

Always read the product label!

INSECT MANAGEMENT SNAPSHOT 2019

UMaine Extension (with help from the UMass Cranberry Chart Book)
Pest Management Office || 17 Godfrey Drive || Orono, ME 04473



Insecticide Group

↓	PRACTICE / PRODUCT	RATE/A	NOTES (PHI = pre-harvest interval; REI = restricted entry interval)
28	Altacor (chlorantraniliprole)	3 to 4.5 oz	Altacor: Good system required for efficacy; very long residual; <i>No acute mammalian toxicity; safe on bees!</i> 1-day PHI Exirel: Cannot use during bloom; 14-day PHI and 12-hour REI; beds must be drained of water 24 hrs prior, and for 24 hrs after app.
28	New Exirel (cyantraniliprole) → for fruitworm and fireworm	10-20.5 fl oz	
23	Movento (spirotetramat) for tipworm	8 to 10 fl oz	Systemic (new growth protected); post bloom only & no chemigation currently; 7-day PHI
4-A	Actara* (thiamethoxam)	2 to 4 oz	Max 12 oz/A/season; low rates effective; high bee toxicity so post bloom is preferred.
4-A	Assail Anarchy (30SG) (acetamiprid)	4 to 6.9 oz	Timing & coverage critical, as target insects must ingest the material; 2 apps max.
4-A	#Belay (clothianidin)	4 fl oz (12 fl oz for soil app)	Post bloom only! Very high bee toxicity; long soil half life.
4-A	#Scorpion* 3.5-7 fl oz #Venom* 2-4 fl oz (dinotefuran)		For flea beetles & leafhoppers; 'Suppression only' of tipworm, fireworm, fruitworm, weevil, & spanworms; Toxic to bees on direct exposure or to residue on blooming crops and weeds.
4-C	Closer SC (sulfoxaflor)	2.75 to 5.75 oz	Leafhoppers & scale; post bloom only; do not exceed 17 oz/A/year; extremely toxic to bees!
22	Avaunt (indoxacarb)	6 oz	Hold water 1 day.
11-B2	<i>Bt</i> (examples: Dipel, 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.	
18-A	Confirm 2F (tebufenozide)	16 fl oz	For immature insects only; Products must be eaten by the larvae (thus, thorough coverage is essential). Rimon kills tipworm larvae but <u>not</u> tipworm flies, as it must be ingested; Rimon is non-toxic to adult bees and can be used up to three times per season.
18-A	Intrepid 2F*, Turnstyle* (methoxyfenozide)	10-16 fl oz	
18-A	Troubadour 2F* (methoxyfenozide)	10-16 fl oz	
15	Rimon 0.83EC (novaluron: IGR chitin inhibitor)	12 fl oz	
15 + 4-A	Cormoran (novaluron and acetamiprid)	12 fl oz	(It's like combining Rimon & Assail together; so two modes of action in one)
1-B	Diazinon 50 W*	4 to 6 lb	<i>For all diazinon formulations:</i> Toxic to bees; highly toxic to birds & aquatic organisms; hold water for at least 3 days; 7-day PHI; 5 day REI; no more than three apps per season & 14-day spray interval except AG500 which is 7 days.
1-B	Diazinon AG500*	4 to 6 pt	
1-B	Diazinon AG600*	51 to 76.5 oz	
Floods		fall flood → late-water flood → spring flood (24 hours) → spring flood (48 hours) →	Sept. 27th-Oct. 7th for 3 to 4 weeks (for cranberry fruitworm control). April 21st-26th, hold 30 days (cranberry fruitworm, mites, gypsy moth & cutworms) Late May for cutworms (for example: false armyworm, blossomworm); Late May for 1st-gen BH fireworm (much higher mortality with low-oxygenated water)
1-B	#Imidan 70W (phosmet)	1.33 to 4 lbs	<i>For fireworm & fruitworm; Using water with pH of 6 to 7 can reduce efficacy;</i>
1-B	#Lorsban 4E* & Advanced* Nufos 4E*	3 pt	<i>Extremely toxic to fish; 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;</i>
1-B	Hatchet* Chlorpyrifos 4E AG*	3 pt	
1-B	Lorsban 75 WG	2 lbs	
21	Nexter (pyramite)	3.5 to 7.0 oz	Miticide (for southern red mite);
1-B	#Orthene 97 Acephate 97UP, 97WDG Acephate 90WSP and 90 WDG Acephate 90 Prill	1 lb 1.1 lb 1.1 lb	Only one app per season; 90-day PHI (but some 75); DO NOT apply from 10 days prior to bloom until completion of pollination due to bee toxicity; 24-hr REI.
3-A	Pyronyl crop spray* PyGanic* EC 1.4 5.0	See labels	Spanworms, gypsy moth, other various caterpillars (tussock, tent, woollybears)
1-A	#Sevin XLR Plus (carbaryl) Sevin 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.
5	Delegate WG (spinetoram) Entrust SC* (spinosad) (organic) Entrust 80W	3 to 6 oz 4 to 10 fl oz 1.25 to 3 oz	Up to 6 apps per year for both of these; Delegate better vs. Entrust (more active and greater residual); efficacy improved with shorter rinse times; highly toxic to bees until products are dry (3+ hours) so if in bloom, spray at night.

Blackheaded Fireworm (and often other fireworms)

✓ Altacor or Exirel	✓ Intrepid* Troubadour* Turnstyle*	✓ Lorsban* 4E & 75 WG	✓ Delegate WG
✓ Assail, Anarchy (suppression)	✓ Rimon 0.83 EC	✓ Lorsban Advanced*	✓ <i>Bt</i>
✓ #Scorpion* #Venom*	✓ Diazinon products*	✓ Nufos 4E*, Hatchet*	✓ Entrust*
✓ Belay (suppression)	✓ Confirm 2F	✓ Imidan 70W	✓ Pyronyl* / PyGanic*
✓ Cormoran	✓ Orthene / Acephate products	✓ #Sevin XLR Plus / 4F	✓ 10-hour flood (last resort)
✓ Avaunt	✓ Chlorpyrifos 4E AG*	✓ Carbaryl 4L	✓ Spring flood (48 hours)

Gypsy Moth caterpillars

✓ Avaunt	✓ Confirm 2F	✓ Orthene / Acephate products	NOTE: Altacor, Lorsban, or Delegate applied for cutworms or spanworms may also provide some gypsy moth control. <i>over</i> →
✓ Assail Anarchy	✓ <i>Bt</i>	✓ Carbaryl 4L	
✓ Intrepid*, Troubadour*	✓ Rimon 0.83 EC	✓ #Sevin XLR Plus / 4F	
✓ Turnstyle*	✓ Late-water flood		
	✓ Pyronyl* / PyGanic*		

Bolded products are likely the best (or better) choices for management (overall most favorable IPM outcomes or goals).
 # = possible handler restrictions; check with your handler before using! ♦ = Restricted use product (requires a pesticide license)

Cranberry Weevil **Reminder:** Action Threshold is **9** for the summer generation (late July) of weevils (per 25 sweeps).

- √ Belay at 4 oz/A (or 12 oz/A for soil application) (post bloom only; very high bee toxicity)
- √ Lorsban 4E♦ or 75 WG √ Hatchet♦ √ #Scorpion♦ or #Venom♦ (suppression only)
- √ Lorsban Advanced♦ & Nufos 4E♦ √ **Avaunt** (Registered for *spring* populations only—no summer applications)
- √ Chlorpyrifos 4E AG♦ √ **Actara**♦

cutworms *False armyworm & blossomworm are the cutworms most often found on our Maine beds.*

- √ **Delegate WG** √ Confirm 2F √ Hatchet♦, Nufos 4E♦ √ Entrust♦
- √ **Avaunt** √ Lorsban 4E♦ √ Orthene / Acephate √ 10-hr flood (last resort)
- √ **Intrepid 2F**♦ √ Lorsban 75 WG products √ *Bt*
- √ **Rimon 0.83 EC** √ Lorsban Advanced♦ √ #Sevin XLR Plus √ Late-Water flood
- (*blossomworm only*) √ Diazinon products♦ √ Sevin 4F √ Spring flood (24 hours)
- √ **Cormoran** √ Chlorpyrifos 4E AG♦ √ Carbaryl 4L

spanworms (inchworms)

- √ **Altacor** √ Lorsban 4E♦ √ **Avaunt** √ Assail || Anarchy
- √ Confirm 2F √ Lorsban 75 WG √ Orthene / Acephate √ *Bt*
- √ **Intrepid**♦, **Troubador**♦ √ Lorsban Advanced♦ products √ Entrust♦
- Turnstyle**♦ √ Nufos 4E♦, Hatchet♦ √ Sevin (winter moth larvae √ Pyronyl♦ / PyGanic♦
- but none found as yet) √ Chlorpyrifos 4E AG♦ √ 10-hour flood
- √ **Rimon 0.83 EC** √ #Scorpion♦ / #Venom♦ √ **Delegate WG**
- √ **Cormoran**

Cranberry Tipworm

- √ **Movento** (*post-bloom only*)
- √ #Belay (*post-bloom only; suppression only at the lower 4 oz/A rate*)
- √ Rimon 0.83EC
- √ Assail 30 SG || Anarchy 30 SG
- √ **Cormoran** (contains the ai of Rimon plus Assail)
- √ #Scorpion♦ || #Venom♦ (suppression only)
- √ Diazinon products AG500♦, AG600♦ or 50 W♦ (max of 3 apps per season regardless of target pest)

Check for tipworm eggs and larvae when brand new shoots from the runners are abundant at the start of the season and take action if infestation is heavy.
 Belay is a neonicotinoid with **high bee toxicity** & a very long half life in the soil (148 to 1,155 days); Only claims "suppression" (of tipworm) at the lower/4 oz rate.
Movento and **Belay** are post-boom only (best timing is probably early August) and no chemigation with Movento as yet. Both products are systemic (the active ingredient can move in both the xylem and phloem of the plant), so new growth is protected – a huge plus for tipworm management!! *But* Belay is significantly more toxic to bees versus Movento.
Cormoran contains roughly equal parts of novaluron and acetamiprid which come from two different chemical groups (different modes of action), making it a little harder for tipworm resistance to develop and likely giving better control than either Rimon or Assail by themselves. PHI is just one day, but label says you cannot flood within 60 days after using it.

Cranberry Fruitworm

- √ **Altacor** or **Exirel** √ #Belay (suppression only) √ Chlorpyrifos 4E AG♦ √ Entrust♦
- √ **Delegate WG** √ Rimon 0.83 EC √ Hatchet♦, Nufos 4E♦ √ **fall flood & late-water flood**
- √ Assail || Anarchy √ Diazinon products♦ √ Carbaryl 4L
- √ Cormoran √ Imidan 70W √ Sevin 4F
- √ #Scorpion♦ or #Venom♦ √ Lorsban 4E♦ & 75 WG √ #Sevin XLR Plus
- (suppression only) √ Lorsban Advanced♦ √ *Bt*

leafhoppers

The Blunt-nosed Leafhopper is a vector of False Blossom disease!

- √ #Closer SC -- EU nations will reject fruit if 'Closer SC' residue is detected.
- √ **Sevin 4F** / #Sevin XLR Plus √ #Scorpion♦ or #Venom♦
- √ Assail || Anarchy √ Actara♦
- √ Pyronyl♦ / PyGanic♦ √ Belay (4 oz/A) (post bloom)

Redheaded Flea Beetle

- √ **Cormoran**
- √ Belay 4 oz/A (or 12 oz/A soil app)
- √ Actara♦ (suppression only)
- √ Delegate WG (suppression only)
- √ **Diazinon**♦ and **Sevin** products
- √ Assail || Anarchy
- √ #Scorpion♦ or #Venom♦ (suppression only)



Note: Leafhoppers (such as the Blunt-nosed leafhopper) and flea beetles are on the rise! Be watchful in early Sept. for Redheaded flea beetles! This flea beetle is sometimes called Cranberry Flea Beetle.

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