



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	Exirel (cyantraniliprole) 10-20.5 fl oz ↳ for fruitworm and fireworm		
23	Movento (spirotetramat) (tipworm)	8 to 10 fl oz	Systemic; post-bloom only; no chemigation; 7-day PHI; no more than 30 fl oz per A per year.
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; target insects must ingest the material; 2 apps & 13.8 oz max/year.
4-A	#Arena 50 WDG by Valent (clothianidin)	2.1 oz	--- Same active ingredient as Belay; 7-day minimum spray interval and a 21-day PHI.
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). <i>Rimon is translaminar and it 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.</i>
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	(product is essentially Rimon plus Assail, added together; <i>so two modes of action in one</i>)
1-B	Diazinon 50 W*	4 to 6 lb	For all diazinon formulations: 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		<p>fall flood →</p> <p>late-water flood →</p> <p>spring flood (24 hours) →</p> <p>spring flood (48 hours) →</p>	<p>Sept. 27th-Oct. 7th for 3 to 4 weeks (for cranberry fruitworm control).</p> <p>April 21st-26th, hold 30 days (cranberry fruitworm, mites, gypsy moth & cutworms)</p> <p>Late May for cutworms (for example: false armyworm, blossomworm);</p> <p>Late May for 1st-gen BH fireworm (much higher mortality with low-oxygenated water)</p>
1-B	#Imidan 70-W (phosmet)	1.33 to 4 lbs	For fireworm & fruitworm; <i>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;</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;
1-B	Hatchet* Chlorpyrifos 4E AG*	3 pt	
1-B	Lorsban 75 WG	2 lbs	
21	Nexter (pyramite) Miticide	3.5 to 7.0 oz	Southern red mite; use early season (mid-May to mid-June) or after fruit set (mid-July thru August)
1-B	#Orthene 97 Acephate 97UP, 97WDG	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.
	Acephate 90WSP and 90 WDG	1.1 lb	
	Acephate 90 Prill	1.1 lb	
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)	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 4F, Carbaryl 4L		
5	Delegate WG (spinetoram)	3 to 6 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.
	Entrust SC* (spinosad) (organic)	4 to 10 fl oz	
	Entrust 80W	1.25 to 3 oz	

Blackheaded Fireworm (and often other fireworms)

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

Gypsy Moth caterpillars

✓ Avaunt	✓ Confirm 2F	✓ Bt	✓ Pyronyl* / PyGanic*	NOTE: Altacor, Lorsban, or Delegate applied for cutworms or spanworms may also provide some gypsy moth control.
✓ Assail Anarchy	✓ Imidan 70-W		✓ Orthene / Acephate products	
✓ Intrepid*, Troubadour*	✓ Rimon 0.83 EC		✓ Carbaryl 4L	
✓ Turnstyle*	✓ Late-water flood		✓ #Sevin XLR Plus / 4F	

over ↘

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).**

- √ #Arena (post-bloom only due to very high bee toxicity)
- √ Lorsban 4E* or 75 WG
- √ Lorsban Advanced* & Nufos 4E*
- √ Chlorpyrifos 4E AG*
- √ Hatchet*
- √ **Avaunt** (Registered for *spring* populations only—**no summer applications**)
- √ **Actara*** (post-bloom **preferred** due to high bee toxicity) (30-day PHI)
- √ Imidan 70-W
- √ #Scorpion* or #Venom* (suppression only)

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

- √ Delegate WG
- √ **Avaunt**
- √ **Intrepid 2F***
- √ **Rimon 0.83 EC** (blossomworm only)
- √ **Cormoran**
- √ Confirm 2F
- √ Lorsban 4E* or 75 WG
- √ Lorsban Advanced*
- √ Imidan 70-W
- √ Diazinon products*
- √ Chlorpyrifos 4E AG*
- √ Hatchet*, Nufos 4E*
- √ Orthene / Acephate products
- √ #Sevin XLR Plus
- √ Sevin 4F
- √ Carbaryl 4L
- √ Entrust*
- √ 10-hr flood (last resort)
- √ *Bt*
- √ Late-Water flood
- √ Spring flood (24 hours)

spanworms (inchworms)

- √ **Altacor**
- √ **Avaunt**
- √ **Rimon 0.83 EC**
- √ **Cormoran**
- √ **Intrepid***, Troubador*
- √ Turnstyle*
- √ Lorsban 4E* or 75 WG
- √ Lorsban Advanced*
- √ Imidan 70-W
- √ Nufos 4E*, Hatchet*
- √ Chlorpyrifos 4E AG*
- √ Confirm 2F
- √ #Scorpion* / #Venom* (suppression only)
- √ Orthene / Acephate products
- √ Sevin (winter moth larvae but none found as yet)
- √ **Delegate WG**
- √ Assail || Anarchy
- √ *Bt*
- √ Entrust*
- √ Pyronyl* / PyGanic*
- √ 10-hour flood

Cranberry Tipworm

Belay is no longer labeled for cranberry!

- √ **Movento** (post-bloom only)
- √ **Cormoran** (contains the ai of Rimon + Assail)
- √ **Rimon 0.83EC** (translaminar action)
- √ Assail 30 SG || Anarchy 30 SG
- √ #Scorpion* || #Venom* (suppression only)
- √ #Arena (post-bloom only; highly toxic to bees)
- √ Diazinon AG500*, AG600* or 50 W*
- √ Imidan 70-W

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.
Arena is a neonicotinoid with **high bee toxicity** & a very long half life in the soil (148 to 1,155 days); may only provide suppression of tipworm if it performs the same as **Belay** (same a.i.)
Movento and **Arena** 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* **Arena** 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

Belay is no longer labeled for cranberry, although Arena has the same active ingredient.

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

leafhoppers

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

- √ #Closer SC -- EU nations will reject fruit if sulfoxaflor residue is detected.
 - √ **Sevin 4F** / #Sevin XLR Plus
 - √ Assail || Anarchy
 - √ Pyronyl* / PyGanic*
 - √ #Scorpion* or #Venom*
 - √ Actara*
- Rimon's label includes flea beetle larvae.

Redheaded Flea Beetle

- √ **Cormoran**
- √ #Arena (post-bloom only)
- √ Actara* (30-day PHI)
- √ Delegate WG (suppression only)
- √ Diazinon* and Sevin products
- √ Assail || Anarchy
- √ #Scorpion* or #Venom*
- √ Imidan 70-W



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 also called Cranberry Flea Beetle, especially on pesticide labels.

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