

**Extension Circular 144
Revised February 1957**

1957 Cranberry

Insect, Disease and Weed Control Program

**Extension Service
Institute of Agricultural Sciences
State College of Washington
Pullman, Washington**

Cranberry Insect and Disease Program

When to apply	Insect and/or disease controlled	Treatment per 100 gallons spray mixture		Remarks
		Insecticide per 100 gallons	Fungicide per 100 gallons	
When buds break dormancy ¹	Fireworm	DDT—2 pounds 50 per cent wettable powder or Parathion—1 pint or 1 pound 25 per cent wettable powder or Malathion—1½ pounds 25 per cent wettable powder or 1 pint 50 per cent emulsion	*Bordeaux mixture 8-8-100	Both DDT and parathion or DDT and malathion may be used in this spray especially if fireworms and lecanium scale are both present.
	Tipworm		or Ferbam 4 pounds	
	Cottonball		or Ziram 4 pounds	
			or Ferbam 4 pounds or Ziram 4 pounds	
In hook stage of blossom	Fireworm	DDT—2 pounds 50 per cent wettable powder or Parathion—1 pint or 1 pound 25 per cent wettable powder or Malathion—1½ pounds 25 per cent wettable powder or 1 pint 50 per cent emulsion	*Bordeaux mixture 8-8-100	Fungicides are important in this spray for controlling storage rots.
	Fruitworm		or Ferbam 2 pounds	
	Tipworm		or Ziram 2 pounds	
	Cottonball		or Ferbam 2 pounds or Ziram 2 pounds	
When 75 per cent to 80 per cent of blossoms have dropped.	Storage rots	Same as above	* Do not use Bordeaux mixture with parathion or malathion	Important in control of storage rots, and fruitworm.
	Fireworm		or Ferbam 2 pounds	
	Tipworm		or Ziram 2 pounds	
	Fruitworm		or Ferbam 2 pounds or Ziram 2 pounds	
When lecanium scale eggs have hatched and crawlers are feeding on under side of leaves; about August 1	Cottonball	Parathion 1 pint or 1 pound 25 per cent wettable powder or Malathion 1½ pounds 25 per cent wettable powder or 1 pint 50 per cent emulsion	* Do not use Bordeaux mixture with parathion or malathion	Fireworm sprays and twig blight sprays may be combined.
	Storage rots		or Malathion 1½ pounds 25 per cent wettable powder or 1 pint 50 per cent emulsion	

CRANBERRY TWIG BLIGHT

When to apply	Disease controlled	Treatment per 100 gallons spray mixture	Remarks
July 19 ²	Cranberry twig blight	Ferbam 2 pounds	(3) Captan at 2 pound per 100 gallons gives good control, but is not registered for use on cranberries. No residue tolerance has been established.
		or Wettable sulfur 6 pounds	
		or Manzate (maneb) 2 pounds	
		or Captan 2 pounds ³	
August 5		Same	
August 24		Same	

ROSEBLOOM and REDLEAF SPOT CONTROL

When to apply	Disease controlled	Treatment per 100 gallons spray mixture	Remarks
If red leaf spot or rose bloom become plentiful.	Rose bloom and red leaf spot	Bordeaux mixture 8-8-100 for application after berries are set. Ferbam—4 pounds Ziram—4 pounds	A strong Bordeaux mixture tends to dehydrate the young berries and vines. If red leaf spot and rose bloom occur late in the season use 8-8-100 Bordeaux mixture or ferbam or ziram (zerlate).

¹ Use spreader sticker with all sprays according to manufacturer's directions. See directions for mixing spreader-sticker.

² Dates are only approximate, more exact dates will be announced following spore trap collections.

³ Recommended if a tolerance is established or exemptions made.

Frost and Scald

Frost—Sprinkle for every frost period after April 1

Scald—Sprinkle whenever temperature reaches 80° F.

Mixing Spreader-Sticker

Read label and directions on the container.

After all other materials have been added to the spray tank, add the spreader-sticker a little at a time. Dip cranberry tip in spray mixture. If enough spreader has been added, the leaves will wet evenly and thoroughly on both sides. If not, the spray mixture will draw up in beads or drops. Because cranberries have a heavy waxy leaf, more spreader-sticker may be needed than is recommended by the manufacturer. Too much spreader-sticker will cause the spray to run off the leaves.

Bordeaux Mixture Formula

Fill spray tank about two-thirds full with water. Then add the amount of bluestone (copper sulfate) needed according to the formula. (For a 10-6-100, add 10 pounds of bluestone for each 100 gallons of water.) Instant bluestone should be poured slowly into the spray tank while the agitator is running. Crystalline bluestone must be dissolved in water first to form a stock solution. After the bluestone has been added, put in the hydrated lime. (Unslaked lime may be used, but it must be slaked before it is added to the spray tank.) Hydrated lime should be stirred into enough water to form a thin paste and strained through a 20-mesh screen to remove lumps. Then fill the spray tank with water and add sticker-spreader.

Do not use Bordeaux mixture with parathion or malathion.

For more instructions on making Bordeaux mixture see Extension Mimeograph 418, available at the County Extension office.

Residue Tolerances for Insecticides and Fungicides

An effort has been made in preparing these recommendations to suggest practices that will not result in excessive residue. Nevertheless, all tolerances are subject to change from time to time and unusual local condition may affect the persistence of residues. There-

fore, the State College of Washington and its employees, cannot be responsible for crops condemned for excessive residue even when these recommendations are followed.

Insecticides and fungicides	Parts per million	Deadline for last application before harvest—days
DDT	7	40
Malathion	8	3
Parathion	1	21
Zineb	7	21
Ferbam	7	21
Zerlate	7	21
Manzate	7	21
Ziram	7	21

Cranberry Weed Control Program

If there are only a few weeds, hand weeding is the best control method. Chemicals should be used where hand weeding is not practical.

WEED

TREATMENT

- Horsetail rush:*
(*Equisetum .sp*) Apply paint thinner or white diesel in late March or April when the horsetail shoots are a few inches long. To prevent cranberry bud injury, the oil should be sprayed on the ground not over the vines. Apply at the rate of 800 gallons per acre. Scattered plants may be treated throughout the season. For the best results, water table should be one foot below the surface at time of treatment. If temperature reaches 70°-75° F. sprinkle for heat control.
- Yellowweed:*
(*Loosestrife*)
(*Lysimachia terrestris L.*) Treat as for horsetail in early spring. Spot treating of individual plants may be carried on throughout the season.
- Sedges, rushes cut grasses, etc:* Apply paint thinner in spring before cranberry buds break, or spot treat with thinner throughout the season.
- Moss:* Apply Bordeaux mixture 10-6-100 in late April when moss shows some growth.

Health Hazards

The organic phosphorus insecticides such as parathion easily enter the body through contact with the skin, through the mouth and throat, and through breathing. Repeated exposures to these insecticides may, even without symptoms, increase susceptibility to poisoning.

The initial symptoms are giddiness, headaches, nausea, vomiting, excessive sweating, and tightness of the chest. These are followed by or accompanied with blurring of vision, diarrhea, excessive saliva, watering of the eyes, and twitching of muscles. One of the most

characteristic signs is constriction of the pupils but this may be preceded by dilation. Late signs are fluid in the chest, convulsion, respiratory failure, coma, and loss of urinary or bowel control.

What to Do for Poisoning

1. In severe cases of poisoning, breathing may stop. In such a situation artificial respiration is the most important first aid until breathing has resumed.
2. Get the patient to a hospital or physician as soon as possible. Give artificial respiration on the way if the patient turns blue or stops breathing. Take along the package label for the doctor's information.
3. Never try to give anything by mouth to an unconscious patient.
4. **INTERNAL**—If the insecticide has been swallowed and vomiting has not resulted, induce vomiting by giving a strong soap solution or a tablespoonful of salt dissolved in one-half a glassful of warm water.
5. **SKIN**—Where the insecticide has come into contact with the skin, immediately remove all clothing and bathe the patient with generous amounts of soap and water, rinsing thoroughly.
6. **EYES**—If spray gets into the eyes, wash them immediately with flowing water.
7. The patient should be made to lie down and kept warm.

Take These Precautions

CLOTHING—Wear protective waterproof clothing while spraying. Change or launder clothing and bathe daily.

MASK—Wear a respirator approved for the material in question by the U. S. Department of Agriculture.

GENERAL

1. Before using organic phosphorus insecticides, get in touch with your physician. He will be in a better position to deal with a sudden illness if he is told of probable spraying dates and other details. He may wish to have a supply of 1/100 gr. atropine tablets for use in an emergency. This drug should never be used before exposure to organic phosphorus insecticides, for it may hide important warning symptoms. Use one or two tablets only after definite symptoms occur. Never take atropine without calling your physician at once. Any person who is ill enough to receive a single dose of atropine should remain under medical observation for 24 hours, because the atropine may produce only a temporary relief of symptoms in what may prove to be a serious case of poisoning.
2. Do not eat, smoke, or chew while mixing or applying organic phosphorus insecticides.
3. Mix these insecticides according to directions and apply at the recommended rate.
4. Never measure nor leave mixtures of these insecticides in beverage bottles nor in labelled cans or boxes which have formerly contained food products.
5. Bury spilled insecticide and clean contaminated area with a weak lye solution.
6. Burn or bury empty insecticide bags or other containers.

This warning was prepared with the assistance of staff members of the Wenatchee, Washington field Station of the Communicable Disease Center, Public Health Service, U.S. Department of Health, Education and Welfare.

Farm Accidents Each Year . . .

- Kill about 15,000 people.
- Injure or cripple about 1¼ million more.
- Cause loss of 17 million man-days of farm labor, or the services of 46,000 men working every day for a year.

Help Prevent Accidents . . .

- Keep tractors and other farm machinery in good repair. Equipment in bad repair or carelessly handled ranks first in killing or injuring farm people.
- Handle farm animals carefully. They rank second in causing farm accidents and deaths.
- Use sharp-edged tools with caution—saws, axes, chisels, screwdrivers, knives.
- Take proper care in using, handling, and storing insecticides and other poisonous chemicals.
- Install, use, and repair electrical appliances and equipment properly.

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