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# Insecticide Suggestions To Control Greenhouse And Floriculture Pests In 1977

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# Insecticide Suggestions To Control Greenhouse And Floriculture Pests In 1977

Do not use after 1977

The major crops and their major pests are as follows:

African violets .....	Cyclamen mites, also spider mites, Pritchard mealybug, occasionally aphids
Azaleas .....	Spider mites, cyclamen mites, whiteflies, greenhouse thrips, leaf miner, leaf roller
Begonias .....	Cyclamen mite probably most serious, thrips
Cacti (succulent plants) .....	Mealybugs, scale insects
Camellias .....	Aphids, thrips, leaf miners, spider mites
Carnations .....	Aphids, thrips, spider mites
Chrysanthemums .....	Aphids, leaf miners ( <i>Phytomyza atricornis</i> )
Cyclamens .....	Cyclamen mite, spider mites, aphids
Foliage plants .....	Root aphids, foliar aphids, scale insects, mealybugs, spider mites, whiteflies
Geraniums .....	Aphids, whiteflies, plume moth ( <i>Platyptilia pica</i> )
Lilies .....	Aphids
Orchids .....	Orchid fly ( <i>Eurytoma orchidearum</i> ), slugs
Poinsettias .....	Mealybug, whitefly, spider mites, scale insects, root aphids
Roses .....	Spider mites, thrips, aphids, midge, leaf rollers
Snapdragons .....	Spider mites, aphids, cyclamen mite, whiteflies

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Ants	SPRAYS OR DUSTS diazinon	1 to 2 lb. 50% W.P.	Apply 1 lb. of dust or 1 gal. spray per 1,000 sq. ft. soil along walks. Do not apply to foliage.

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Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Aphids	AEROSOLS and VAPORS	(Be sure foliage is dry at time of treatment)	
	dichlorvos (Vapona)	6 oz. smoke generator for 10,000 cu. ft.; 1 oz. of 81% E.C. per 10,000 cu. ft. on steam pipes.	Can be used on cucumbers, tomatoes, and lettuce in greenhouses. Close greenhouse vents for 2 hours after treatment. Do not use on mum varieties Pink Champaign and Nightengale or on Shasta lily.
	rialed (Dibrom)	1 fl. oz. of 8 lb. E.C. per 10,000 cu. ft. on steam pipes.	Can be used on cucumbers and tomatoes in greenhouse. Close greenhouse vents for at least 2 hours after treatment. May injure rose varieties White Butterfly and Golden Rapture, Pink Champaign mums, Green Wandering Jew, Poinsettias, and Dutchman's Pipe.
	parathion	10% aerosol using 1 lb. per 50,000 cu. ft.	Causes leathery leaves on gardenias; not recommended on asters and white cyclamen. Can be used on vegetables in the greenhouse. For use by commercial growers only.
	sulfotepp (Dithio)	Smoke or 5% aerosol bomb using 1 lb. per 50,000 cu. ft.	
	nicotine	Smoke generator. Check label for amount to use and additional precautions.	Can be used on vegetables in the greenhouse. May damage tender plants or tender portions of plants. Do not use on mum varieties Iceberg and Albartross. For use by commercial growers only.
	SPRAYS		
	endosulfan (Thiodan)	1 lb. 50% W.P. or 1 qt. 24% E.C.	3% dusts may also be used. Can be used on tomatoes in the greenhouse. May injure chrysanthemum varieties Bonnafon Deluxe, Fred Shoemith, and White Knight; also some geranium varieties.
	malathion	2 lb. 25% W.P. or 1½ pt. 57% E.C.	Dosage doubled for scale insects. May injure some crassula, cucurbit, fern, petunia, orchid, sweet pea, saint paulia, violet, gloxinia, red carnation, and rose varieties. Phytotoxicity greatest with E.C. Dusts may also be applied. Do not use for green peach aphid. Can be used on vegetables in the greenhouse.

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Aphids (continued)	Enstar 5E	10 oz. of 65% E.C. when aphids first noted or 20 oz. for heavy populations.	Should be applied in pre-bloom stage. May injure bracts of some poinsettia varieties.
	pirimicarb (Pirimor)	4 to 8 oz. 50% W.P.	Approved on chrysanthemums. Do not apply more than 4 times.
	demeton (Systox)	1 to 1½ pints 25% E.C.	May injure Croft lilies. Also effective on foliar nematodes. For use by commercial growers only.
	oxydemetonmethyl (Meta-Systox-R)	1 to 1½ pints 25% E.C.	May injure mum varieties Hurricane, Iceberg, Whitetop, and Pennant; also Easter lilies.
	SOIL TREATMENT oxydemetonmethyl (Meta-Systox-R)	1½ pt. 25% E.C. Apply ½ cup of the mixture per 6-8 inch pot. Or use 1 tablespoon in 3 gal.; 3 gal. treats 100 6-inch pots.	Causes leaf scorch on Easter Lily; injury noted on mum varieties: Hurricane, Iceberg, Whitetop, and Pennant.
	aldicarb (Temik)	30-40 oz. Temik 10 G/ 1000 sq. ft. on soil surface.	Should give 6 weeks protection; approved on mums, Gerberas, roses, carnations, Easter lilies, and snapdragons. For use by commercial growers only.
	dimethoate (Cygon)	6 fl. oz. 30.5% E.C. diluted in enough water to treat 1,000 sq. ft. of bench.	For use on carnations.
demeton (Systox)	1 to 1½ pints 25% E.C. Apply 1 pint of the mixture per square ft. of bench or ¼ pint per 6-inch pot.	May injure African violets, Cibotium ferns, and Croft lilies. For use by commercial growers only.	
Caterpillars (corn borer, leaf rollers, loopers, army worms, etc.)	SPRAYS carbaryl (Sevin)	2 lb. of 50% W.P. or 1¼ lbs. of 80% sprayable.	Except for older stages of cabbage looper. May injure Boston Ivy and Maidenhair fern.
	methoxychlor	2 lb. of 50% W.P.	Preferred for sensitive foliage. Can be used on lettuce, cucumbers, tomatoes, and radishes in the greenhouse.
	trichlorfon (Dylox)	20 to 30 ounces 80% W.P. or 2 to 3 pints of 40.5% E.C.	Some injury to certain varieties of carnation, zinnia, and hydrangia.
	<i>Bacillus thuringiensis</i> (Dipel, Biotrol, Thuricide)	½ to 1 lb.	May take 2 to 3 days before mortality results. Can be used on vegetables in the greenhouse.

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Caterpillars (continued)	AEROSOLS and VAPORS naled (Dibrom)	1 fl. oz. of 8 lb. E.C. per 10,000 cu. ft. on steam pipes.	For use against leaf rollers. Can be used on cucumbers and tomatoes in greenhouse. Close greenhouse vents for at least 2 hours after treatment. May injure rose varieties White Butterfly and Golden Rapture, Pink Champaign mums, Green Wandering Jew, Poinsettias, and Dutchman's Pipe.
	dichlorvos (Vapona)	6 oz. smoke generator for 10,000 cu. ft.; 1 oz. of 81% E.C. per 10,000 cu. ft. on steam pipes.	Can be used on cucumbers, tomatoes, and lettuce in greenhouse. Close greenhouse vents for 2 hours after treatment. Do not use on mum varieties Pink Champaign and Nightengale or on Shasta lily.
Centipedes, symphylids	lindane	10 oz. of 25% W.P. per 1,000 sq. ft.	Work into soil. Steam sterilization is also advised.
Cutworms	carbaryl (Sevin)	2 lb. of 50% W.P. or 1¼ lb. 80% W.P. or 5% bait.	Apply to soil and base of plant. May injure Boston Ivy and Maiden-hair fern.
	trichlorfon (Dylox)	20 to 30 ounces 80% W.P. or 2 to 3 pints of 40.5% E.C.	Some injury to certain varieties of carnation, zinnia, and hydrangia. Apply to soil and base of plant.
Cyclamen mites	dicofol (Kelthane)	1½ lb. of 35% W.P. 1 pt. of 18.5% E.C.	Incompatible with sulfur. Make 2 or 3 applications at 2-week intervals. Use sanitation and isolation during clean-up period.
	endosulfan (Thiodan)	1 lb. 50% W.P. or 1 qt. 24% E.C.	Can be used on tomatoes in the greenhouse. May injure chrysanthemum varieties Bonnafon Deluxe, Fred Shoemith, and White Knight; also some geranium varieties. Make 2 or 3 applications at 2-week intervals. Use sanitation and isolation during clean-up period.
Fungus gnats	malathion	4% dust or 1½ to 2 pts. of 57% E.C.	(See under Aphids for malathion cautions) Malathion can be used on vegetables in the greenhouse. Drench soil for best larval control. Treat soil weekly until infestation is controlled. Surface dusting controls adults. Dichlorvos (Vapona) for aphids will also control fungus gnat adults. Can be used on cucumbers, tomatoes, and lettuce in the greenhouse.
	lindane	10 oz. of 25% W.P. per 1,000 sq. ft.	
Grasshoppers	carbaryl (Sevin)	2 lb. of 80% W.P.	May injure Boston Ivy and Maiden-hair fern.

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Grasshoppers (continued)	malathion	2 pt. of 57% E.C.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
Leafhoppers	carbaryl (Sevin)	2 lb. of 50% W.P. or 1¼ lbs. of 80% sprayable	May injure Boston Ivy and Maiden-hair fern.
Leaf miners	SPRAYS malathion	2 lb. 25% W.P. or 1½ pts. 57% E.C.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
	oxydemetonmethyl (Meta-Systox-R)	1½ pt. 25% E.C. Soil drench may be used as given under Aphids.	May injure mum varieties Hurricane, Iceberg, Whitetop, and Pennant; also Easter lilies.
	parathion	1 lb. of 25% W.P. 1 pt. 25% E.C.	Avoid excessive treatment of asters, gardenias, and white cyclamen. Can be used on vegetables in the greenhouse. For use by commercial growers only.
	trichlorfon (Dylox)	20 to 30 ounces 80% W.P. or 2 to 3 pints of 40.5% E.C.	Some injury to certain varieties of carnation, zinnia, and hydrangia.
	SOIL TREATMENT aldicarb (Temik)	30-40 oz. of Temik 10 G/1000 sq. ft. on soil surface (½ tsp./6" diam. pot)	For use by commercial growers only. Approved on mums and Gerberas.
Leaf rollers	As recommended for Caterpillars.		
Mealybugs	SPRAYS lindane	½ lb. of 25% W.P. or 1½ pints of 20% E.C.	
	malathion	3 lb. of 25% W.P. or 1½ pt. of 57% E.C.	See under Aphids for cautions. Do not use on Cacti. Can be used on vegetables in the greenhouse.
	parathion	1 lb. of 25% W.P.	Repeat in 3 to 4 weeks. For use by commercial growers only. Can be used on vegetables in the greenhouse. Avoid excessive treatment of asters, gardenias, and white cyclamen.
	demeton (Systox)	1 to 1½ pints 25% E.C.	May injure Croft lilies. Also effective on foliar nematodes. For use by commercial growers only.

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Mealybugs (continued)	VAPORS, AEROSOLS dichlorvos (Vapona)	6 oz. smoke generator for 10,000 cu. ft. 1 oz. of 81% E.C. per 10,000 cu. ft on steam pipes.	Can be used on cucumbers, tomatoes, and lettuce in the greenhouse.
	malathion	15% bomb using 1 lb. per 50,000 cu. ft.	Can be used on vegetables in the greenhouse.
	naled (Dibrom)	1 fl. oz. of 60% E.C. per 10,000 cu. ft. on steam pipes.	Can be used on cucumbers and tomatoes in the greenhouse.
	sulfotepp (Dithio)	15% bomb using 1 lb. per 50,000 cu. ft.	
	SOIL TREATMENT aldicarb (Temik)	30-40 oz. of Temik 10 G/1000 sq. ft. on soil surface (1/8 tsp./6" diam. pot).	For use by commercial growers only. Approved on Poinsettias.
Plant bugs	carbaryl (Sevin)	2 lb. of 50% W.P.	May injure Boston Ivy and Maiden-hair fern.
	trichlorfon (Dylox)	20 to 30 ounces 80% W.P. or 2 to 3 pints of 40.5% E.C.	Some injury to certain varieties of carnation, zinnia, and hydrangia.
Plume moth	carbaryl (Sevin)	2 lb. of 50% W.P. or 1 1/4 lbs. of 80% sprayable.	Principal geranium pest. Sprays preferable to aerosols, especially on older larvae. Vapona can be used on cucumbers, tomatoes, and lettuce in the greenhouse.
	dichlorvos (Vapona)	As recommended for Mealybugs.	
Roaches	diazinon	1 to 2 lb. 50% W.P.	Apply 1 lb. dust or 1 gal. of spray per 1000 sq. ft. soil along walks. Do not apply to foliage.
Scale insects	dichlorvos (Vapona) malathion parathion sulfotepp (Dithio) demetox (Systox)	Same as for Mealybugs.	3 or 4 applications, but repeat as necessary. Best control when crawlers are present.
Slugs, snails	Mesuroal metaldehyde, or proprietary baits containing metaldehyde	1 lb. of 2% bait per 1000 sq. ft. 2 oz. of 15% dust per 100 sq. ft. or 1 oz. 20% E.C. to cover 100 sq. ft.	Apply once every 2 weeks to soil, using fresh material.
Sowbugs (pillbugs)	malathion	4% dust or 1 1/2 to 2 pts. of 57% E.C.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
	lindane	1 lb. of 25% W.P.	

See under Aphids for cautions

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks	
Spider mites	SPRAYS			
	carbophenothion (Trithion)	1½-2 pints 45.9% E.C.	For use by commercial growers only. May injure Crassula, some ferns, and some roses. Use caution on tender plants.	
	dicofol (Kelthane)	1½ lbs. 35% W.P. or 1 pt. 18.5% E.C.	Incompatible with sulfur.	
	chlorobenzilate (Acaraben)	1 lb. of 25% W.P. or 1 pt. of 25% E.C.	Not as effective when sulfur is used. Use on roses, carnations, and mums.	
	malathion	1½ pt. 57% E.C.	May injure some crassula, cucurbit, fern, petunia, orchid, sweet pea, saint paulia, violet, gloxinia, red carnation, and rose varieties. Can be used on vegetables in the greenhouse. Some mite populations may be resistant to malathion.	
	oxythioquinox (Morestan)	½ to 1 lb. of 25% W.P.	Certain rose varieties damaged.	
	propargite (Omite)	½ to 1 lb. of 30% W.P.	May injure new growth on roses.	
	oxydemetonmethyl (Meta-Systox-R)	1½ pt. of 25% E.C. Soil drench may be used as given under Aphids.	May injure mum varieties Hurricane, Iceberg, Whitetop, and Pennant; also Easter lilies.	
	Pentac	½ lb. of 50% W.P.	May cause damage to chrysanthemum foliage.	
	Plictran	4-6 oz. of 50% W.P.	May cause damage to mum blossoms and poinsettia bracts.	
	tetradifon (Tedion)	½ lb. of 50% W.P. 1 qt. of 12.3% E.C.	Avoid treatment of White Butterfly and Cinderella roses. Other rose varieties may also be injured. Can be used on vegetables in the greenhouse.	
	demeton (Systox)	1 to 1½ pints 25% E.C.	May injure Croft lilies. Also effective on foliar nematodes. For use by commercial growers only.	
	AEROSOLS			
	dichlorvos (Vapona)	6 oz. for 10,000 cu. ft. or paint ] fl. oz. of 81% E.C. per 10,000 cu. ft. on steam pipes.	Malathion and parathion can be used on vegetables in the greenhouse. Dichlorvos (Vapona) can be used on cucumbers, tomatoes, and lettuce in the greenhouse. <span style="font-size: 2em; vertical-align: middle;">}</span> See under Aphids for cautions.	
malathion	15% bomb using 1 lb. for 50,000 cu. ft.			
parathion	10% aerosol using 1 lb. for 50,000 cu. ft.			



Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Spider mites (continued)	sulfotepp (Dithio)	5% aerosol using 1 lb. for 50,000 cu. ft.	
	VAPORS OR SMOKES naled (Dibrom)	Paint 1 fl. oz. of 60% E.C. per 10,000 cu. ft. on steam pipes.	Corrosive to metals. See under Aphids for cautions. Can be used on cucumbers and tomatoes in the greenhouse.
	sulfotepp (Dithio)	As directed on label.	
	tetradifon (Tedion)	Paint 10 oz. of 50% W.P. as slurry on steam pipes for 200,000 cu. ft.	Avoid treatment of White Butterfly and Cinderella roses. Other rose varieties may also be injured. Can be used on vegetables in the greenhouse.
	tetradifon 15% + sulfotepp 12.5%	Smoke generator 6 oz. for 10,000 cu. ft.	Check label for cautions.
	SOIL TREATMENT aldicarb (Temik)	30-40 oz. of Temik 10 G/1000 sq. ft. on soil surface (1/8 tsp./6" diam. pot).	Should control mites for 40-60 days. Approved on mums, Poinsettias, Gerberas, roses, carnations, orchids, and snapdragons. For use by commercial growers only.
	dimethoate (Cygon)	6 oz. of 30.5% E.C. in enough water to cover 1000 sq. ft. of bench.	Carnations only. Can also be used as a spray at 1 1/2 pints of 30.5% E.C. in 100 gallons water.
	demeton (Systox)	1 to 1 1/2 pints 25% E.C. Apply 1 pint of the mixture per square ft. of bench or 1/4 pint per 6-inch pot.	May injure African violets, cibotium ferns, and Croft lilies. For use by commercial growers only.
Spittle bugs	lindane	1/2 lb. of 25% W.P. or 1 1/2 pints of 20% E.C.	
Springtails	SOIL TREATMENT malathion	As recommended for fungus gnats.	Can be used on vegetables in the greenhouse.
Symphylids	lindane	10 oz. of 25% W.P. per 1,000 sq. ft.	Work into soil. Steam sterilization is also advised.
Thrips	SPRAYS malathion	1 1/2 pints 57% E.C.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
	dimethoate (Cygon)	1 1/2 pints 30.5% E.C.	Carnations only.

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Thrips (continued)	methoxychlor	2 lb. of 50% W.P.	Preferred for sensitive foliage. Can be used on lettuce, cucumbers, tomatoes, and radishes in the greenhouse.
	parathion	1 lb. of 25% W.P. or 1 pint 25% E.C.	Avoid excessive treatment of asters, gardenias, and white cyclamen. Can be used on vegetables in the greenhouse. For use by commercial growers only.
	AEROSOL and VAPORS malathion	15% bomb using 1 lb. for 50,000 cu. ft.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
	parathion dichlorvos (Vapona) sulfotepp (Dithio) tetradifon 15% + sulfotepp 12.5%	} As recommended for Spider mites.	Parathion can be used on vegetables in the greenhouse. Dichlorvos (Vapona) can be used on cucumbers, tomatoes, and lettuce in the greenhouse.
	SOIL TREATMENT aldicarb (Temik)		
	dimethoate (Cygon)	6 oz. of 30.5% E.C. in enough water to cover 1000 sq. ft. of bench.	Carnations only.
Whiteflies	SPRAYS endosulfan (Thiodan)	1 lb. 50% W.P. or 1 qt. 24% E.C.	Can be used on tomatoes in the greenhouse. 3% dust may also be used. May injure mum varieties Bonnafon Deluxe, Fred Shoemith, and White Knight; also some geranium varieties.
	malathion	1½ pints 57% E.C. or 2½ lbs. 25% W.P.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
	parathion	1 lb. 25% W.P. or 1 pint 25% E.C.	Avoid excessive treatment of asters, gardenias, and white cyclamen. Can be used on vegetables in the greenhouse. For use by commercial growers only.
	endosulfan plus malathion or parathion	1 lb. of 50% W.P. plus 2½ lb. of 25% W.P. or 1 lb. of 25% W.P.	

Pest	Pesticide	Dosage per 100 gal. spray unless otherwise stated	Remarks
Whiteflies (continued)	resmethrin	1 pint-1 qt. 24.3% E.C.	
	Enstar 5E	10 oz. of 65% E.C. when pest first noted or 20 oz. for heavy populations.	Should be applied in pre-bloom stage. May injure bracts of some poinsettia varieties.
	oxydemetonmethyl (Meta-Systox-R)	1½ pints 25% E.C.	May injure mum varieties Hurricane, Iceberg, Whitetop, and Pennant; also Easter lilies.
	demeton (Systox)	1 to 1½ pints 25% E.C.	May injure Croft lilies. Also effective on foliar nematodes. For use by commercial growers only.
VAPORS, AEROSOLS			
	dichlorvos (Vapona)	6 oz. for 10,000 cu. ft. or paint 1 fl. oz. of 81% E.C. per 10,000 cu. ft. on steam pipes.	Close greenhouse vents for 2 hours after application. See under Aphids for cautions. Can be used on cucumbers, tomatoes, and lettuce in the greenhouse.
	endosulfan (Thiodan)	1 lb. 10% aerosol per 50,000 cu. ft.	Check label for cautions. Can be used on tomatoes in the greenhouse.
	resmethrin	As directed on the label.	
	sulfotepp (Dithio)	5% bomb using 1 lb. per 50,000 cu. ft.	
	malathion	15% bomb using 1 lb. for 50,000 cu. ft.	See under Aphids for cautions. Can be used on vegetables in the greenhouse.
	naled (Dibrom)	Paint 1 fl. oz. of 60% E.C. per 10,000 cu. ft. on steam pipes.	Corrosive to metals. See under Aphids for cautions. Can be used on cucumbers and tomatoes in the greenhouse.
SOIL TREATMENT			
	aldicarb (Temik)	30-40 oz. Temik 10G/1000 sq. ft. soil surface (½ tsp./6" diam. pot)	For use by commercial growers only. Should control whiteflies for 3 to 4 weeks. Approved on mums, Poinsettias, and Gerbera.
	demeton (Systox)	1 to 1½ pints 25% E.C. Apply 1 pint of the mixture per square ft. of bench or ¼ pint per 6-inch pot.	May injure African violets, cibotium ferns, and Croft lilies. For use by commercial growers only.

## Resistance of Certain Aphids (particularly Green Peach Aphid) and Red Spider Mites

There is no easy way of minimizing the development of resistance except to minimize the use of chemicals. However, the following guidelines may be helpful:

- (1) Prevent introduction of new strains from other sources by careful inspection of the plants upon receipt; preferably isolate for a time. If an infestation is present, give a thorough treatment before permitting the plant to be mixed with the others.
- (2) Keep conditions as cool and unfavorable for the aphids and mites as possible without interfering with the growing conditions of the plants. Aphids do best at temperatures of 72-75°F. and a relative humidity of about 75%. Mites do best at temperatures of 75°F. and above and low relative humidity. Therefore, you can lower temperature for aphid and mite control and raise humidity for mite control.
- (3) Make each treatment thorough, but do not overtreat.
- (4) Alternate insecticides if resistance is suspected. Be sure to select the replacement from a *different chemical group*. Chemicals and their groups are given below:

Aphids: (1) Chlorinated hydrocarbons—endosulfan (Thiodan). (2) Organophosphates—demeton (Systox), dichlorvos (Vapona), dimethoate (Cygon), malathion, naled (Dibrom), oxydemetonmethyl (Meta-Systox-R), parathion, sulfotepp (Dithio). (3) Carbamate—aldicarb (Temik), pirimicarb (Pirimor). (4) Botanical—nicotine. (5) Insect growth regulator—Enstar 5E.

Spider Mites: (1) Chlorinated hydrocarbons—chlorobenzilate, dicofol (Kelthane), Pentac; (2) Organophosphates—carbophenothion (Trithion), demeton (Systox), dichlorvos (Vapona), dimethoate (Cygon), naled (Dibrom), oxydemetonmethyl (Meta-Systox-R), parathion, malathion, sulfotepp (Dithio). (3) Carbamate—aldicarb (Temik). (4) An organic carbonate—Morestan; (5) Sulfur compounds (not phosphates)—tetradifon (Tedion), Omite. (6) Organotin compound—Plictran.

### Toxicity and Hazard

The hazard from insecticides is not only dependent upon the toxicity of the chemical, but how it is used and what form of the insecticide might be contacted.

For human safety, when using aldicarb (Temik 10 G) use rubber gloves and a respirator when in an enclosure; never use treated plants for food or feed purposes; do not market potted plants within 4 weeks after treatment; wait 100 days before planting food crops in treated soil. Other chemicals also require special care. ALWAYS read the label for information on proper precautions to take.

The following table illustrates relative hazard differences due to the physical state (++++ = very hazardous, + = least hazardous.)

Physical State	Lungs	Hazard through skin	By Mouth
Droplets of:			
Emulsions	++	+++	+
Wettables or Flowables	++	++	+
Solutions	++	+++	+
Smokes	+++	+	+
Vapors (aerosols)	++++	+	+
Dusts	+++	++	+
Granules	+	++	++

The *highly toxic* (less than 5 gram or 1/6 oz. active ingredients for a man):

demeton (Systox)	carbophenothion (Trithion)	sulfotepp (Dithio)
parathion	aldicarb (Temik)	nicotine

The *moderately toxic*: (1/6 oz. to 2 oz. for a man)

lindane	dichlorvos (Vapona)
endosulfan (Thiodan)	diazinon (oral)
Mesurool	naled (Dibrom)
	oxydemetonmethyl (oral)
	(Meta-Systox-R)
	pirimicarb (Pirimor)

