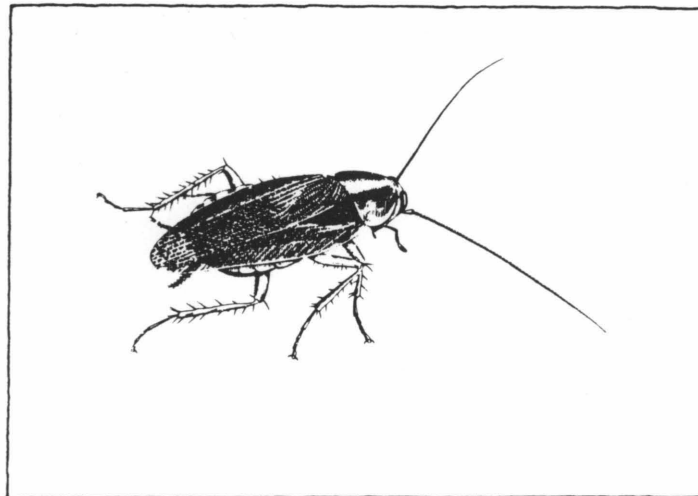


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Virginia Cooperative Extension Service

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1988-89
Insect Pest Management
for
RECREATION AND
HOUSEHOLD AREAS



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Produced by the Department of Entomology and the Department of Plant Pathology, Physiology and Weed Science, VA Tech. Coordinator: J. M. Luna, Department of Entomology

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Keys to the Proper Use of Pesticides

1. Read the label on each pesticide container before each use. Follow the printed instructions to the letter; heed all cautions and warnings; note precautions about residues.
2. Store pesticides in the containers in which you bought them. Put them where children and animals cannot get to them -- preferably locked-up and away from food, feed, seed and other materials that may become harmful if contaminated.
3. Dispose of empty pesticide containers in the manner specified on their labels.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES

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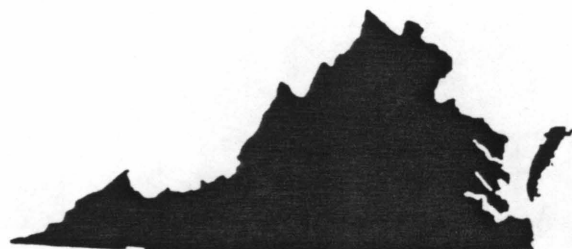
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Virginia Cooperative Extension Service

Publication 456-000

PEST MANAGEMENT GUIDES FOR VIRGINIA -- 1988-89



Contents:

- Introduction, Regulations and Basic Information for the Safe
and Effective Use of Agricultural Pesticides in Virginia -- Publication 456-001
- Pest Management Guide for Home Vegetable Gardens -- Publication 456-002
- Pest Management Guide for Home Fruit Production -- Publication 456-003
- Pest Management Guide for Home Ornamental Plants -- Publication 456-004
- Pest Management Guide for Commercial Small Fruit Production -- Publication 456-005
- Pest Management Guide for Commercial Grape Production -- Publication 456-006
- Pest Management Guide for Nursery Ornamentals -- Publication 456-007
- Pest Management Guide for Floral Crops -- Publication 456-008
- Pest Management Guide for Turfgrass -- Publication 456-009
- Insect Pest Management for Recreation and Household Areas -- Publication 456-010
- Pest Management Guide for Forest, Christmas Tree, Aquatic,
Right-of-way and Non-crop Areas -- Publication 456-011
- Insect Pest Management for Livestock, and Pets -- Publication 456-012
- Pest Management Guide for Peanuts -- Publication 456-013
- Pest Management Guide for Tobacco -- Publication 456-014
- Pest Management Guide for Field Crops -- Publication 456-015

Insect Pests of Recreation Areas

William H. Robinson, Extension Entomologist

Pests	Pesticide	Application and Remarks
OUTSIDE ANTS	chlorpyrifos DURSBAN 2 E DURSBAN 1/2 G	A general control program for ants is not recommended. If they are a serious pest, the nests should be located and treated. Place the spray or dust in the nest openings, then cover with dirt.
	----- diazinon SPECTRACIDE 2 EC SPECTRACIDE 2 G	
	----- bendiocarb FICAM W	
	----- propoxur BAYGON 13.5% EC	
	----- carbaryl SEVIN SL	

CHIGGERS	chlorpyrifos DURSBAN 2 E	Treat grassy areas, especially those not regularly mowed. Also, spray sites where pest is present. Mow areas around house. Spray every 4 to 8 weeks, as needed. Repellents will prevent attack, apply to socks and/or pants cuffs.
	----- diazinon 50 WP SPECTRACIDE 2 EC SPECTRACIDE 2 G	
	----- carbaryl SEVIN SL	
BLOOD FEEDING FLIES (Deer flies, adult mosquitoes, black flies)	chlorpyrifos DURSBAN 2E	<u>Indoors:</u> Use an aerosol spray into the air when flies are present. Dichlorvos resin strips give good control in tight, enclosed areas; however, dichlorvos resin strips must not be used in kitchens, restaurants, or areas where food is prepared, or served. Do not use these strips in nurseries, or rooms where infants, ill, or aged persons are confined. <u>Outdoors:</u> Spray garbage cans, compost piles, etc. Good sanitation and tight screens are sound preventive control measures. Use of the fly swatter is still practical. Do not contaminate food or utensils with insecticides.
	----- resmethrin 40% ULV Conc.	
	----- dichlorvos APONA 23% OS	
MOSQUITO LARVAE	chlorpyrifos DURSBAN 2 E DURSBAN 4 E	<u>Apply larvicides based on inspection of breeding sites and not on a routine basis.</u> Open bodies of water, such as large sloughs and streams, are not mosquito-breeding areas and should not be treated. Polluted water usually requires a higher rate of pesticide than required for clean water. Dursban is toxic to shrimp, crabs, and fish. Tossits are harmful to fish; keep out of lakes, ponds, and streams. Use methoprene in small bodies of water not known as fish habitats.
	----- temphos ABATE 43% EC ABATE GRANULES	
	----- malathion 57% EC	
	----- pyrethrins TOSSITS 1% CAPSULES	
	----- methoprene ALTOSID BRIQUETS ALTOSID SR 10 ALTOSID GRANULES	

Insects - Recreation Areas

Pests	Pesticide	Application and Remarks	
SPIDERS	propoxur	BAYGON 0.5% PRESSURIZED BAYGON 13.5% EC	Indoors: Aerosol sprays of dichlorvos will give good knockdown with some residual SPRAY control. Outdoors: Sprays or dusts of these pesticides applied around foundation will reduce home infestations. Practically all spiders in Virginia are harmless and for the most part beneficial to men. The only exceptions are the black widow and brown recluse spiders which are poisonous.
	diazinon	SPECTRACIDE 0.5% PRESSURIZED SPRAY SPECTRACIDE 2 EC	
	chlorpyrifos	DURSBAN 0.5% PRESSURIZED SPRAY DURSBAN 2 E DURSBAN 4E	
	bendiocarb	FICAM W FICAM PLUS	
	dichlorvos	VAPONA/DDVP 23% EC VAPONA 0.5% PRESSURIZED SPRAY	
TICKS (Outdoor areas)	chlorpyrifos	DURSBAN 2 EC DURSBAN 4E	Indoors: Use diazinon, dichlorvos aerosol chlorpyrifos. Outdoors (area control of ticks): Use diazinon and chlorpyrifos. Do not spray plants with propoxur or diazinon.
	bendiocarb	FICAM W	
	diazinon 50WP	SPECTRACIDE 25% EC SPECTRACIDE 2 G	
	carbaryl	SEVIN SL	
	WASPS AND HORNETS	dichlorvos	
BAYGON 13.5% EC BAYGON 0.5% PRESSURIZED SPRAY			For nests below ground, apply insecticide and close ground propoxur opening with a shovelful of dirt. Use the wettable powder formulation, or dusts to prevent damage to vegetation.
carbaryl		SEVIN SL	
carbaryl	OUTDOORS/INDOORS: SEVIN SL	bendiocarb	FICAM D

Wood-destroying Insects

William H. Robinson, Extension Entomologist

Control of wood-infesting insects is best accomplished by a professional pest control operator. The information below is intended to provide a homeowner with some control methods and materials, but not all the steps are included. There are several termite control chemicals available to professionals, but only chlordane is available to homeowners.

Pests	Pesticide	Application	Non-chemical Control and Remarks
Termites (Subterranean)	*Dursban TC *Torpedo *Dragnet *Pryfon *Tribute *Demon TC	Soil adjacent to the house foundation must be soaked with insecticide. Dig a "V"-shaped trench against the wall at least 1 foot deep to get good insecticidal penetration to the footing. Concrete floors, patio, walks, etc., should be drilled 12 inch intervals and the chemical injected under pressure. Be careful not to damage heat pipes, vapor barriers, etc., located under the slab. <u>In trenches:</u> 1 gal. of solution per 2 1/2 linear feet applied on each side of foundation and around piers. <u>Under concrete slabs:</u> 1 gal. solution per 10 sq. ft. of till surface.	<u>Termite control is usually a job for professional pest control operators</u> , since homeowners seldom have the training, experience, or equipment. The basic principle of termite control is to break the pest's contact between the wood and soil. Follow label instructions.
* Professional use only			
Powderpost beetles and Old house borer	Pentachlorophenol** 5% Lindane 0.5%**	Apply by spraying or brush directly to the wood surface. Wear protective clothing and respiratory equipment; avoid contact with the skin. Thoroughly cover the surface of the wood infested and adjacent, untreated wood. For best results apply in May or early June. The objective of this treatment is to kill adult beetles that emerge from the wood. The treatment may not kill larvae.	Controlling powderpost beetle and old house borer infestations is usually a job for a professional pest control operator. The basic principle is to apply an insecticide that will remain on the wood surface and kill the <u>adult</u> beetles when they emerge in the spring.

****Pentachlorophenol and Lindane:** Do not breath vapor or spray mist. No for use or storage in or around the home. Do not use indoors or any confined areas where the vapors may concentrate and cause injury to plant or animal life. Apply to wood after dilution to 5%.

Household Insect Pests

William H. Robinson, Extension Entomologist

Pests	Pesticide	Application	Non-chemical Control and Remarks
ANTS	Diazinon 4E, 1/2-1% ----- Aerosol sprays ----- *carbaryl (Sevin SL)	Indoors: Spray baseboards, cracks, door frames, and window sills. Outdoors: Spray in nest openings, around foundations, and other places frequented by ants.	Eliminate food materials attractin ants into home. Follow good sanitary practices. Do not treat entire walls or floors. Use on <u>limited areas only</u> .
BED BUGS	Aerosol sprays	Indoors: Spray slats, springs, and frames of bed thoroughly. Spray mattress lightly. (Do not overlook mattress tufts and seams.) Spray baseboards, wall cracks, wall pictures, bedside tables, etc.	Thorough cleaning will reduce populations, but probably not eliminate them. Allow all treated surfaces to dry at least 4 hours before use. Replace used bedding with clean, fresh bedding.
BOXELDER BUGS	Diazinon 4E, 1/2-1% ----- *carbaryl (Sevin SL) Aerosol sprays	Indoors: Spray individual insects when they appear. Outdoors: Spray individual or groups of insects under porches, steps, etc.	Collect in vacuum cleaner, or by broom and dust pan and destroy. Plug openings in window sashes to prevent entry. Caulk cracks, etc. Spray only in areas inaccessible to children and pets.
CARPET BEETLES	Naphthalene or paradichlorobenzene ----- Diazinon 4E, 1/2%	Indoors: Treat rugs and carpets including baseboards evenly and lightly in areas of infestations. Store only previously cleaned clothing, etc., air-tight closets or containers. Use 1 lb. of naphthalene or paradichlorobenzene balls, flakes, or crystals per 100 cu. ft. of space in these closets or containers.	Follow good housekeeping practices. Clothing should be thoroughly brushed and hung outside in the sunlight. Dry cleaning kills these pests. Clean hot air registers and cold air ducts. Use vacuum cleaner regularly. Frequently remove and destroy disposable vacuum cleaner bag. Never allow clothing, rugs, etc., to lie in a pile neglected over a period of time.
CLOTHES MOTHS	Naphthalene or paradichlorobenzene	Indoors: Store only previously cleaned clothing in air-tight closets and containers. Clothing may be protected by using a ready-to-use pressurized container or insecticide recommended for this purpose. Use crystals, balls, or flakes in garment bags and closets where clothes are kept. Replace periodically.	Follow good housekeeping practices. Clothing should be thoroughly brushed and hung outside in the sunlight. Dry cleaning kills these pests. Prevent lint and dust from accumulating. Clean hot air registers and cold air ducts. Use vacuum cleaner regularly. Frequently remove and destroy disposable vacuum cleaner bag. Never allow clothing, rugs, etc., to lie in a pile neglected.

Pests	Pesticide	Application	Non-chemical Control and Remarks
CLOVER MITES	Diazinon 4E, 1/2% *dicofol (Kelthane) 0.05% in water Aerosol sprays	<u>Indoors</u> : Direct spray onto mites in cracks and other areas where they hide. <u>Outdoors</u> : Prepare a 5 ft. wide strip of bare soil next to the house foundation. Treat with dicofol or diazinon applying to the bare soil as a barrier completely around the house. Spray house siding (usually up to the first floor window sills) and foundation in addition to soil.	A 5 ft. band of bare soil around the foundation will discourage mite infestation. Extra precaution should be made to prevent pets and children coming in contact with these pesticides when applied on bare soil as an outdoor-protective barrier. Avoid plant injury. Do not use oil formulation.
CLUSTER FLIES	dichlorvos (Vapona) 20% Pest Strip Diazinon 4E, 1/2% Aerosol sprays	<u>Indoors</u> : Hang dichlorvos resin strips in enclosed spaces such as attics. Do not use these strips in kitchens, restaurants, or areas where food is prepared or served. Do not use these strips in nurseries, or rooms where infants, ill, or aged are confined.	Keep insecticides out of the reach of children and pets.
COCKROACHES OR WATERBUGS	chlorpyrifos (Dursban) 0.5% in water Aerosol sprays diazinon 4E, 1/2-1% boric acid powder	<u>Indoors</u> : Apply behind baseboards, in basements, and in other out-of-sight areas. Treat areas where pipes go through walls of floors. Treat especially cockroach runways under sinks and floor cracks. <u>Outdoors</u> : Treat foundation walls and around garbage cans.	Use on limited areas only. Do not treat entire walls or floor. If cupboard shelves are treated, allow to dry, then cover them with clean, fresh shelf paper before replacing articles. Do not contaminate food, water, dishes, or utensils. Do not allow children or pets near treated surfaces until spray has dried.
CRICKETS	Diazinon 4E *carbaryl (Sevin SL) Aerosol sprays	<u>Indoors</u> : Use aerosol to knockdown and kill adults. <u>Outdoors</u> : Spray diazinon at windows, doorways, and other entry sites. Apply sprays or dusts to foundation walls, window wells, sub-floor crawl spaces, under garbage cans, at door thresholds, etc. Don't use oil formulation of diazinon on plants.	Crickets are most troublesome in dwellings located near grassy areas, dumps, or refuse areas. Eliminate these attractants. Also, crickets are attracted to lights.
FLOUR, GRAIN MITES	Aerosol sprays	<u>Indoors</u> : First thoroughly clean, then treat infested shelves. Cover shelves with clean, fresh shelf paper, or foil after spray dries.	Discard infested foods and keep "sound" food in tightly fitting lid containers. Do not contaminate food or utensil.
LONG-HORNED BEETLE	Aerosol sprays	<u>Indoors</u> : Usually individual beetles can simply be picked up with a vacuum cleaner and then the cleaner bag contents burned, or beetles can be collected with a broom and dust pan, crushed, and discarded.	These beetles frequently hitchhike into the home via firewood. It is wise to store firewood outdoors to prevent beetle emergence in the home.

Pests	Pesticide	Application	Non-chemical Control and Remarks
MILLIPEDES	Diazinon 4E, 1/2-1%	<p><u>Outdoors:</u> Spray all potential pest entry sites and areas where these pests are present. <u>Indoors:</u> Use aerosol sprays on individual millipedes.</p>	<p>Millipedes that stray into the home can be picked up with vacuum cleaner attachments and then the cleaner bag contents destroyed, or they can be collected with a broom and dust pan, crushed, and discarded. <u>Outdoors:</u> Remove excessive mulch, such as decaying grass, leaves, etc., from around the house foundation.</p>
MOSQUITOES	<p>Repellents for personal protection ----- Aerosol sprays</p>	<p><u>Indoors:</u> Use aerosol spray according to label directions. <u>Repellent:</u> Use Deet or ethyl hexanediol aerosol according to directions.</p>	<p>Maintain good, tight-fitting screens on windows and doors. Do not use dichlorvos strips in kitchens, restaurants, or areas where food is prepared, or served. Do not use these strips in nurseries, or rooms where infants, ill, or aged persons are confined. Remove, or frequently empty any containers from premises that may hold rainwater. Clean out clogged roof gutters holding stagnant water.</p>
<p>POWDERPOST, BEETLES AND OTHER WOOD- INFESTING BEETLES</p>	<p>pentachlorophenol ----- 5% prepared commercial solution ----- Lindane 1/2%</p>	<p>Spray, paint, or dip with pentachlorophenol prepared solution to saturate the wood. Do not apply to surfaces exposed to humans or pets.</p>	<p><u>Indoors and/or Outdoors:</u> Painted or otherwise finished wood surfaces generally resist reinfestation. Shut off all pilot lights and prohibit smoking to prevent possible explosion. Remove children and pets before and during application. Let treated areas dry before pets and children return. Pentachlorophenol is toxic to plants and irritating to mucous membranes.</p>
DRAIN FLIES OR MOTH	Aerosol sprays	<p><u>Indoors:</u> Use aerosol for adult fly control.</p>	<p>Sanitation is the best control measure. Clean gelatinous film from drains and sink; clean garbage containers regularly. Do not allow wet lint to accumulate under wash machines. Avoid moist debris of any nature, especially in the basement.</p>
SILVERFISH	<p>Diazinon 4E, 1/2% ----- Aerosol sprays</p>	<p>Apply spray to baseboards, door, and window casings, closets, and places where pipes go through walls. Apply into cracks and onto surfaces.</p>	<p>Keep books and papers in dry storage. Repeat treatment in 2 or 3 weeks, if needed.</p>

Pests	Pesticide	Application	Non-chemical Control and Remarks
FLIES	*chlorpyrifos (Dursban) 0.5% ----- *Diazinon 4E, 1/2% ----- dichlorvos (Vapona) 0.5% Aerosol or 20% Resin Strips	<u>Indoors:</u> Use an aerosol spray in the air when flies are present. Dichlorvos resin strips give good control in tight, enclosed areas; however, dichlorvos resin strips must not be used in kitchens, restaurants, or areas where food is prepared, or served. Do not use these strips in nurseries, or rooms where infants, ill, or the aged persons are confined. <u>Outdoors:</u> Spray garbage cans, compost piles, etc.	Good sanitation and tight screens are sound preventive control measures. Use of the fly swatter is still practical. Do not contaminate food or utensils with insecticides.
SOWBUGS	Diazinon 4E, 1/2-1% ----- carbaryl (Sevin), 2%WP ----- Aerosol sprays	<u>Indoors:</u> Use a spray along doorways, basement windows, and other places or entry. <u>Outdoors:</u> Use a spray around shrubbery, plants, foundation wall, window wells, and other entry areas.	Remove leaf piles, grass clippings, old boards, and excess ground cover. Caulk cracks around home foundations.
PANTRY AND STORED FOOD PESTS	Aerosol sprays	<u>Indoors:</u> Spray shelves lightly. Do not overspray. Spray only when shelves are empty and thoroughly cleaned. Force spray into cracks and crevices. When spray dries, cover shelves with clean, fresh paper or foil before placing packages or food in the cupboard.	Either destroy the infested products, or salvage them by superheating in an oven at 130 F for 1/2 hour, or supercooling by placing in a deep freeze at 0 F for 4 days. When treating, do not contaminate food or utensils, dishes, etc., with the insecticide. Store insect-free foods in containers with tight lids.
SPIDERS	Diazinon 4E, 1/2% ----- *carbaryl (Sevin SL) ----- Aerosol sprays	<u>Indoors:</u> Aerosol sprays will give good knockdown with some residual control.	Spiders can be successfully kept out of the house by careful screening, secure caulking, etc. Practically all spiders in Virginia are harmless and for the most part beneficial to man. The only exceptions are the poisonous. Dusts should not be applied where children or pets may come in contact with them.
TICKS	*carbaryl (Sevin SL) ----- Diazinon 4E, 1/2-1% ----- Repellents for personal protection ----- Aerosol sprays	<u>Indoors:</u> Spray along baseboards in rooms where pet frequents. <u>Outdoors:</u> Spray areas around house. Treat under dog houses.	Always consider the health of the animal before using any pesticide. The pet's sleeping quarters should be treated. Be sure to replace old bedding with clean, fresh, untreated bedding. Do not contaminate food or food utensils with insecticide.

Pests	Pesticide	Application	Non-chemical Control and Remarks
WASPS AND HORNETS	Aerosol sprays *carbaryl (Sevin SL)	<u>Outdoors/indoors:</u> Commercial hornet and wasp aerosol sprays are available. Apply carbaryl to nest at night. Remove nest when no activity is observed.	For nests below ground apply insecticide and close ground opening with a shovelful of dirt. Use a wettable powder formulation, or dusts to prevent damage to vegetation. Commercial hornet and wasp aerosol sprays are available.
FLEAS	*carbaryl (Sevin SL) Diazinon 4E, 1.2-1% dichlorvos (Vapona) 9.3% collar on dogs, 4.6% collar on cats Aerosol sprays	<u>Indoors:</u> Apply spray to floors, and baseboards in rooms where a flea infestation is apparent. if necessary, spray rugs and furniture lightly. Dust animal's sleeping quarters and replace old bedding with clean, fresh, untreated bedding. <u>Outdoors:</u> Treat infested areas of lawn, under dog houses (thoroughly clean the inside of dog houses regularly), under porches, if necessary.	Some cats and some dogs may show a skin sensitivity to the collar. <u>On Animal:</u> Use carbaryl, dust formulation on dogs, cats. <u>Carbaryl dust should not be used on cats under 4 weeks old.</u> Always consider the health of the animal before using any pesticides.
EARWIGS	carbaryl (Sevin SL) diazinon 4E, 1/2-1%	Apply when pets are present and use adequate amount of water to thoroughly wet area. Apply when pests are present and use adequate amount of water to thoroughly wet area	Remove excessive clutter around outside of house. items such as can lids, boards, and firewood provide harborage for earwigs.

*Outdoor use only.

