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Update on Pest Management and Crop Development

F R U I T J O U R N A L

April 19, 2010 VOLUME 19, No. 5 Geneva, NY


INSECTS

FIRE 'N' ICE

ORCHARD RADAR DIGEST

**Roundheaded Appletree Borer**
RAB adult emergence begins: May 27; Peak emergence: June 12.
RAB egglaying begins: June 7. Peak egglaying period roughly: June 28 to July 12.

**Codling Moth**
1st generation 3% CM egg hatch: June 8 (= target date for first spray where multiple sprays needed to control 1st generation CM).
1st generation 20% CM egg hatch: June 15 (= target date where one spray needed to control 1st generation codling moth).

**Lesser Appleworm**
1st LAW flight, 1st trap catch: May 4.

**Mullein Plant Bug**
Expected 50% egg hatch date: May 14, which is 5 days before rough estimate of Red Delicious petal fall date.
The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched.
90% egg hatch date: May 19.

**Obliquebanded Leafroller**
1st generation OBLR flight, first trap catch expected: June 8.

**Oriental Fruit Moth**
1st OFM flight starts: April 21.

**Redbanded Leafroller**
Peak trap catch and approximate start of egg hatch: April 23.

**San Jose Scale**
First adult SJS caught on trap: May 13.

**Spotted Tentiform Leafminer**
1st STLM flight, peak trap catch: May 1.
1st generation sapfeeding mines start showing: May 17.
Optimum sample date is around May 18, when a larger portion of the mines have become detectable.

**White Apple Leafhopper**
1st generation WALH found on apple foliage: May 8.

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## WHAT'S NEWA?

PEST FORECASTS IN REAL TIME

(Art Agnello & Harvey Reissig, Entomology, Juliet Carroll, NYS IPM Program, and Kerik Cox, Plant Pathology & PMB, Geneva)

❖❖ Since last season, the NYS IPM's NEWA (Network for Environment and Weather Applications) weather and degree day website has contained an "Insect Models" utility that takes real-time weather data from a number of sites around the state, and compares it against historical records and developmental models to give a prediction of pest species development and activity in those locations. We are pleased to announce that an improved version of this resource has recently gone live and is now available to all users.

Insect pest developmental stages are calculated from Degree Day (DD) accumulations at NEWA and National Weather Service airport weather stations throughout the state. The insect pests addressed by this website are: apple maggot, oriental fruit moth, codling moth, plum curculio, obliquebanded leafroller, and spotted tentiform leafminer. Disease predictions are available for apple scab and fire blight, and a summer disease (sooty blotch and flyspeck) development model is due to be made available this summer.

Access to the Apple Insects models is through the "Pest Forecasts" list or the "Apples" link on the NEWA homepage (http://newa.cornell.edu). From the Apples homepage, clicking on the link that says "Apple Insect Phenology Models and IPM Forecasts" brings up a state map showing the available weather stations, plus pull-down menus on one side. After the user selects a weather station, pest of interest, and the desired end date for weather data accumulation, pest DD models and historical records are used to calculate: Tree Phenological Stage, Pest Stage(s), Pest Status, and Pest Management Information, all of which appears on a "Results" page (Fig. 1).

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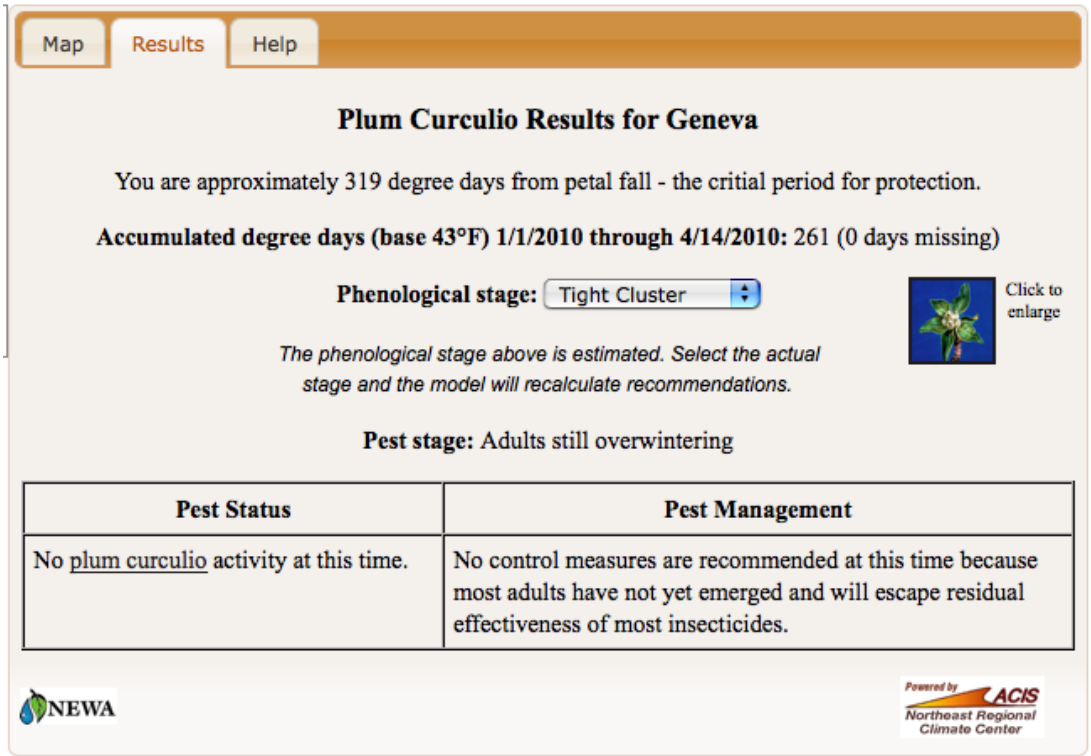


Fig. 1. Results page showing pest and crop developmental status and management information.

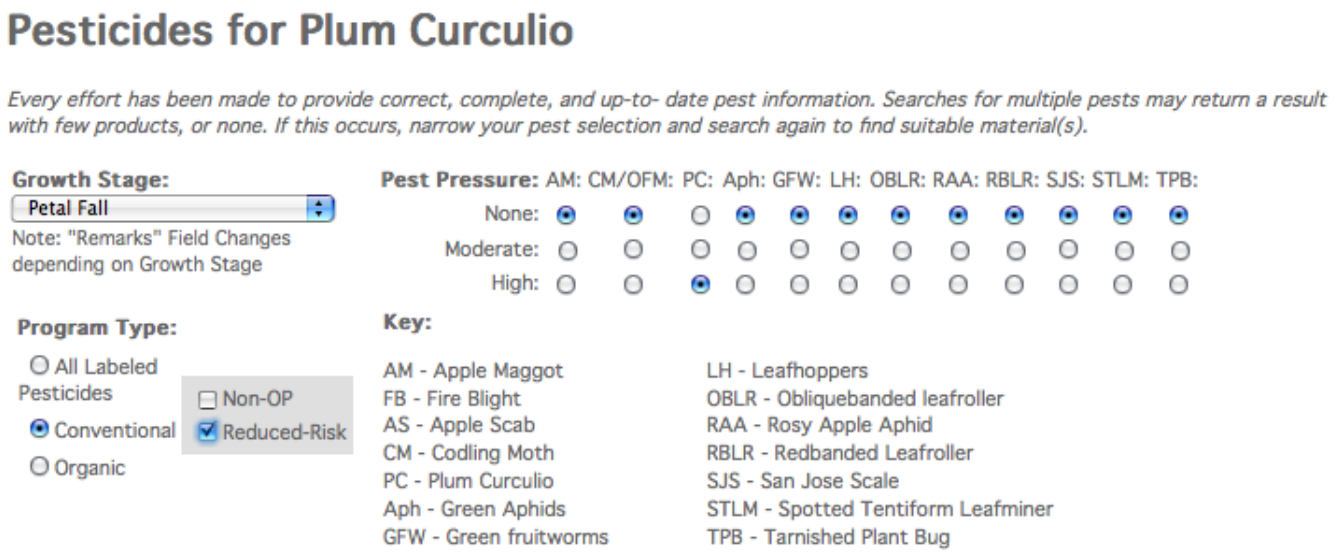


Fig. 2. Pesticide decision filter for selection of appropriate choice based on pest pressure, product efficacy, and management program elected.

The phenological stage can be adjusted according to field observations by selecting from a pull-down menu; this will generally change some of text provided in the advice boxes. Hyperlinks on this page can take the user to various other online resources, such as color photos of the bud development stages, NYS IPM Fact Sheets of the pests in question, and when appropriate, sampling charts for use in conducting field samples of specific pest life stages (e.g., eggs, larvae, mines). As a new feature this season, when a pesticide spray is recommended, a "Pesticide Information" link in the "Pest Mangement" box takes the user to the Pest Management Education Program's (PMEP) Tree Fruit IPM home page, where a pesticide decision filter helps users pick an appropriate material to use, based on anticipated pest severity and program type (Fig. 2).

A pesticide search returns a series of profiles of all the NY-registered products fitting the specified pest species and efficacy rating (Fig. 3). The profile gives the common and trade names, labeled use rate, re-entry and pre-harvest intervals, and EPA registration number of each product. Also included are some general remarks on the range of product efficacy, and any known effects on beneficial species. A "Details" link in each profile takes the user to a more extensive list of information, including notes on the active ingredient (including its mode of action classification), an overview of recommended use periods, and a link to a scanned copy of the NYS DEC-approved product label, which can be read or printed out.

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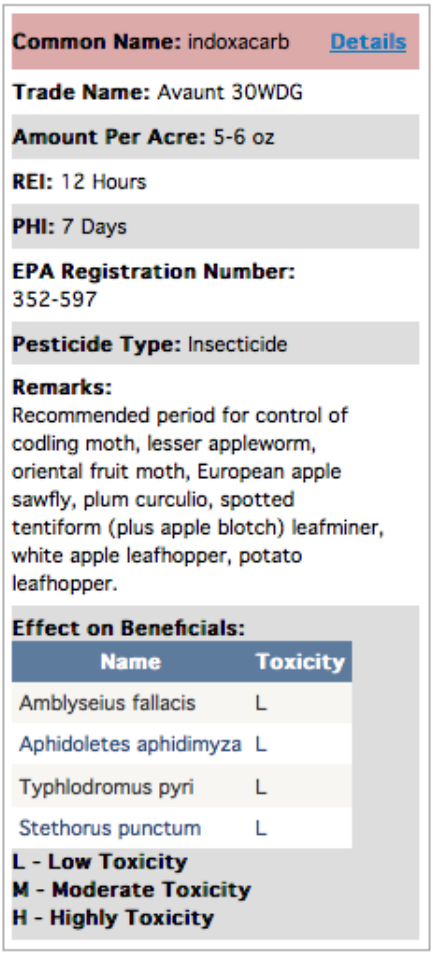

**Common Name:** indoxacarb Details

**Trade Name:** Avaunt 30WDG

**Amount Per Acre:** 5-6 oz

**REI:** 12 Hours

**PHI:** 7 Days

**EPA Registration Number:** 352-597

**Pesticide Type:** Insecticide

**Remarks:**
Recommended period for control of codling moth, lesser appleworm, oriental fruit moth, European apple sawfly, plum curculio, spotted tentiform (plus apple blotch) leafminer, white apple leafhopper, potato leafhopper.

**Effect on Beneficials:**

| Name | Toxicity |
|---|---|
| Amblyseius fallacis | L |
| Aphidoletes aphidimyza | L |
| Typhlodromus pyri | L |
| Stethorus punctum | L |

**L - Low Toxicity**
**M - Moderate Toxicity**
**H - Highly Toxicity**

Fig. 3. Example of an insecticide product profile generated as one choice by the pesticide filter.

All of the information presented is available online at various other university sites, but this website brings these resources together in one place that is more convenient and efficient to access. Predictions provided by the website can be refined and adjusted to reflect current insect activity by user-entered events obtained through field monitoring (such as pest biofix; i.e., the first sustained flight of a pest species). The pesticide selection filter uses Cornell University product efficacy ratings and the type of management program selected by the user (i.e., conventional, reduced-risk, non-organophosphate, organic).

It is our hope that this decision support website will be a useful tool in allowing growers to optimize their efforts by combining weather-based pest development predictions, historical records, and minimal field monitoring sessions to obtain an acceptable level of fruit quality without having to make excessive spray applications. ❖❖

## PEST FOCUS

Geneva: 1st **Oriental fruit moth** trap catch 4/16.

scaffolds
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## PHENOLOGIES

Geneva:

| | 4/19 | 4/26 (Predicted) |
|---|---|---|
| Apple(McIntosh): | early pink | bloom |
| Apple(Red Delicious): | early pink | king bloom |
| Apple(Empire): | pink | king bloom |
| Pear: | 50% bloom | bloom |
| Sweet cherry: | bloom | bloom–petal fall |
| Tart cherry | white bud | bloom |
| Plum: | bloom | bloom |
| Peach: | bloom | bloom–petal fall |

## UPCOMING PEST EVENTS

| | 43°F | 50°F |
|---|---|---|
| Current DD accumulations (Geneva 1/1–4/19/10): | 285 | 151 |
| (Geneva 1/1–4/19/2009): | 143 | 51 |
| (Geneva "Normal"): | 163 | 70 |
| (Geneva 1/1–4/26 predicted): | 336 | 172 |

| Coming Events: | Ranges (Normal ±StDev): | |
|---|---|---|
| Green fruitworm flight subsides | 246–456 | 111–241 |
| Redbanded leafroller 1st flight peak | 231–367 | 104–188 |
| Spotted tentiform leafminer 1st flight peak | 263–387 | 121–199 |
| Comstock mealybug 1st gen. crawlers in pear | 215–441 | 80–254 |
| European red mite egg hatch | 231–337 | 100–168 |
| Rose leafhopper nymphs on multiflora rose | 239–397 | 96–198 |
| Lesser appleworm 1st catch | 260–538 | 119–287 |
| Obliquebanded leafroller larvae active | 158–314 | 64–160 |
| Pear psylla 1st egg hatch | 174–328 | 60–166 |
| Mirid bugs 1st hatch | 331–443 | 163–229 |
| McIntosh at bloom | 349–419 | 171–219 |

NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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