

Subject: Massachusetts IPM Berry Blast 5/10/11
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Massachusetts IPM Berry Blast 5/6/11

STRAWBERRY/RASPBERRY

Tarnished Plant Bug (for IPM info see <http://www.omafra.gov.on.ca/IPM/english/strawberries/insects/tarnished-plant-bug.html>)

This pest causes “cat faced” or “button berries” in strawberries and misshapen fruit in raspberries. Tarnished plant bug adults and nymphs cause damage to the fruit but nymphs are more abundant so are of greater concern. Nymphs are yellow/tan to light green, have long antennae, look a bit like aphids but unlike aphids they move very fast when disturbed.

Scouting for nymphs in strawberry by striking the plant over a white colored dish or piece of paper as this will knock the nymphs free from plants. Immature TPB (nymphs) are sampled by shaking flower trusses over a flat white surface. Thirty flower clusters should be sampled evenly from across the field (typically 6 clusters at 5 locations or 5 clusters at 6 locations). If 4 or more flower clusters are infested with nymphs (regardless of how many) a spray is recommended. A follow-up spray application may be made after bloom if TPB are still present in high numbers (check harvest interval before selecting material). If the threshold is exceeded, consider treating with one of the labeled materials below. **DO NOT SPRAY INSECTICIDES DURING BLOOM.**

Conventional	Organic (OMRI listed)
Malathion 57 EC	Pyganic 1.4 ECII
Dibrom 8EC	Pyganic 5.0 ECII
Brigade WSB	
Danitol EC	
Assail SG	
Pyrenone Crop Spray 0.5 EC	

Read labels thoroughly for application rates and restrictions (REI, PHI, etc.)

Strawberry Bud Weevil – Clipper (for IPM info see <http://www.omafra.gov.on.ca/IPM/english/strawberries/insects/strawberry-clipper-weevil.html>)

In the pre-bloom to early bloom period the clipper is one of the main insect pests in strawberries. The females lay an egg in an unopened flower bud and then clip the stem of the bud causing it to flop over or fall off. Only unopened flower buds are affected. Some strawberry varieties (e.g., Jewel and Seneca), can tolerate a fair amount of bud loss from clipper, causing the remaining fruit to size up more (like thinning peaches). However in high numbers, it can be a problem in any variety. Clipper tends to be a more severe problem along borders of plantings, near woods, hedgerows or stonewalls.

Scout for clipper by counting the number of damaged flower trusses per meter (yd) of row in several locations in the field. Treat for clipper when you find an average of more than 3 highly damaged flower trusses per meter of row. If the threshold is exceeded, consider treating with one of the labeled materials below. You may be able to treat only border rows near woods, hedgerows or stonewalls. **DO NOT SPRAY INSECTICIDES DURING BLOOM.**

Conventional	Organic (OMRI listed)
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Lorsban 4E	Pyganic 1.4 ECII
Brigade WSB	Pyganic 5.0 ECII
Danitol 2.4 EC	

Read labels thoroughly for application rates and restrictions (REI, PHI, etc.)

Two-spotted Spider Mite (for IPM info see <http://www.omafra.gov.on.ca/IPM/english/strawberries/insects/two-spotted-spider-mite.html>)

Two-spotted spider mite can be a problem in plantings starting early and throughout the growing season. This is a tiny arthropod that lives on the underside of leaves and damages the plant by sucking out chlorophyll from the leaves. When allowed to grow to large numbers, tssm feeding weakens the plants and makes them more susceptible to stress and infection by other pathogens. You may see areas of the field with whitish or yellowish stippling on leaves

Mites should be monitored weekly by sampling the field in 5 to 10 locations. Five to ten leaves should be sampled at each location for a total of 60 leaves. Examine the underside of the leaves for the presence or absence of TSSM. Record the information on a field map so that "hot spots" can be identified and treated. A miticide application is recommended if 25% (i.e., 15 leaves) or more of a 60 leaf sample is infested with TSSM.

Natural predators exist which feed on two-spotted spider mites. One such predator, also a mite (Neoseiulus fallacis), is native to the northeast and often maintains TSSM populations at non-damaging levels. Another is Phytoseiulus persimillis. Both are commercially available for release to control TSSM. Beneficial mites must be introduced before large populations of mites develop, but after insecticides for tarnished plant bug have been applied.

If the threshold is exceeded, consider releasing predators or treating with one of the labeled materials below. **DO NOT SPRAY MITICIDES DURING BLOOM.**

Conventional	Organic (OMRI listed)
Vendex 4L	JMS Stylet Oil
Agri-mek .15EC	
Savey 50DF	Release of predatory mites at recommended rates (will vary – consult supplier)
Zeal WP	
Kanemite 15SC	
Acramite 50WS	
Portal	
Danitol 2.4 EC	
Brigade WSB	
<i>Danitol and Brigade are hard on predatory mites</i>	

Read labels thoroughly for application rates and restrictions (REI, PHI, etc.)

Botrytis Gray Mold (for IPM info see <http://www.omafra.gov.on.ca/IPM/english/strawberries/diseases-and-disorders/botrytis.html>)

Symptoms of gray mold include light brown areas on fruit; a powdery gray growth produced on rotted fruit and leaf tissue; and whole rotted berries that retain their general shape but become tough and dry.

Gray mold is a serious problem because it often attacks other living plant parts in addition to developing and harvested fruit. The fungus overwinters in living plant tissue and proliferates in the spring as leaves die. Favored by cool, wet weather, the fungus establishes itself on dead or aging leaves, moving to healthy tissue as more and more spores are produced. Petals and other parts of older flowers are likely to be attacked first. These infections may destroy developing fruit immediately or become dormant until the fruit begins to ripen. Secondary infections may occur when spores that cling to ripening fruit germinate in moist packaging conditions after the fruit is harvested, causing uncontrollable storage rots.

It is important to maintain proper spacing between plants and also narrow plant rows to allow good air circulation. This will promote rapid drying of foliage, blossoms, and fruit during periods of high humidity, rain, irrigation, or dew and lessen the chance of Botrytis spores germinating on plant surfaces. Beds that become too crowded are likely to promote Botrytis fruit rot. Heavy nitrogen applications, particularly early spring applications, also promote Botrytis development.

If Botrytis is a chronic serious problem or in years with a lot of rainfall during bloom, fungicides should be applied during the bloom period.

Conventional	Organic (OMRI listed)
Elevate	Oxidate
CaptEvote 68WDG	Actinovate AG (best applied with a spreader/sticker)
Captan 50WP	JMS Stylet Oil
Switch	
Pristine WG	

Read labels thoroughly for application rates and restrictions (REI, PHI, etc.)

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