

2008

MAINE

Cranberry Pest Management Guide



Insects



Weeds



Diseases



Pest Management Office
491 College Ave
Orono, ME 04473-1295

Additional information collected from:

- *Northeast US Cranberry Pesticide Charts*
- *Wisconsin Cranberry School Proceedings*
- *Cranberry Pest Management in Wisconsin (online)*
- *University of Wisconsin's 'Fruit Pathology' web pages*
- *UMass Cranberry Chart Book (2008)*
- *American Phytopathological Society*
- *Compendium of Blueberry and Cranberry Diseases*
- *The American Cranberry by Paul Eck*
- *Atlantic Cranberry Management Courses (2006 & 2008) (Canada)*



Available on the web at:

<http://www.umaine.edu/umext/cranberries/PestGuide.htm>

Now
with an
INDEX!!

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Supplemental Pages:

- ✓ UMass & UMCE Cranberry Publications Listings (with order forms)
- ✓ Maine Obsolete Pesticide Inventory Form
- ✓ Cranberry Pest Scouting Record / Template
- ✓ Cranberry Tipworm – Submission Form
- ✓ Answers to Common Nutrition Questions
- ✓ Index (page 62)
- ✓ Measures and Conversions Chart (back cover)

NEW

NEW

NOTICE: Pesticide registration status is subject to change and varies from state to state; therefore the author and the University of Maine Cooperative Extension cannot assume liability for recommendations. It is the responsibility of the applicator to verify the registration status of any pesticide BEFORE applying it. THE LABEL IS THE LAW: ALWAYS READ AND FOLLOW THE LABEL WHEN APPLYING PESTICIDES. Use of product names does not imply endorsement.

INTRODUCTION

By C. D. Armstrong, Cranberry Professional, University of Maine Cooperative Extension

Pesticides are a valuable tool for boosting production and improving crop quality, but they should be used only when they are absolutely needed. With few exceptions, pesticides should be used only when pests are present in economically-damaging numbers and other methods cannot effectively control them. In some cases, however, preventative use is a necessary, cost-effective means of protecting your cranberry crop. Preventative use should be exercised only when knowledge of the pest indicates it is necessary. It is also important that you be familiar with alternatives to the use of traditional pesticides--such as a variety of flooding practices, *B.t.* products (such as Dipel), sprayable pheromones, vinegar (for weed control), etc.

There are some new materials registered this year for cranberry use: Callisto® (herbicide) and *four* new insecticides, Avaunt®, Assail®, Hatchet® and Delegate®. The Maine Board of Pesticides Control (BPC) recommends, however, that you still check with your dealer for the registration status of any pesticide, and that you *always* check your label! You can also call and ask the Maine BPC (ask for Wes Smith) at: (207) 287-2731 or, if you like, visit them online at:

<http://www.maine.gov/agriculture/pesticides/>

Email: Wes.Smith@maine.gov








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Cover Photos by C. Armstrong. The insect depicted is a cranberry weevil; the flowering plant is chickweed, and the disease is Red Leaf Spot in its early stage.

CAUTIONS

Herbicides



	Product	Maximum allowable formulation	Pre-harvest interval (PHI) (days)	Restricted Entry Interval (REI)	Maximum number of applications per season
	Callisto (mesotrione)	16 oz	45 days	12 hrs	2 (14+ days apart)
	Casoron (dichlobenil)	100 lb	NA	12 hrs	NA
	Devrinol 10G [discontinued]	150 lb	NA	12 hrs	1
	Devrinol 50DF	8-12 lb (6 on a new bed)	NA	12 hrs	1
	Evital (norflurazon)	160 lb	NA	12 hrs	1
 (low)	Fusilade (fluazifop)	NA	1 year	12 hrs	NA
	Poast (sethoxydim)	5 pints	60 days	12 hrs	NA
	Princep (simazine)	4 qt	NA	12 hrs	1
	Reglone (diquat dibromide)	NA	1 year	when dry	NA
 low	Roundup, Rodeo (glyphosate)	NA	30 days	12 hrs	NA
 low	Roundup Weather MAX	NA	30 days	4 hrs	NA
 low	Select Max (clethodim)	64 oz	30 days	24 hrs	NA
	2,4-D granular	NA	NA	12 hrs	NA
	Stinger	16 oz	50 days	12 hrs	2



Fungicides



	Product	Maximum allowable formulation	Pre-harvest interval (PHI) (days)	Restricted Entry Interval (REI)	Maximum # of applications per season
	Chlorothalonils (Restricted Use)				
	Bravo Weather Stik	19.5 pints	50 days	12 hrs	3
	Echo 720	21 pints	50 days	12 hrs	3
	Equus 720 SST, Chlorothalonil 720	20 pints	50 days	12 hrs	3
	Bravo Ultrex	18 lb	50 days	12 hrs	3
	Echo 90DF	17.25 lb	50 days	12 hrs	3
	Equus DF	18 lb	50 days	12 hrs	3
	Coppers				
	Champ Formula 2 Flowable	26.6 pints	No PHI	24 hrs	5
	Kocide 4.5 LF	16 pints	No PHI	24 hrs	3
	3 lb Copper Flowable, Nu-Cop 3L	32 pints	No PHI	24 hrs	3
	Nu-Cop HB	12 lb	No PHI	24 hrs	3
	Top Cop with Sulfur	6 qt	No PHI	24 hrs	3
	Champion WP	40 lb	30 days	24 hrs	5
	Champ Dry Prill	28 lb	No PHI	24 hrs	5
 (salmon)	Cuprofix MZ Disperss ( to  for other fish)	47.3 lb	30 days	24 hrs	3
	Kocide DF, Kocide 101, Nu-Cop 50 DF	24 lb	No PHI	24 hrs	3
	Kocide 2000	18 lb	No PHI	24 hrs	3
	Mancozeb, Manebs				
	Manzate Flowable, Manex, Penncozeb 4 FL	14.4 qt	30 days	24 hrs	3
	Dithane F-45 RainShield	14.4 qt	30 days	24 hrs	3
	Dithane M-45, Dithane DF RainShield	18 lb	30 days	24 hrs	3
	Penncozeb 80 WP, Maneb 80 WP	18 lb	30 days	24 hrs	3
	Maneb 75DF, Penncozeb 75DF, Manzate 75DF	18 lb	30 days	24 hrs	3
	ManKocide	96 lb	30 days	24 hrs	3
	Other Products				
	Ferbam Granuflo	30 lb	50 days	24 hrs	5
	Ridomil Gold SL	5.25 pints	45 days	48 hrs	3
	Ridomil Gold GR	105 lb	45 days	48 hrs	3
	Abound F	93 oz	3 days	4 hrs	6
	Aliette WDG	20 lb	3 days	12 hrs	4
	Phostrol	24 pints	3 days	4 hrs	4
	Indar 75 WSP	16 oz	30 days	12 hrs	4
	Indar 2F	48 oz	30 days	12 hrs	4



Insecticides

Product	Maximum actual toxicant/A	Pre-harvest interval (PHI) (days)	Restricted Entry Interval (REI)	Maximum number of applications per season
Actara (Thiamethoxam) *	0.188 lb	30 days	12 hrs	(12 oz. total for season)
Admire, Alias (Imidacloprid)	0.5 lb	30 days	12 hrs	(0.5 lb ai/acre)
Assail (acetamiprid)	13.8 oz for 30G; 6 oz for 70 WP	1 day	12 hrs	2
Avaunt (Indoxacarb)	0.44 lb	30 days	12 hrs	2 or 4
B.t. based products	NA	No PHI	4 hrs	-
Confirm (Tebufenozide)	1 lb	30 days	4 hrs	4
Delegate (Spinetoram)	0.305 lb	21 days	4 hrs	6
Diazinon *	12 lb	7 days	5 days	3
Entrust (Spinosad)	0.45 lb	21 days	4 hrs	6
Imidan (Phosmet)	15.6 lbs	14 days	24 hrs / 3 days	-
Intrepid (Methoxyfenozide) *	1 lb	14 days	24 hrs / 3 days	4
Lorsban (Chlorpyrifos) *	1½ lbs	60 days	24 hrs	2
Nematodes (<i>parasitic worms</i>)	NA	No PHI	0 hrs	-
Nexter (<i>used for mites</i>)	1 lb	21 days	12 hrs	2
Orthene (Acephate)	1 lb	90 days	24 hrs	1
Pyrenone or Pyronyl	60% PBO + 6% Pyrethrins	No PHI	12 hrs	-
Sevin (Carbaryl)	4 lb	7 days	12 hrs	5
SpinTor (Spinosad)	0.45 lb	3 days	4 hrs	6

 Extremely toxic to fish
 Moderately toxic to fish

 Extremely toxic to bees
 Moderately toxic to bees

 Extremely toxic to birds
 Moderately toxic to birds

 Extremely toxic to people
 Moderately toxic to people

* = Restricted Use (requires a pesticide license to purchase or apply)

OTHER CAUTIONS:

- ◆ Pesticide-treated beds may need to be posted. Check labels. Workers and scouts should be notified prior to treatments, and informed about re-entry times.
- ◆ **READ AND FOLLOW LABEL INSTRUCTIONS.** Do not use a pesticide for control of a pest not listed on the label unless a specific recommendation is made by a person authorized to do so.
- ◆ Make all pesticide applications in a manner that prevents contamination of streams, ponds, and public ways, and impound water as long as possible after applications.
- ◆ Be aware of, and adhere to, guidelines regarding distances from the site of the chemical application to any protected areas. Consider the addition of drift retardants.
- ◆ Avoid insecticide applications during bloom to prevent bee killings. When it is unavoidable, make sprinkler applications at night and run sprinklers early the following morning to delay foraging and pollinating activity.
- ◆ Stored pesticides may deteriorate. Avoid freezing of liquid formulations. It is usually not advisable to use the held-over materials in opened containers. Follow regulations of the

Board of Pesticides Control when disposing of pesticides and their containers.

- ◆ CONCENTRATE SPRAYS may injure new growth, bloom, and small berries, particularly in hot and humid weather or if the emulsifiable concentrate (EC) content nears 50% of the mixture.

Time Needed for Certain Pesticides to be Rainfast

Confirm & Intrepid	6 hrs
SpinTor & Delegate	5 hrs
Poast	1 hour
Roundup	6 hrs
Roundup Ultra	1 to 2 hrs
Select Max	1 hour
Callisto	< 3 hrs

Recommended water-holding times:

(Check the label on the product you are using to verify information.)

- At least 1 day: Avaunt
- At least 3 days: Chlorothalonil products (*e.g.* Bravo), Nexter, & Diazinon.
- At least 5 days: Chlorpyrifos (*e.g.*, Lorsban) products.
- At least 14 days: Abound fungicide.

WARNING!!

PESTICIDES ARE POISONOUS. READ AND FOLLOW ALL DIRECTIONS AND SAFETY PRECAUTIONS ON LABELS. HANDLE CAREFULLY AND KEEP ORIGINAL LABELED CONTAINERS IN LOCKED STORAGE AREA. DO NOT CONTAMINATE FORAGE, STREAMS OR PONDS. DISPOSE OF EMPTY CONTAINERS IN A LEGAL MANNER.

Guthion and any Guthion formulations are prohibited on cranberry, including leftover stocks.

Repeated exposure to organophosphate insecticides (such as Diazinon, Imidan, and Lorsban) may, without symptoms, increase susceptibility to phosphate poisoning. Any pesticide-treated bed must not be entered until the restricted entry interval (REI) has elapsed (see the pesticide label). Workers should be notified prior to treatment. Tell family and co-workers. Make certain your doctor understands. After an accident, there may not be time.

IF SYMPTOMS OF ACUTE POISONING OCCUR, IMMEDIATELY TAKE VICTIM AND THE APPROPRIATE PESTICIDE LABEL OR CONTAINER TO THE NEAREST HOSPITAL EMERGENCY ROOM. FOR INFORMATION AND ADVICE AT ANY TIME, DAY OR NIGHT, CALL THE MAINE POISON CONTROL SYSTEM AT:

1-800-442-6305

REMINDER FOR RESPONSIBLE APPLICATORS

Remember that Lorsban, Sevin, Vapam, Abound, and products containing chlorothalonil are extremely toxic to fish and can cause fish kills. Diazinon is highly toxic to both fish *and* birds. For full labels and MSDSs visit www.cdms.net

To avoid contamination, do not clean equipment or dispose of wastes near open water. Drift, runoff or release of contaminated ditch water from treated areas may be hazardous to fish or other aquatic organisms in adjacent aquatic sites.

Following any pesticide application, hold water for as long as possible.

Granular insecticide formulations may cause bird kills, especially waterfowl that feed or drink on treated sites. Do not leave granules on bare ground where they could be eaten. Be sure granules fall into vines and are watered in by sprinkler irrigation. Drain away any puddles left behind, if possible.