

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; target eggs & small larvae; <i>safe on bees</i> ; <i>very low toxicity to mammals!</i> 1-day PHI; max of 9 oz/season. Poor results on larger larvae. Exirel & Verdepryn: Cannot use during bloom due to high bee toxicity; 14-day PHI; 12-hr REI; beds must be drained of water for 24 hrs prior to app through 24 hrs after application.
28	Exirel (cyantraniliprole)	10-20.5 fl oz	
28	Verdepryn (cyclaniliprole)	8.2-11 fl oz	
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	#Scorpion* 3.5-7 fl oz #Venom* 3.5-7 fl oz (dinotefuran)		- No chemigation; Good choice for flea beetles & leafhoppers; 'Suppression only' of tipworm, fireworm, fruitworm, weevil and spanworms; <i>highly toxic to bees!</i>
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	Excellent choice for cutworms and spanworms; Hold water 1 day.
11-B2	Bt (examples: Dipel 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 is translaminar and it kills tipworm larvae but <i>not</i> tipworm flies, as it must be ingested; Rimon is non-toxic to adult bees and can be used up to three times per season, with a 1-day PHI.
18-A	Intrepid 2F* (methoxyfenozide)	10-16 fl oz	
	(Turnstyle, Troubadour 2F, Invertid 2F)	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	→ Two modes of action in one. Not yet registered in Maine for 2023.
1-B	Diazinon AG600*	51 to 76.5 oz	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 3 applications per season and use a 14-day spray interval.
	#Imidan 70-W (phosmet)	1.33 to 4 lbs	For fireworm & fruitworm; Using water with pH of 6 to 7 can reduce efficacy;
	Acephate 97UP	1 lb	Only one app per season; most have a 90-day PHI but some are 75; DO NOT apply from 10 days prior to bloom until completion of pollination due to bee toxicity; 24-hr REI. Effective against the larvae of: <i>spongy moth, fireworms, cutworms and spanworms.</i>
	Tide Acephate 90 WDG	1.1 lb	
3-A	Pyronyl crop spray PyGanic EC 1.4 and Pyganic EC 5.0	See labels	Spanworms & spongy moth caterpillars (plus tussock, tent, and woollybear caterpillars).
1-A	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)	3 to 6 oz 4 to 10 fl 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.
21	Nexter (pyramite) Miticide	4.4 to 10.67 oz	Southern red mite; use early-season (mid-May to mid-June) or after fruit set (mid-July thru August)

Floods

- fall flood → Sept. 27th-Oct. 7th for 3 to 4 weeks (for cranberry fruitworm control).
- late-water flood → April 21st-26th, hold for 30 days (fruitworm, mites, scale, spongy moth & cutworms)
- spring flood (24 hours) → Late May for cutworms (false armyworm and cranberry blossomworm)
- spring flood (48 hours) → Late May for 1st-gen BH fireworm (much higher mortality with low-oxygenated water)

Blackheaded Fireworm (and often other fireworms)

✓ Altacor, Exirel	✓ #Venom*(suppression)	✓ Acephate products	✓ Entrust
✓ Cormoran (if registered)	✓ Intrepid* Troubadour* Turnstyle*	✓ #Imidan 70-W	✓ Pyronyl / PyGanic
✓ Avaunt	✓ Rimon 0.83 EC	✓ Carbaryl 4L	✓ Spring flood (48 hours)
✓ Assail Anarchy	✓ Diazinon products*	✓ Delegate WG	✓ 10-hour flood (last resort)
✓ #Scorpion*(suppression)	✓ Confirm 2F	✓ Bt	

Spongy Moth caterpillars

✓ Avaunt	✓ Confirm 2F	✓ Pyronyl / PyGanic
✓ Assail Anarchy	✓ #Imidan 70-W	✓ Acephate products
✓ Intrepid*, Troubadour* Turnstyle*	✓ Rimon	✓ Carbaryl 4L
	✓ Late-water flood	✓ Bt

NOTE: Group 28 products or Delegate applied for cutworms or spanworms may also provide some Spongy Moth caterpillar control.

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 weevils per 25 sweeps for the summer generation (~late July).**

- √ **Actara**♦ (post-bloom **preferred** due to high bee toxicity) (30-day PHI)
- √ **Avaunt** (Registered for spring populations only!) (seeing weevil resistance in Massachusetts)
- √ **#Scorpion**♦ or **#Venom**♦ (suppression only)
- √ **#Imidan 70-W**

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

- √ **Delegate WG**
- √ **Avaunt**
- √ **Exirel**
- √ **Intrepid 2F**♦
- √ **Rimon** (especially blossomworm)
- √ **Cormoran** (if registered)
- √ **Verdepryn** (for armyworms, also)
- √ Confirm 2F
- √ **#Imidan 70-W**
- √ Diazinon products♦
- √ Acephate Products
- √ Carbaryl 4L
- √ Entrust♦
- √ *Bt*
- √ 10-hr flood (last resort)
- √ Late-Water flood
- √ Spring flood (24 hours)

spanworms (inchworms, loopers, geometers) (Geometridae family)

- √ **Altacor**
- √ **Avaunt**
- √ **Rimon**
- √ **Cormoran** (if registered)
- √ **Intrepid**♦, **Troubador**♦ or **Turnstyle**♦
- √ **Delegate WG**
- √ **#Imidan 70-W**
- √ Confirm 2F
- √ **#Scorpion**♦ / **#Venom**♦ (suppression only)
- √ Acephate products
- √ Assail || Anarchy
- √ *Bt*
- √ Entrust
- √ Pyronyl / PyGanic
- √ 10-hour flood

Winter moth is in this group but larvae have not been confirmed as yet on any cranberry beds in Maine.

Cranberry Tipworm

- √ **Movento** (post-bloom only)
- √ **Cormoran** (if registered)
- √ **Rimon** (translaminar action)
- √ Assail 30 SG || Anarchy 30 SG
- √ **#Scorpion**♦ / **#Venom**♦ (suppression only)
- √ **Verdepryn** (suppression only; use early before the populations build up)
- √ Diazinon AG600♦
- √ 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. Populations typically build up as the season progresses, from May through August.

Arena and **Belay** are no longer registered for cranberry! They were neonicotinoids with **high bee toxicity** and a *very long* half life in the soil (148 to 1,155 days)!

Movento is post-boom only (best timing is probably early August) and **chemigation is not allowed** with Movento. 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!!

Cormoran (registration not yet renewed for Maine for 2023); 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 alone. PHI is just one day, but label says you cannot flood within 60 days after using it.

Cranberry Fruitworm

- √ **Altacor** or **Exirel**
- √ **Delegate WG**
- √ **Verdepryn**
- √ Assail || Anarchy
- √ **Cormoran** (if registered)
- √ **#Imidan 70-W**
- √ **#Scorpion**♦ or **#Venom**♦ (suppression only)
- √ **Rimon**
- √ Diazinon products♦
- √ Carbaryl 4L
- √ Entrust (OMRI-listed)
- √ *Bt*
- √ **fall flood & late-water flood**

leafhoppers

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

- √ **#Closer SC** -- EU nations will reject fruit if sulfoxaflor residue is detected.
 - √ Assail || Anarchy
 - √ Pyronyl / PyGanic
 - √ **#Scorpion**♦ or **#Venom**♦
 - √ Actara♦
- Note: Leafhoppers** (such as the Blunt-nosed leafhopper) **and flea beetles may still be 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.

Redheaded (Cranberry) Flea Beetle

- √ **Cormoran** (if registered)
- √ **Rimon**
- √ **Actara**♦ (30-day PHI) (suppression only)
- √ **Delegate** (suppression only)
- √ **Diazinon**♦ products
- √ Assail || Anarchy
- √ **#Scorpion**♦ or **#Venom**♦
- √ **#Imidan 70-W**

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