

**Always read
the product
label!**



INSECT MANAGEMENT SNAPSHOT 2010

Adapted from Anne L. Averill's sections in the UMass Cranberry Chart Book

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PHI = pre-harvest interval
REI = restricted entry interval
♦ = Restricted use

PRACTICE / PRODUCT	RATE/A	NOTES
Actara♦	2 to 4 oz	Do not exceed 12 oz per season; low rate works well; beware bee toxicity.
Assail 30 SG	4 to 6.9 oz	Timing and coverage are critical, as target insects must ingest the material.
Avaunt	6 oz	For black-headed fireworm and spring-only cranberry weevils; Hold water 1 day.
NEW Belay (clothianidin)	4 oz	Post-bloom only! (neonicotinoid with high bee toxicity); Labeled for Cranberry Tipworm.
<i>Bt</i> (<i>Bacillus thuringiensis</i>) (examples: Dipel ES, Biobit, and XenTari)		Rate depends on the product; works only on caterpillars; allow time for control, as product must be consumed by larvae (so thorough coverage essential); best in low gallonage, against young larvae, in well-timed systems; Combination with other insect control products may control larger caterpillars.
Confirm 2F (growth regulator)	16 fl oz	For immature insects only; Products must be consumed by the larvae (thus, thorough coverage is essential). <i>Rimon has Tipworm on the label but it will not kill the flies (larvae only); It's non-toxic to adult bees & can be used up to 3x per season.</i>
NEW Rimon 0.83EC (growth regulator)	12 fl oz	
Intrepid 2F♦ (growth regulator)	10 to 16 oz	
Diazinon 50 W♦	4 to 6 lb	<i>For all diazinon formulations:</i> Highly toxic to birds & aquatic organisms; hold water for at least 3 days; 7-day PHI; 5 day REI; no more than 3 apps per season.
Diazinon AG500♦	4 to 6 pt	
Diazinon AG600♦	51 to 76.5 oz	

Floods

fall flood →
late-water flood →
10-hour flood →

Sept. 27th-Oct. 7th for 3 to 4 weeks (for cranberry fruitworm control).
April 21st-26th, hold for 30 days (for cranberry fruitworm control).
Late May for false armyworm and blossomworm; June 5th- 17th for some other cutworms, spanworms, small 1st-gen black-headed fireworm, and armyworms.

Imidan 70W	1.33 to 4 lbs	<i>Different formulation from what is used in Maine's wild blueberry industry.</i>
Lorsban 4E♦ & Advanced♦ Nufos 4E♦	3 pt	<i>Extremely toxic to fish;</i> Hold water at least 5 days; use only 2 times per season; rates of 2 pt (chemigation) give control; 60-day PHI and 24-hr REI;
Lorsban 75 WG	2 lbs	
Hatchet♦ Chlorpyrifos 4E AG♦	3 pt	
Nexter (3.5 to 7.0 oz) and Oberon (12 to 16 fl oz)		Miticides (for southern red mite); Nexter → 2 apps/season & success with low rates;
Orthene 97 Acephate 97UP	1 lb	Only one application per season; 90-day PHI; DO NOT apply from 10 days prior to bloom until completion of pollination due to bee toxicity; 24-hr REI.
Acephate 90S and 90 Prill	1.1 lb	
Orthene 75S and 75 WSP	1.33 lb	
Pyronyl or pyrenone	up to 12 oz	For spanworm control.
Sevin XLR Plus & 4F, Carbaryl 4L	1½ to 2 qt	Avoid application within 10 days of bloom onset; 7-day PHI; no more than five applications per season; 7-day application interval.
Sevin 80S (Solupak)	1.88 to 2.5 lb	
Delegate WG	3 to 6 oz	More active (and with greater residual) than SpinTor; Up to 6 apps per year.
SpinTor 2SC (spinosad)	6 to 10 fl oz	Do not exceed 19½ oz/season.
Entrust (spinosad)	1.25 to 3 oz	Organic approved; Do not exceed 9 oz/season.

For Delegate, SpinTor, and Entrust, efficacy is improved with shorter rinse times. Also, all 3 are highly toxic to bees until they dry!

armyworms (rare most years)

√ *Bt* √ Delegate WG √ SpinTor 2SC √ Entrust √ 10-hour flood anytime from about June 5th – 17th

Black-headed Fireworm & other fireworms

Bolded products are being touted as the best choices for management.

√ Assail 30 SG	√ Diazinon 50 W♦, AG500♦	√ Chlorpyrifos 4E AG♦	√ Sevin 80S
√ Avaunt	and AG600♦	√ Lorsban♦ 4E & 75 WG	√ Carbaryl 4L
√ Confirm 2F	√ Imidan 70W	√ Lorsban Advanced♦	√ Delegate WG
√ Intrepid 2F♦	√ Orthene 97, Acephate 97UP	√ Nufos 4E♦	√ SpinTor 2SC
√ Rimon 0.83 EC	√ Orthene 75S and 75 WSP	√ Hatchet♦	√ Entrust
	√ Acephate 90S and 90 Prill	√ Sevin XLR Plus or 4F	√ 10-hour flood

Cranberry Fruitworm

√ Assail 30 SG	√ Diazinon 50 W♦, AG500♦	√ Lorsban Advanced♦	√ Sevin 80S & 4F
√ Belay	and AG600♦	√ Nufos 4E♦	√ Sevin XLR Plus
√ Intrepid 2F♦	√ Imidan 70W	√ Chlorpyrifos 4E AG♦	√ Delegate WG
√ Rimon 0.83 EC	√ Lorsban 4E♦ & 75 WG♦	√ Hatchet♦ & √ Carbaryl 4L	√ fall flood & late-water flood

Bolded products are being touted as the best choices for management.

Cranberry Weevil

- ✓ **Belay** (summer applications only, i.e. post-bloom; very high bee toxicity)
- ✓ Lorsban 4E♦ or 75 WG♦ ✓ Hatchet♦
- ✓ Lorsban Advanced♦ & Nufos 4E♦ ✓ **Avaunt** (Registered for *spring* populations only—no summer applications)
- ✓ Chlorpyrifos 4E AG♦ ✓ **Actara**♦

cutworms & Humped Green Fruitworm

False armyworm and blossomworm are the cutworm members most often found on Maine cranberry beds.

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|---|-----------------------|-----------------------------|----------------------|
| ✓ <i>Bt</i> | ✓ Diazinon AG600♦ | ✓ Orthene 97, Acephate 97UP | ✓ Carbaryl 4L |
| ✓ Confirm 2F | ✓ Lorsban 4E♦ | ✓ Orthene 75S and 75 WSP | ✓ Delegate WG |
| ✓ Intrepid 2F ♦ | ✓ Lorsban 75 WG♦ | ✓ Acephate 90S & 90 Prill | ✓ SpinTor 2SC |
| ✓ Rimon 0.83 EC
(<i>blossomworm only</i>) | ✓ Lorsban Advanced♦ | ✓ Sevin XLR Plus | ✓ Entrust |
| ✓ Diazinon 50 W♦ | ✓ Nufos 4E♦ | ✓ Sevin 4F | ✓ 10-hour flood |
| ✓ Diazinon AG500♦ | ✓ Chlorpyrifos 4E AG♦ | ✓ Sevin 80S | |
| | ✓ Hatchet♦ | | |

Gypsy Moth caterpillars

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|------------------------|-----------------------------|---------------------------|--|
| ✓ Assail 30 SG | ✓ Rimon 0.83 EC | ✓ Sevin XLR Plus | Insecticides (Diazinon, Lorsban, Delegate, SpinTor) applied for cutworms or spanworms may provide control. |
| ✓ <i>Bt</i> | ✓ Orthene 97, Acephate 97UP | ✓ Sevin 80S and 4F | |
| ✓ Confirm 2F | ✓ Orthene 75S and 75 WSP | ✓ Carbaryl 4L | |
| ✓ Intrepid 2F ♦ | ✓ Acephate 90S & 90 Prill | | |

spanworms (inchworms)

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|------------------------|-----------------------|-----------------------------|----------------------|
| ✓ <i>Bt</i> | ✓ Lorsban 4E♦ | ✓ Hatchet♦ | ✓ Delegate WG |
| ✓ Confirm 2F | ✓ Lorsban 75 WG♦ | ✓ Orthene 97, Acephate 97UP | ✓ SpinTor 2SC |
| ✓ Intrepid 2F ♦ | ✓ Lorsban Advanced♦ | ✓ Orthene 75S and 75 WSP | ✓ Entrust |
| ✓ Rimon 0.83 EC | ✓ Nufos 4E♦ | ✓ Acephate 90S & 90 Prill | ✓ 10-hour flood |
| | ✓ Chlorpyrifos 4E AG♦ | ✓ Pyronyl or pyrenone | |

Sparganothis fruitworm

This pest is often controlled by virtue of control practices targeting other insect pests.

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|------------------------|------------------------|-----------------------------|---------------------------|
| ✓ Assail 30 SG | ✓ Rimon 0.83 EC | ✓ Nufos 4 E♦ | ✓ Acephate 90S & 90 Prill |
| ✓ Belay | ✓ Lorsban 4E♦ | ✓ Chlorpyrifos 4E AG♦ | ✓ Delegate WG |
| ✓ Confirm 2F | ✓ Lorsban 75 WG♦ | ✓ Hatchet♦ | ✓ SpinTor 2SC |
| ✓ Intrepid 2F ♦ | ✓ Lorsban Advanced♦ | ✓ Orthene 97, Acephate 97UP | ✓ Entrust |

Cranberry Tipworm

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|--|---|--|--|
| ✓ Belay (post-bloom only) | Assail appears to work well on tipworm larvae, but tipworm is still not listed on the Assail label. Fireworm, fruitworm, and gypsy moth are all on the label, however, and fireworm and tipworm both begin at the same point in the season (mid to late May), with gypsy moth caterpillars not far behind (first half of June). | | |
| ✓ Rimon 0.83EC | | | |
| ✓ Diazinon AG500♦ | | | |
| ✓ Diazinon AG600♦ ✓ Diazinon 5W♦ ✓ Diazinon 50 W♦ (max of 3 apps per season regardless of target pest) | | | |

Cranberry Girdler

This soil-dwelling (root-feeding) larva generally goes unnoticed unless a large area of brown, damaged vines is discovered, and larvae have not been noticed or detected (when checking) in Maine cranberries since at least 1996.

- ✓ FALL FLOOD: Sept. 27th-Oct. 7th and hold for six days, starting no later than Oct 2nd (Best if weather is cool & cloudy in order to help minimize potential damage to the vines)
- ✓ SANDING: (minimum of 1") suppresses populations by reducing habitat favorability, but eventually populations will likely rebound.
- ✓ NEMATODES (parasitic worms) (also will control black vine & strawberry root weevil – but rarely a problem in Maine)

leafhoppers

[Major outbreak of Blunt-nosed leafhoppers at one site in 2009.]

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|----------------|-------------------------|------------------------------|
| ✓ Assail 30 SG | ✓ Sevin XLR Plus | ✓ Sevin 80S (Solupak) |
| ✓ Actara♦ | ✓ Sevin 4F | |