
	Heptachlor	0.1	EC or D	0.25-0.75		5		
	Toxaphene	--	EC or D	2-3		--		
Pink bollworm	DDT	--	EC or D	2-3	Every 7 days until insects are controlled or until harvest.			Also L 339
Grasshoppers	Aldrin	--	EC or D	0.10-0.25		5		
	BHC (gamma)	--	EC or D	0.3-0.5		--		
	Chlordane	--	EC or D	0.5-1.5		--		
	Dieldrin	--	EC or D	0.07-0.125		5		
	Endrin	0	EC or D	0.2-0.5		5*		
	Heptachlor	0.1	EC or D	0.25-0.50		5		
	Toxaphene	--	EC or D	1.0-2.5		--		
Spider mites	Aramite	--	EC or D	0.33-1.0		--		
	Chlorthion**	--	EC or D	0.25-0.50		--		
	Demeton	--	EC	0.125-0.4		5		
	Malathion**	--	EC or D	0.25-0.75		--		
	Methyl parathion**	--	EC or D	0.25-0.50		15		
	Parathion**	--	EC or D	0.1-0.4		5		
	Sulfur**	Safe	D	20-60		--		
Stink bugs	BHC (gamma)	--	EC or D	0.5		--		
	Dieldrin	--	EC or D	0.5		5		
	Heptachlor	0.1	EC or D	1		5		
	Toxaphene	--	EC or D	6		--		

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**Does not control all species.

Insect	Insecticide	Tolerance (cotton-seed) (p.p.m.)	Formulation	Dosage (Pounds of insecticide per acre unless otherwise indicated)	Application (As needed unless otherwise indicated)	Restrictions: Min. days from last application to hand picking	Restrictions: Other	References
Thrips	Aldrin	--	EC or D	0.08-0.15	1-4 at 7-day intervals early in season.	5		Conference Report on Cotton Insects
	BHC (gamma)	--	EC or D	0.1-0.2		--		
	Chlordane	--	EC or D	0.5-1.0	do.	--		
	Chlorthion	--	EC or D	0.375	do.	--		
	DDT	--	EC or D	0.25-1.50	do.	--		
	Dieldrin	--	EC or D	0.05-0.15	do.	5		
	Endrin	0	EC or D	0.08-0.15	do.	5*		
	Heptachlor	0.1	EC or D	0.08-0.15	do.	5		
	Toxaphene	--	EC or D	0.75-1.0	do.	--		
Beet armyworm	DDT	--	EC or D	1.0-1.5				
	Toxaphene	--	EC or D	2-4				
Cotton leaf perforator	DDT	--	EC or D	1.5-3.0		--		
	Endrin	0	EC or D	0.4-0.5		5*		
	Methyl parathion	--	EC or D	0.5		15		
	Parathion	--	EC or D	0.5		5		
False wireworms								
Adults on young plants	Aldrin	--	EC	0.5		5		
	Chlordane	--	5% D	20 lb. of dust		--		
	DDT	--	EC	1-2		--		
	Dieldrin	--	EC	0.25		5		
	Toxaphene	--	EC	1-2		--		
Larvae on seedlings	Aldrin	--	Slurry with suitable fungicide	2 oz./100 lb. seed		5		
	Dieldrin	--	do.	do.		5		
	Endrin	0	do.	do.		5*		
	Heptachlor	0.1	do.	do.		5		
	Lindane	--	do.	do.		--		
Field cricket	Aldrin	--	2.5% D	20-30 lb. of dust		5		
	Chlordane	--	5% D	20-25 lb. of dust		--		
	DDT	--	10% D	20-25 lb. of dust		--		
	Dieldrin	--	2.5% D	20-30 lb. of dust		5		
Garden webworm	DDT	--	EC or D	1		--		
	Dieldrin	--	EC or D	0.3		5		
	Endrin	0	EC or D	0.3		5*		
	Heptachlor	0.1	EC or D	0.4		5		
	Parathion	--	EC or D	0.15		5		
	Toxaphene	--	EC or D	3		--		

*Workers entering fields within 5 days after application should be protected.

Insect	Insecticide	Tolerance (cotton-seed) (p.p.m.)	Formulation	Dosage (Pounds of insecticide per acre unless otherwise indicated)	Application (As needed unless otherwise indicated)	Restrictions: Min. days from last application to hand picking	Restrictions: Other	References
White-fringed beetle	Aldrin	--	EC, WP, D, or G	Broadcast 3 lb. In drill row 3/4 lb.		5		Conference Report on Cotton Insects
	Chlordane	--	EC, WP, D, or G	Broadcast 5 lb. In drill row 1 lb.		--		
	DDT	--	EC, WP, D, or G	Broadcast 10 lb. In drill row 2 lb.		--		
	Dieldrin	--	EC, WP, D, or G	Broadcast 1½ lb. In drill row ½ lb.		5		
	Heptachlor	0.1	EC, WP, D, or G	Broadcast 3 lb. In drill row 3/4 lb.		5		
Whiteflies	Malathion	--	EC or D	0.25-0.75		--		
	Parathion	--	EC or D	0.125-0.5		5		
Yellow-striped armyworm	DDT	--	EC	1		--		
	Dieldrin	--	3% D EC	15 lb. of dust 0.30-0.45 lb.		5		
	EPN	0.5	EC	0.3		21		
	Toxaphene	--	EC 20% D	2-3 15 lb. of dust		--		
Brown cotton leafworm	Endrin	0	EC or D	0.33		5*		
	Malathion	--	EC or D	0.25		--		
	Parathion	--	EC or D	0.125		5		
Cabbage looper	Endrin	0	EC or D	0.4-0.5		5*		
Flea beetles	Aldrin	--	EC or D	0.25-0.5		5		
	Chlordane	--	EC or D	0.5		--		
	DDT	--	EC or D	1		--		
	Dieldrin	--	EC or D	0.25-0.33		5		
	Toxaphene	--	EC or D	2-3		--		
Greenhouse leaf tier	Endrin	0	EC or D	0.4		5*		
Potato leafhopper and Southern garden leafhopper	DDT	--	EC or D	1-1.5		--		
	Malathion	--	EC or D	0.75		--		
	Parathion	--	EC or D	0.25-0.5		5		
Leafrollers	DDT	--	EC or D	2-3		--		
	Parathion	--	EC or D	1		5		
Salt-marsh caterpillar	Endrin	0	EC	0.4-0.5		5*		
	Parathion	--	EC or D	0.5-1.0		5		
Serpentine leaf miner	Chlorthion	--	EC or D	0.25-0.5		--		
	Parathion	--	EC or D			5		

*Workers entering fields within 5 days after application should be protected.

Precautions.--In applying insecticides to livestock or around barns, do not contaminate feed, feed and water troughs, or allow runoff into streams. Observe all other precautions specified on the inside of the front cover.

Animal and insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Dilute material per animal unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CATTLE								
Beef or dairy								
Cattle grubs	Rotenone	--	5% D 5% D (7½ lb./ 100 gal. water)	3 oz. 2-4 qt.	Rub thoroughly on back. Wash or apply with power sprayer 1-3 times to backs every 30 days.			FB 1596
Horn flies	Methoxychlor	3 (in fat)	EC or WP, 0.5% S 50% WP 5% oil soln.	2 qt. 1 tbsp. 1 gal./20 ft. of cable	To backs at intervals of 3 weeks or more. do. Saturate back rubbers.			L 270, 283, 291, 338, 388
	Pyrethrins + synergist	--	0.05% + 0.5% S Oil soln. or EC, 1% + 10% S	1-2 qt. 1-2 oz.	As wet spray every 3-7 days. As mist spray daily, by hand or with treadle sprayer.			
Horse flies, stable flies, and mosquitoes	Pyrethrins + synergist, alone or with methoxychlor or organic thiocyanate		0.05-0.1% + 0.5-1.0% S Oil soln. or EC, 1% + 10% S	1-2 qt. 1-2 oz.	As wet spray every 2-3 days. As mist spray, same as for horse flies.			L 283, 338
Lice	Lindane	--	EC or WP, 0.025-0.05% 1% D	Amount of all insecticides will vary with size of animal and amount of hair.	Spray animals thoroughly. Dust animals thoroughly.		Do not exceed 0.03% concentration on calves less than 6 months old.	L 319, FB 909
	Methoxychlor	3 (in fat)	EC or WP, 0.5% (1-1.5% for tail louse) 10% D		Immerse or spray animals thoroughly. Dust animals thoroughly.			
	Pyrethrins + synergist	--	0.025% + 0.25% S		Spray animals thoroughly.			
	Rotenone	--	0.006% S 0.5-1% D		do. Dust animals thoroughly.			

Animal and insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Dilute material per animal unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CATTLE (con.)								
Beef or dairy (con.)								
Screw-worms	Diphenylamine	--	35% (Smear 62)	--	Brush or smear on wound and surrounding area, twice first week and weekly thereafter until healed.			E-813
	Lindane	--	3% (EQ-335)	Minimum amount necessary to treat wound. Do not use more than 3 tsp. on baby calves.				
Ticks	Arsenic (As_2O_3)	--	0.175-0.19% soln.	Amount of all these materials will vary with size of animals and amount of hair.	Immerse animals every 14 days.			FB 1057
	Lindane	--	EC or WP, 0.025-0.05%		As needed; immerse or spray animals thoroughly.		Do not exceed 0.03% concentration on calves less than 6 months old.	EC 10
	Pyrethrins + synergist		0.1% + 1% S		do.			
	Rotenone	--	5% D (12 oz./gal. water)		As needed; spray animals thoroughly.			
Spinose ear tick	Lindane	--	0.75% in xylene-pine oil	½ oz.	Inside ears with spring-bottom oiler.			FB 980
Beef								
Horn flies	DDT or TDE	--	EC or WP, 0.5% S* 50% D 5% oil soln.	2 qt. 1 tbsp. 1 gal./20 ft. of cable	Every 3 weeks. do. Saturate back rubbers.			L 270, 283, 291, 338, 388, E-880
	Toxaphene	--	EC or WP, 0.5% S 50% D	2 qt. 1 tbsp.	Every 3 weeks. do.			

*If higher concentrations are used, decrease the amount per animal proportionally.

Animal and insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Dilute material per animal unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
CATTLE (con.)								
Beef (con.)								
Lice	Lindane or BHC (gamma)	--	EC or WP, 0.03% S	Amount of all these materials will vary with size of animals and amount of hair.	Spray animals thoroughly; repeat after 2-3 weeks if needed.		Do not exceed 0.03% on calves less than 6 months old.	L 319, FB 909, E-880, EC-10
	Chlordane, TDE, or toxaphene	--	EC or WP, 0.5% S		do.		--	
	DDT	--	EC or WP, 0.25% dip, 0.5% S (1-1.5% S for tail louse)		Immerse or spray animals thoroughly; repeat after 2-3 weeks if necessary.		--	
			10% D		Cover animals thoroughly.		--	
Ticks	DDT	--	EC, 0.5%	Amount of all these materials will vary with size of animals and amount of hair.	Immerse or spray animals thoroughly; repeat as needed.		For spinose ear tick apply sprays at low pressure so as not to injure inner ear.	EC-10, E-880
	DDT + lindane or BHC (gamma)	--	EC or WP, 0.5% + 0.025%					
	Toxaphene	--	EC, 0.5%		do.		Do not overdose, especially on calves.	
SHEEP AND GOATS								
Fleeceworms	Lindane	--	3% (EQ 335)		Wet infested area and 3 in. around it.			E-813
Lice	Chlordane, DDT, TDE, or toxaphene	--	EC or WP, 0.25% dip, 0.5% S	Amount of all these materials will vary with size of animals and amount of hair.	Immerse or spray animals thoroughly; repeat after 2-3 weeks if necessary.		Do not use on milk goats.	L-308
	Lindane or BHC (gamma)	--	EC or WP, 0.025% dip, 0.05% S		do.		Do not use on emaciated or lactating animals.	
	Methoxychlor	--	EC or WP, 0.25% dip, 0.5% S		do.		--	
	Rotenone	--	0.006% S 0.5-1.0% D		do. Dust animals thoroughly; repeat after 2-3 weeks if necessary.		--	

Animal and insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Dilute material per animal unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
SHEEP AND GOATS (con.)								
Screw-worms	Diphenylamine	--	35% (Smear 62)		Brush or smear on wound and surrounding area, twice first week and weekly thereafter until healed.		Use minimum amount necessary to treat wound.	E-813
	Lindane	--	3% (EQ 335)					
Ticks and keds (sheep tick)	Lindane or BHC (gamma)	--	EC or WP, 0.25% dip, 0.05% S	Amount of all these materials will vary with size of animals and amount of hair.	Immerse or spray animals thoroughly; repeat as needed.		Do not use on emaciated or lactating animals.	EC-10, E-880, FB 2057
	DDT or toxaphene	--	EC or WP, 0.25% dip, 0.05% S		do.		Do not use on milk goats.	
	Pyrethrins + synergist	--	0.1% + 1.0%		do.		--	
	Rotenone	--	5% D (12 oz./gal. water)		do.		--	
SWINE								
Lice	Lindane or BHC (gamma)	--	EC or WP, 0.05-0.06% dip or S	Amount of all these materials will vary with size of animals and amount of hair.	Immerse or spray animals thoroughly; repeat after 2-3 weeks if necessary.			L 316, FB 1085
	Chlordane, DDT, TDE, or toxaphene	--	EC or WP, 0.5%		do.			
	Methoxychlor	3 (in fat)	EC or WP, 0.5%		--			
	DDT	--	10% D		Cover animals thoroughly.			
	Lindane or BHC (gamma)	--	1% D		do.			

Animal and insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Dilute material per animal unless otherwise indicated)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
POULTRY								
Lice	Lindane or BHC (gamma)	--	EC or WP, 0.5-1%		Spray or paint, covering house, roost, and nests thoroughly.		Do not apply on birds or while birds are in house.	L-366, FB-1652
	Nicotine sulfate	--	40% nicotine soln.	1 pt./150-200 ft. of roost	Paint on roosts only.		do.	
	Malathion	--	1% roost paint	1 pt./150 ft. of roost	Thorough coverage of house, roosts, and nests. Replace nesting material after spraying.		do.	
			4% D	1 lb./40 sq. ft. of litter				
	DDT	--	5-10% D	1 lb./100 birds	--		do.	
	Rotenone	--	1% D	do.	--		do.	
	Sodium fluoride	--	100% D 1 oz./gal. water	do.	Pinch method. Immerse birds.		do.	
	Sodium fluosilicate	--	do.	do.	do.		do.	
Mites	Lindane or BHC (gamma), nicotine sulfate, or malathion	. . . . . Same as for Lice					do.	L 383, FB 1652
	Sulfur	Safe	1-2 oz./gal. water 100% D	--	Immerse birds. Cover birds thoroughly.		do.	
Fowl tick	Lindane or BHC (gamma), chlordane, or toxaphene	--	0.5% S		Thorough coverage of houses, roosts, and nests.			L 382, FB 1652
	DDT	--	5% S		do.			

Insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Dilute material per 1000 sq. ft. for surfaces and per 1000 cu. ft. for space sprays)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
INFESTED AREAS								
House flies and stable flies								
In barns	Bayer L 13/59	--	1-2% dry B	1 oz.	Broadcast daily for 3 days; as needed thereafter.		Do not use in milk-rooms or contaminate animal feed or water.	L 390, EC-29
			0.1% liquid B	1 gal.	Sprinkle daily for 3 days; as needed thereafter.		do.	
	Diazinon	--	EC or WP, 1% S	1-2 gal.	Thorough coverage of resting surfaces.		do.	
	Lindane or BHC (gamma)	--	EC or WP, 0.3-0.5% S	1 gal.	do.		do.	
	Malathion	--	1-2% dry B	1 oz.	Broadcast daily for 3 days; as needed thereafter.		do.	
			EC or WP, 1% S	1-2 gal.	Thorough coverage of resting surfaces.		do.	
	Methoxychlor	--	EC or WP, 2.5-5.0% S	1-2 gal. 1-2 oz.	do. Space spray.		--	
	Pyrethrins + synergist	--	0.1-0.2% + 1-2% S	1-2 oz.	do.		--	
Outside barns	Chlordane	--	EC or WP, 2.0-2.5% S	1-2 gal.	Thorough coverage of exterior surfaces, vegetation, manure, and refuse.		Do not use in dairy barns.	L 182, 283, 338, 390
	DDT	--	EC or WP, 2-5%	½-2 gal.	Thorough coverage of resting places or space spray.			
	Toxaphene	--	EC or WP, 5%		Thorough coverage of resting places.			

Insect	Insecticide	Tolerance (p.p.m.)	Formulation and strength	Dosage (Insecticide per acre)	Application	Restrictions: Min. days from last application to harvest or feeding	Restrictions: Other	References
INFESTED AREAS (con.)								
Chiggers	Chlordane or toxaphene	--	EC or WP, 1% S 5% D	2 lb.	Spray or dust at 4-8 week intervals or as needed.		Keep birds out of treated area for at least 2 days.	L 302, 383, 403
	Lindane or BHC (gamma)	--	1% S or D	¼ lb.	do.		do.	
Ticks	Chlordane, dieldrin, or toxaphene	--	EC or WP, 1% S 5 or 10% D	1-4 lb.	1 or 2 annually.			L 387
	DDT	--	1% S 10% D	1-4 lb.	As needed.			
	Lindane or BHC (gamma)	--	EC or WP, 0.1% S 1% D	0.2-0.4 lb.	do.			
Ants	Aldrin, dieldrin, or chlordane	--	EC or WP, 0.25%	1-2 lb. 2-4 lb. (chlordane)	Thorough drenching of nests.			L 350
	Aldrin	--	2.5% D	1-2 lb.	Thorough coverage of soil around plants.			
	Dieldrin	--	1.5% D	1-2 lb.	do.			
	Chlordane	--	5% D	2-4 lb.	do.			

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Farmers' Bulletins

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FB 980. The Spinose Ear Tick. (1953)
FB 1057. Cattle-Fever Ticks and Methods of Eradication. (1940)
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FB 1596. Cattle Grubs or Heel Flies--With Suggestions for Their Control. (1949)
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FB 1651. The Corn Earworm As an Enemy of Field Corn in the Eastern States. (1953)
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FB 1676. Lubricating-Oil Sprays for Use on Dormant Fruit Trees. (1933)
FB 1739. Pear Growing in the Pacific Coast States. (1949)
FB 1798. Control of Common White Grubs in Cereal and Forage Crops. (1953)
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FB 1866. Wireworms and Their Control on Irrigated Lands. (1954)

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FB 1893. Control of Grape Diseases and Insects in Eastern United States. (1951)
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FB 1951. Blueberry Growing. (1951)
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FB 2034. Potato Growing in the Western States. (1951)
FB 2040. Control of Potato Insects. (1952)
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