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Update on Pest Management and Crop Development
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COMING EVENTS

	43°F	50°F
Current DD accumulations		
(Geneva 1/1-5/2):	262	122
(Geneva 1/1-5/2/2010):	402	212
(Geneva "Normal"):	277	133
(Geneva 1/1-5/9 Predicted):	319	146
(Highland 1/1-5/2):	324	157

Coming Events – Ranges (Normal +/- Std Dev):

Comstock mealybug		
1st gen. crawlers in pear	215-441	80-254
European red mite egg hatch	231-337	100-168
Green fruitworm flight subsides	247-451	111-239
Lesser appleworm 1st catch	263-567	120-306
OBLR larvae active	158-314	64-160
Oriental fruit moth 1st catch	222-324	94-164
Pear psylla 1st egg hatch	174-328	60-166
Redbanded leafroller 1st flight peak	231-365	105-187
Rose leafhopper 1st nymph on rose	239-397	96-198
STLM 1st oviposition	143-273	58-130

STLM 1st flight peak	264-394	121-203
McIntosh at pink	275-311	124-158

Phenologies	5/2	5/9 (Predicted)
Geneva:		
Apple (McIntosh):	tight cluster	pink–bloom
Apple (Empire):	tight cluster	king bloom
Apple (Red Delicious):	tight cluster	pink
Pear (Bartlett):	green cluster	bloom
Sweet cherry (Hedelfingen):	first bloom	bloom–petal fall
Tart cherry (Montmorency):	white bud	bloom
Peach (Red Haven):	pink	bloom
Apricot (Harrowblush)	bloom	petal fall

Highland:	
Apple (Ginger Gold):	full bloom
Apple (McIntosh):	early bloom
Apple (Red/Golden Delicious):	late pink
Pear (Bartlett/Bosc):	full bloom
Peach (early – Red Haven):	bloom
Peach (late):	bloom
Plum (Italian/Stanley):	bloom
Cherry (Sweetheart, Early):	full bloom
Apricot (Early):	later petal fall/fruit set

TRAP CATCHES (Number/trap/day)

Geneva

	4/21	4/25	4/28	5/2
Green Fruitworm	0.0	0.0	0.0	0.0
Redbanded Leafroller	0.0	1.0*	2.3	3.8
Spotted Tentiform Leafminer	0.0	0.0	0.0	0.4*

Highland (Peter Jentsch)

	4/18	4/25	5/2
Green Fruitworm	0.3	0.0	0.6
Redbanded Leafroller	3.9	4.7	10.6
Spotted Tentiform Leafminer	0.4	10.8	37.5
Oriental Fruit Moth	0.0	0.0	5.6*
Lesser Appleworm	-	0.0	0.0

* = 1st catch

PEST FOCUS

Geneva: 1st Spotted Tentiform Leafminer trap catch today, 5/2.

Highland: Oriental Fruit Moth 1st catch today, 5/2.
Increased Pear Psylla ovipoistion and nymph emergence observed last week.
Low numbers of Brown Marmorated Stink Bug observed in pear.

[Section: INSECTS]

USING THE APPLE IPM WEBSITE TO GET A HEADS-UP ON INSECT ACTIVITY

(Art Agnello and Harvey Reissig, Entomology, Geneva)

[Box Text: HIT THE LINKS]

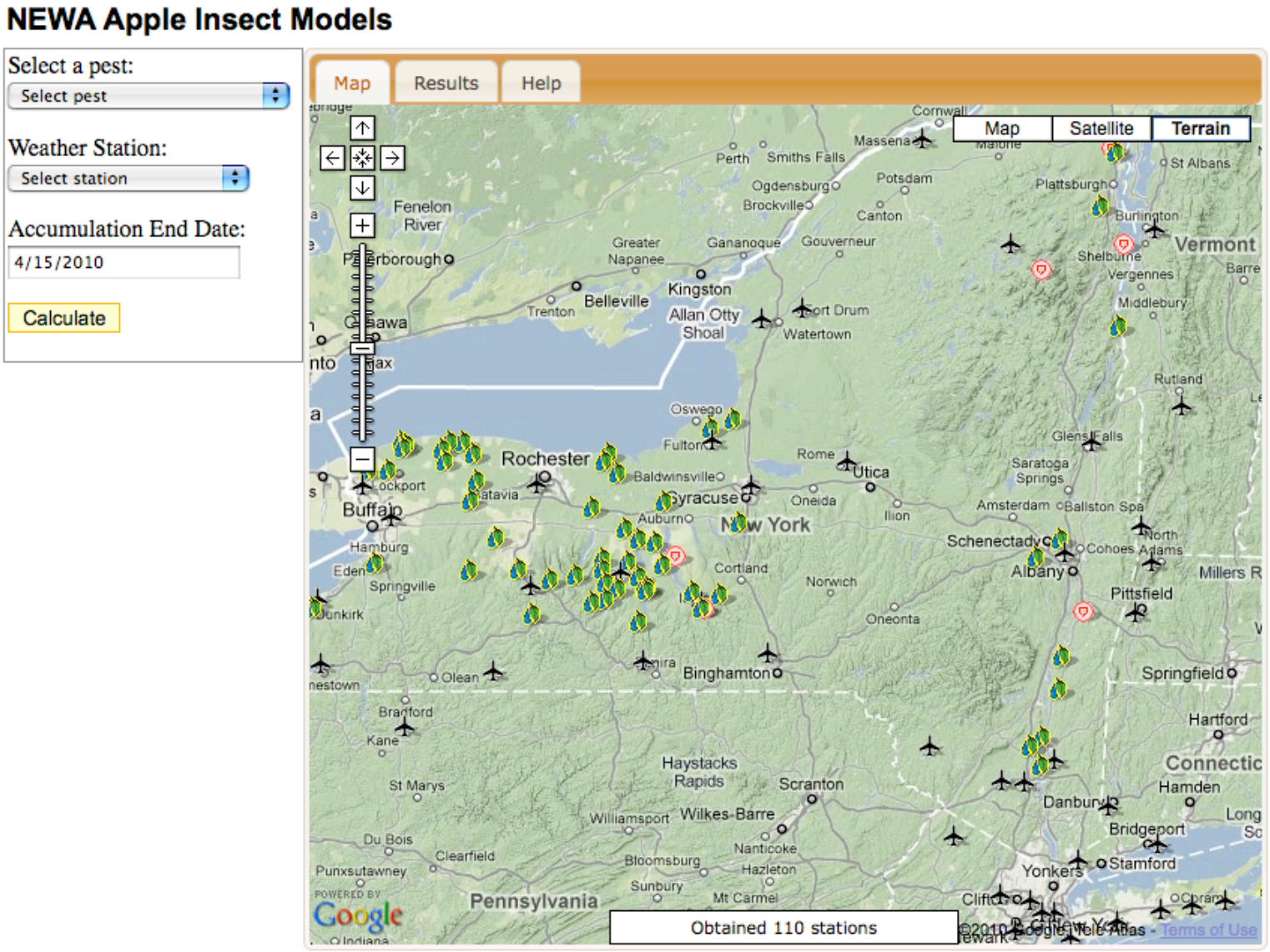
Apple growers in the Eastern US have faced challenges in managing the complex of insects and diseases of apples using conventional pesticides during the last decade because of increasing pesticide regulatory restrictions, public concerns about food safety and environmental quality, and the development of resistance to older materials by key insect and disease pests. Growers are attempting to turn to newer reduced-risk pesticides, but these are more expensive and require more precise use patterns because of their different modes of action. In addition, many current IPM protocols were designed for older conventional materials. During the last several years, an interdisciplinary group of researchers at Cornell University has developed a web-based, "Real-Time" Apple IPM Decision Support System that can deliver relevant, current information on weather data and pest populations to facilitate grower pest management decisions throughout the growing season. This system tracks seasonal development of key insect pests and

diseases using Degree Day and Infection Risk models. The models indicate pest status, pest management advice and sampling options, and are linked to an interactive system that helps growers choose appropriate materials when pesticide use is recommended.

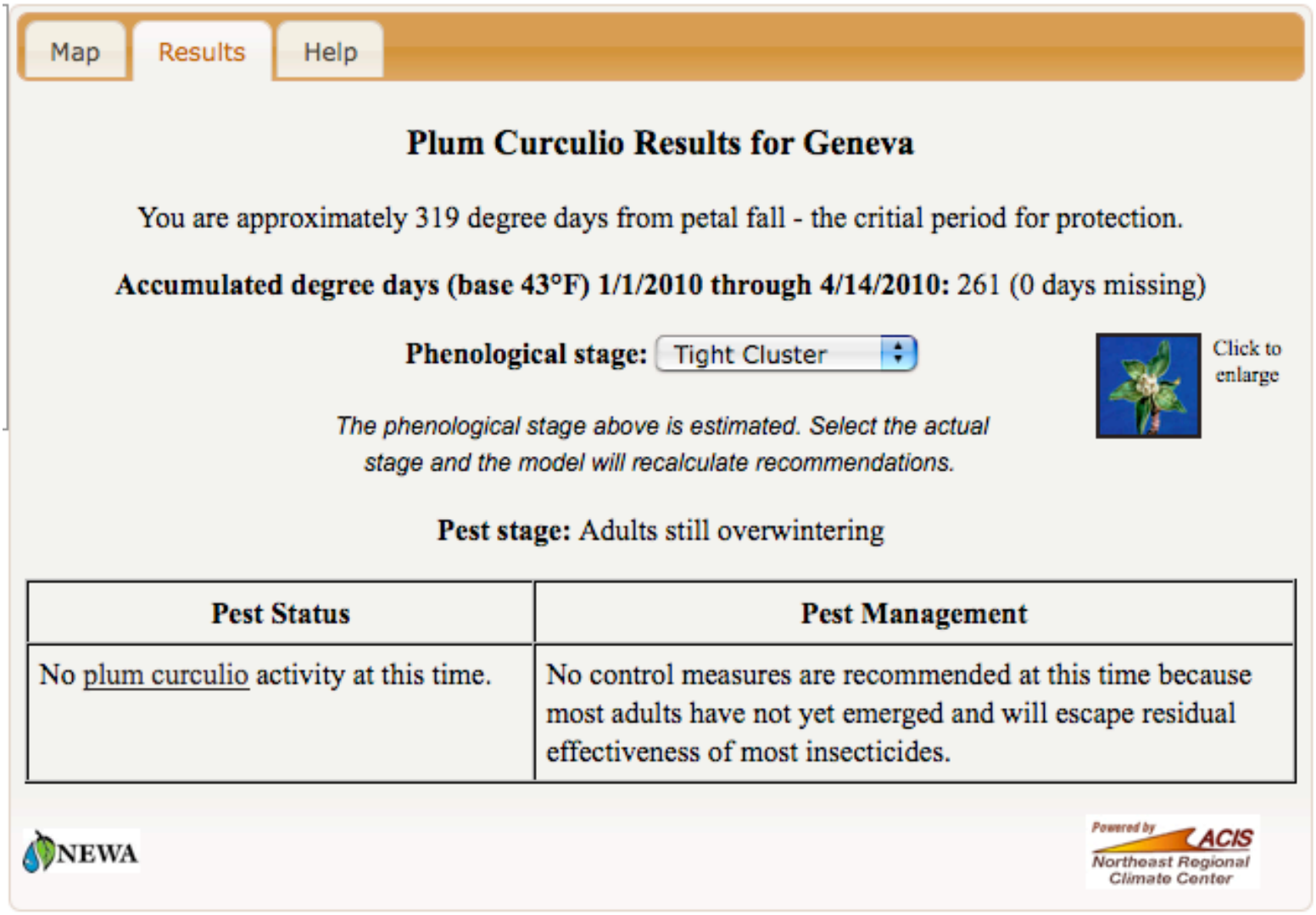
Insect pest developmental stages are calculated from Degree Day (DD) accumulations at IPM's NEWA and National Weather Service airport weather stations throughout the state, as well as a large number of sites in MA and VT, plus several in CT, RI, NJ, and PA. The insect pests addressed by this website 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 (Fig. 1).

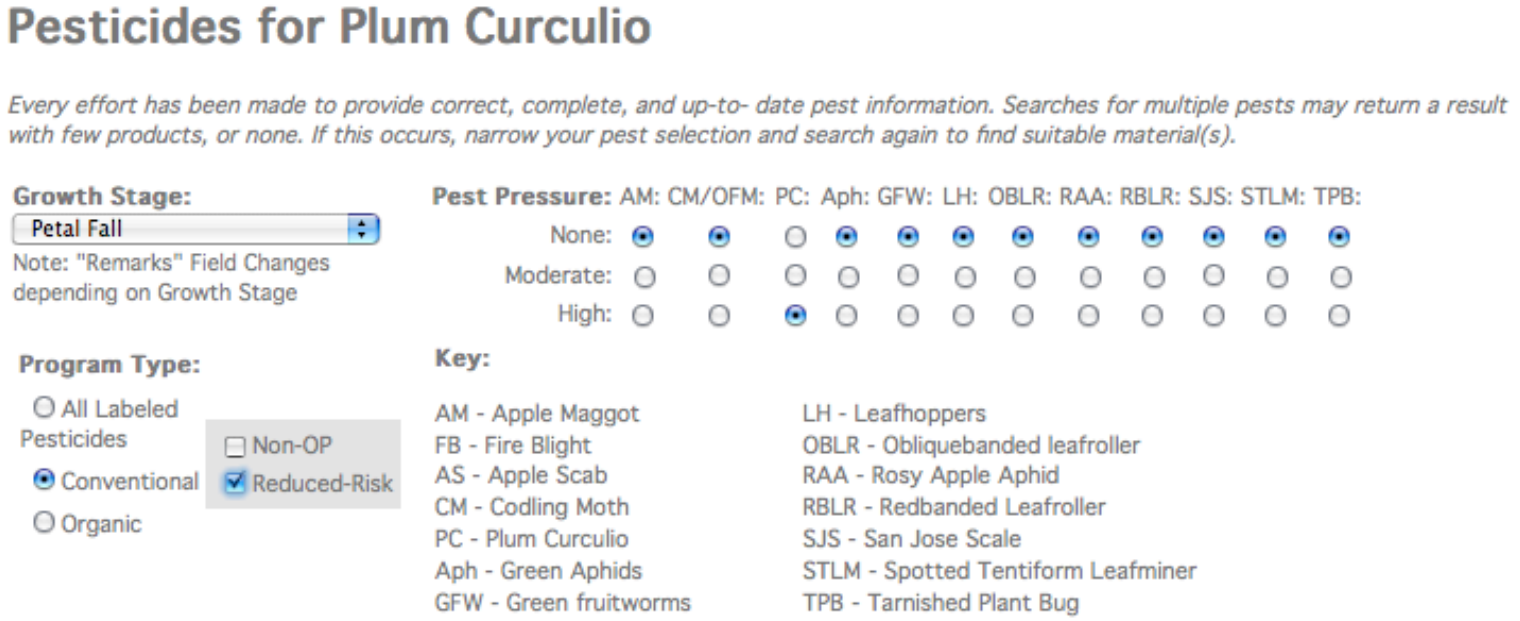


After the user selects a weather station, pest of interest, and the desired end date for weather data accumulation, pest DD models and historical records are used to calculate: Tree Phenological Stage, Pest Stage(s), Pest Status, and Pest Management Information, all of which appears on a "Results" page (Fig. 2).



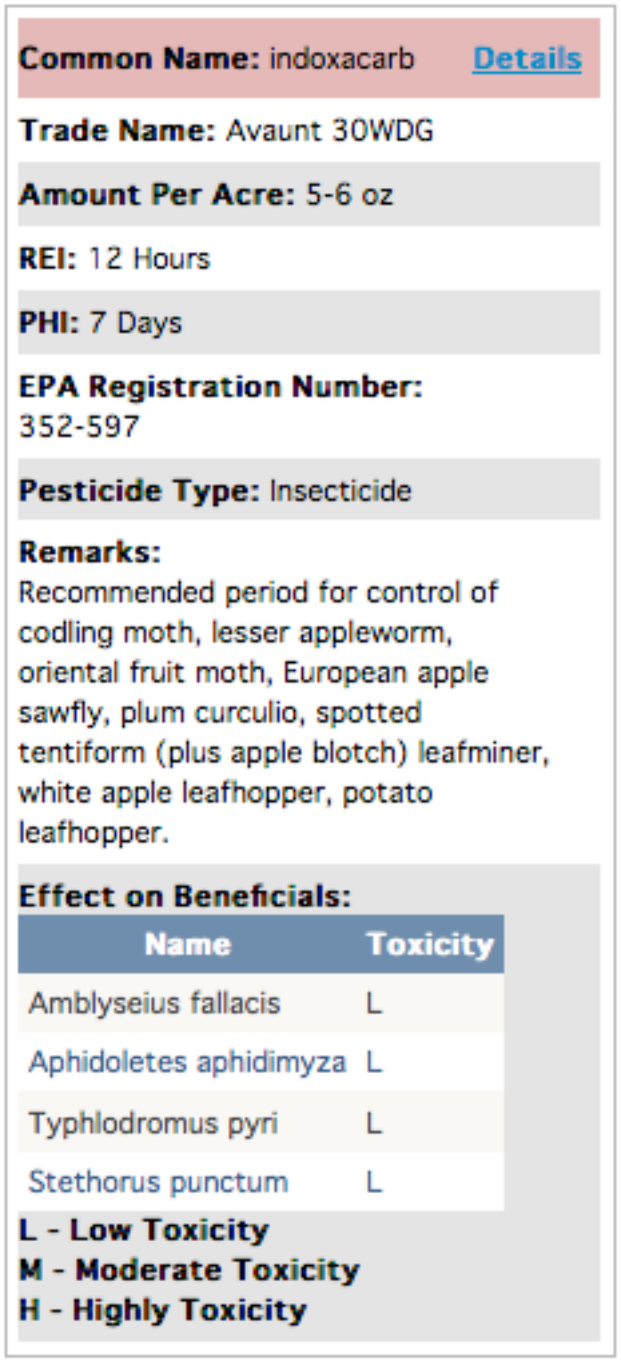
The phenological stage can be adjusted according to field observations by selecting from a pull-down menu; this will generally change some of text provided in the advice boxes. Hyperlinks on this page can take the user to various other online resources, such as color photos of the bud development stages, 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). 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. 3).



A pesticide search returns a series of profiles of all the NY-registered products fitting the specified pest species and efficacy rating (Fig. 4). 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.



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

All of the information presented is already 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).

The website uses DD information based on either historical records or user-entered biofix data, and includes: the start, peak, or progress of the oviposition or egg hatch period (for CM, OBLR, OFM, and STLM); the start, peak or end of the pest's 1st, 2nd, etc., flight (for AM, CM, OBLR, OFM, and STLM); the first occurrence of adult or larval feeding, foliar or fruit damage, or mines (for OBLR and STLM).

We are continuing our efforts to refine and improve the accuracy of the website's pest predictions, and expand the range of sites from which weather data is able to be collected. During this process, we encourage everyone in the apple industry to check this website for themselves throughout the growing season, to see how well it forecasts pest events in specific areas of the state. We appreciate hearing of any anomalies or irregular predictions generated by using the local data to chart pest or disease development in your growing

area, and hope to end up with a pest management tool that is useful and accurate for advising apple growers about what's going on in their orchards in Real-Time.

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