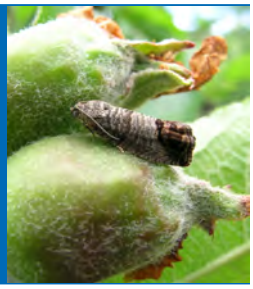
Section 9

Web Resources

WASHINGTON STATE UNIVERSITY

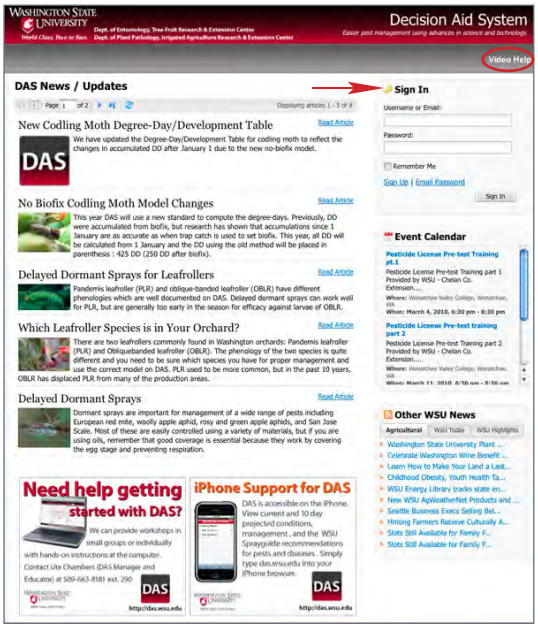
Apple Pest Management Transition Project

Tree Fruit Research & Extension Center



Web Resources: WSU-Decision Aid System (DAS) 4.0

Front Page



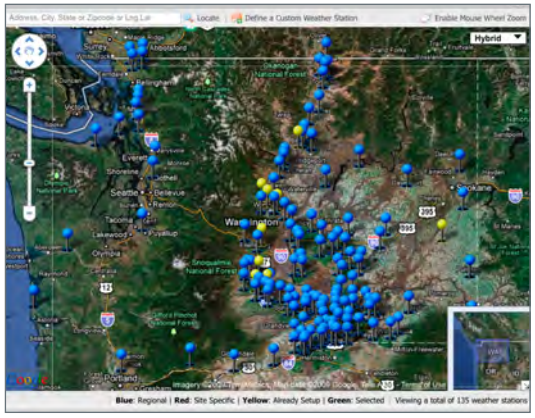
The redesigned DAS front page (http://das.wsu.edu) provides IPM information of general interest, as well as seasonal-specific issues that will be updated frequently. The front page now offers two short videos that briefly describe DAS and explain how to register and login. These videos can be accessed by clicking the link "Video Help" at the top right (circled in red).

The new "Sign In" field (red arrow) on this page makes it easier to register and login. Below that is a newly added Event Calendar and WSU News box are intended to keep you informed about other events and topics.

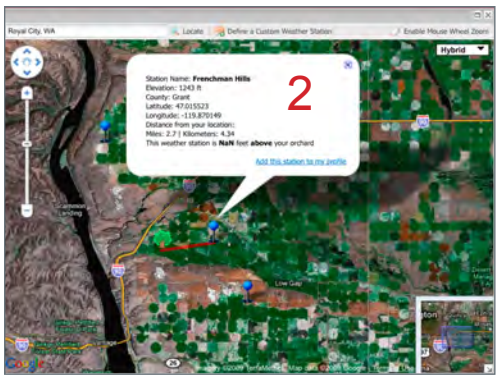
Profile Page

When you log on, you will be directed to your profile page where you setup and edit weather stations and enter information about your orchard (crop, pest models, management). From here you can view your models (sorted by model or station) or access other features from the main menu bar at the top.

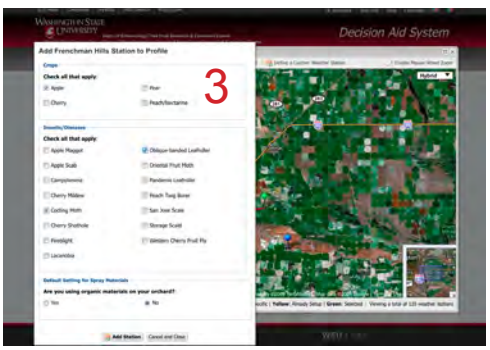
Adding and Editing a Station



On the profile page, click on the "Add Station" button and the Google Maps interface comes up. Type the name or zip code of the city closest by in the box in the top left and the map will show (**1**) a close up of the area with AWN weather stations marked in different colors (legend at the bottom of the page). Move the tree icon in the map to your orchard. You can switch the type of map using the buttons at the top right in both of these images. You can then click on any AWN weather station nearby which opens a box that shows distance and elevation differences between your orchard and that station (**2**). If you want to use the weather station, click the "Select This Station" button in the information box. In the new window that opens up (**3**), fill out which crops, models and management options (organic or conventional) apply.



To edit existing stations, first select that station from your profile page, then choose "Edit Station". This opens the data window where changes regarding crop, model and management option can be made.



Workshops: **On request, we can provide workshops, in small groups or individually, on how to use DAS.**

Contact: **Ute Chamber - DAS Manager/Educator, uchambers@wsu.edu or 509-663-8181 x290**

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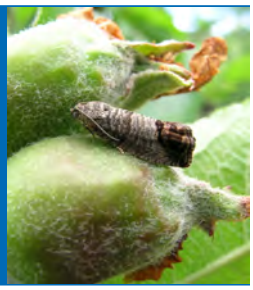
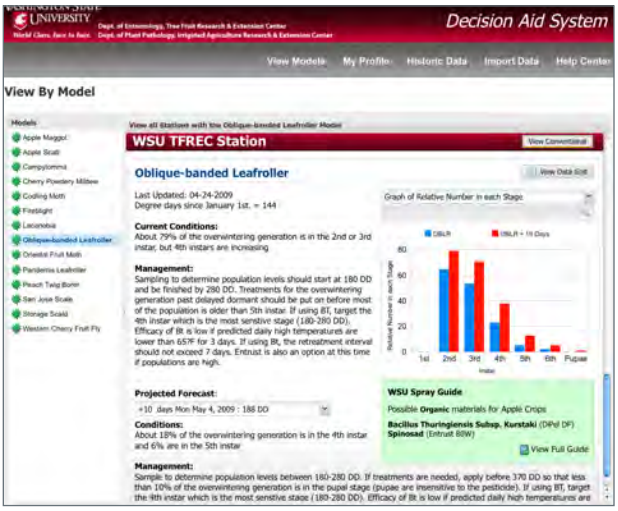
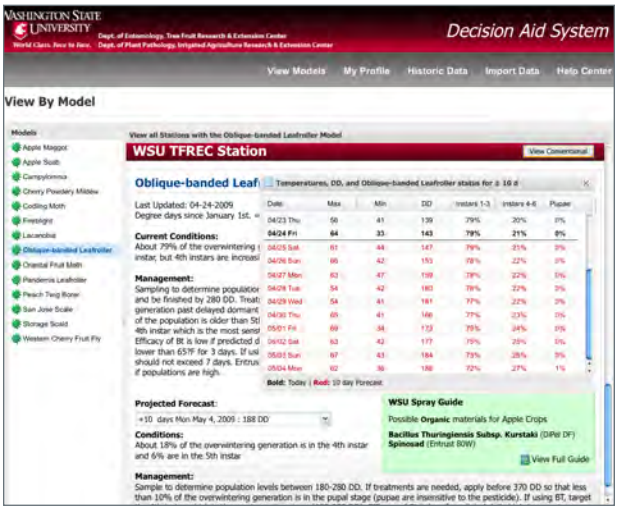


View Models Screen





The "View Models" menu allows you to choose to view the model output by station (all models from a given site displayed sequentially), or by model (a particular model at each of the sites in your profile), or by group (for example, all stations you visit at the same time regularly). The screen shot shows the view by model – on the left, you select which model output you want to see displayed on the right. The model output gives you the current degree days (DD) accumulated, the current pest condition and recommended management options, and, underneath, the projected pest condition and projected management recommendations. On the right, you can find the current and projected pest development plotted in a graph as well as the mini-WSU spray guide underneath. You can scroll down to see the complete message and the model output for other sites.

Features:

- The graphs here can be changed to show the relative number versus DD or calendar date; cumulative percent through a stage on calendar date or DD.
- You can change the projected forecast by using the menu; any time from 1-10 days is possible.
- You can switch between viewing the organic and conventional management recommendations (including the mini-spray guide) by clicking the "View Organic/ View Conventional" button.
- By clicking on the "View Full Guide" button in the mini-spray guide you can go to the full WSU Spray Guide.

Data Grid and Weather Forecasts

The data grid shows the graph information in a table. By clicking on the "View Data Grid" button above the graph, the data grid is revealed. The grid shows the data for the last 10 days (in black) with today's data in bold and the projected data (using weather forecasts) out to 10 days in the future (in red). This box scrolls using the bar on the right and below it.

The data shown by the data grid varies depending on the model. In the oblique-banded leafroller (OBLR) model, for example, it shows the date, maximum and minimum temperature, degree days (DD), and the percentage of the population found in instars 1-3, 4-6, and pupal stage. In other models, the data grid will show different things. For example, the fireblight model will show the date, the fireblight hours, risk index, rainfall, predicted probability of rainfall, and predicted amount.

An important use of this function is to get a quick forecast of temperatures. For example, as stated in the management section for OBLR, efficacy of *Bt* is low if daily high temperatures are lower than 65 °F. By choosing to see the data grid, you can look at the maximum temperatures and decide if *Bt* use would be appropriate.

Models Currently Available

Apple maggot, Campylomma bug, Codling moth, Lacanobia fruit worm, Oblique-banded leafroller, Oriental fruit moth, Pandemis leafroller, Peach twig borer, San Jose scale, Western cherry fruit fly;
Apple scab, Cherry powdery mildew, Fireblight; Storage scald.

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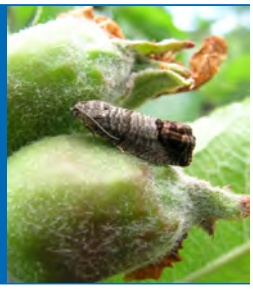


WSU Spray Guide/Pesticide Database

The full WSU Spray Guide can be accessed by clicking on the "View Full Guide" button in the mini spray guide in the model output. The full spray guide displays all recommended pesticides for the particular pest or disease you were viewing in the model output for the chosen crop at the current time of the season. At any time you can switch to a different pest, crop or treatment period in the drop down menus on the top.

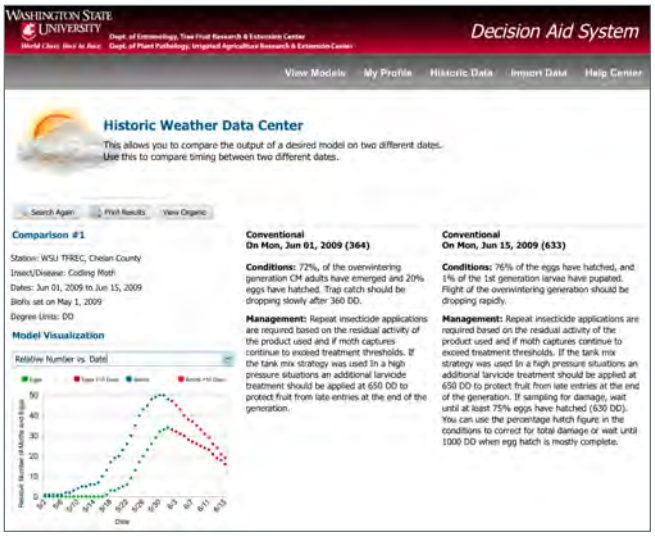
In the first category, general information of the pesticide is provided, including the trade name, class, resistance class, bee toxicity, REI, PHI, rate, and organic or conventional practice. Information of the resistance class helps you in resistance management by alternating pesticides with different modes of action.

The second category shows the level of efficacy (high or moderate) of each pesticide against major pests. Pesticides can show high and moderate efficacy against the same pest when trials resulted in variable control success. The efficacy table can help you control pests that occur and can be treated at the same time.

The third category provides information of negative effects (L = low, M = medium, H = high, none = no impacts known, ? = no data on effects available) of each pesticide on natural enemies, including predators and parasitoids of spider mites and aphids. In the fourth category, you can find more notes and comments of interest.

Historic Weather Data Center

This feature allows you to look back at the season and see differences in model predictions between different dates. For example, suppose you wanted the spray for codling moth to go on 1 June, but the sprayer broke and you were not able to get it on until 17 June, and now you want to see if that delay caused the damage you see in your orchard. Go to the Historic Data section, choose the location and model you want, then choose the two dates you are interested in. You can set up any four combinations like this that could have the same or different weather source, models or dates. Choose the "Submit" button on the bottom and the model output appears. (Tip: The two chosen dates per comparison should not be more than 1 month apart to prevent computing errors and endless waiting. If you want to compare different years, choose short periods for in each year in a separate comparison.)



The comparison output provides information that WSU-DAS would normally provide on those dates and displays graphic output for the chosen dates (this can be customized as in other screens with the drop down menu). You can switch between organic and conventional recommendations using the button just above the comparison title.

Your Feedback Is Welcome

We welcome comments and suggestions on how to further improve WSU-DAS.

Contact: **Ute Chambers – DAS Manager/Educator uchambers@wsu.edu or 509-663-8181 ext. 290).**

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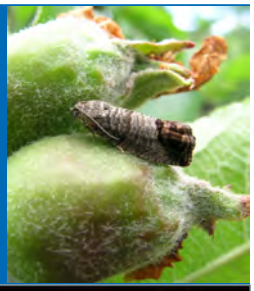
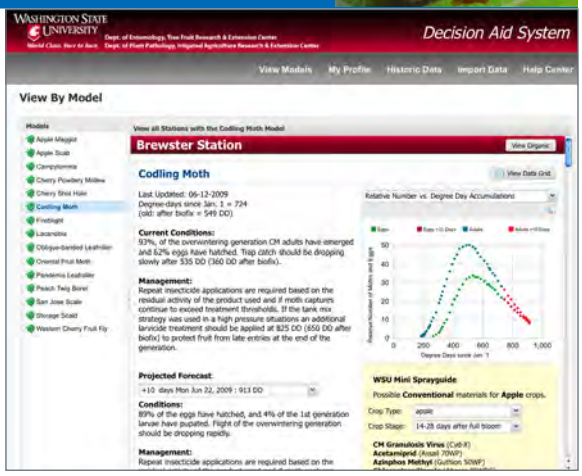
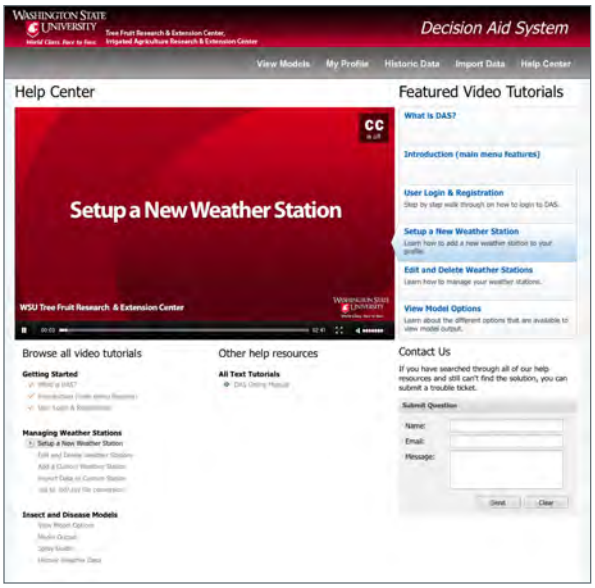


No-Biofix Codling Moth Model

Our research has shown that first codling moth emergence occurs on average at 175 DD after January 1 and that using a biofix does not increase the accuracy of model predictions when compared to actual adult flight and egg hatch. Therefore, we removed the biofix from the model. Beginning in 2010, DD accumulation started January 1 and will continue throughout the season. This means that 175 DD will be added to all codling moth events (e.g. the new 425 DD is equal to "250 DD after biofix"). New DD and old "DD after biofix" will be displayed in the codling moth model output and management recommendations to help the transition.



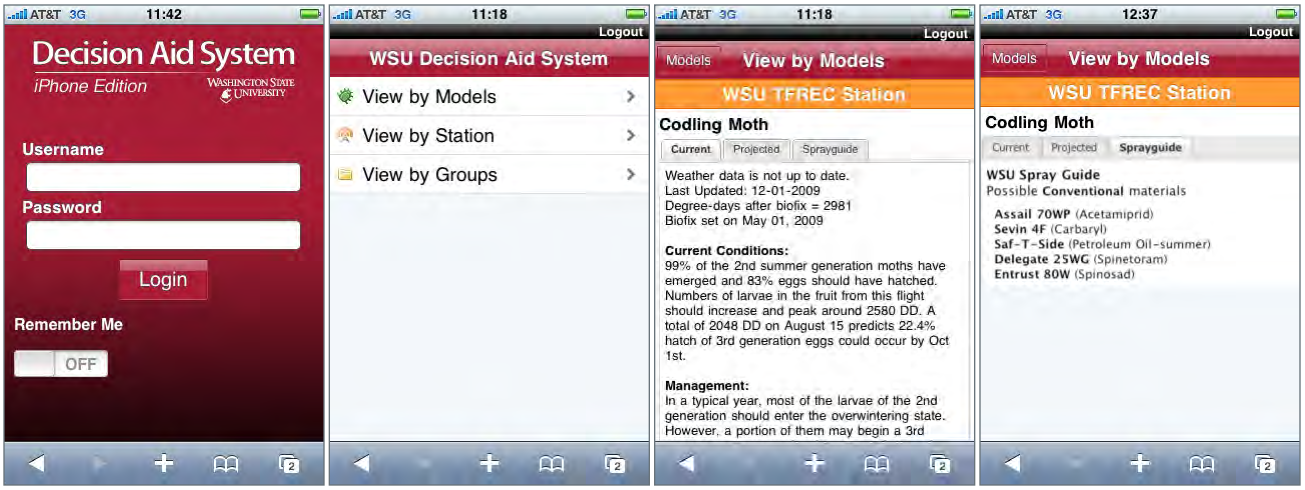


Help Center

The DAS Help Center provides an online user manual as well as short (between 1 and 4 minutes long), narrated video tutorials. These videos demonstrate the various features of WSU–DAS step by step so that you can see the full range of features available. If both help resources do not offer the solution to a problem, you can submit a "trouble ticket" (question or comment) through the Help Center. We will also have a frequently asked questions (FAQ) section that will have answers as we receive questions from users.

DAS on iPhone

DAS is now accessible on iPhones from anywhere that you have a mobile signal. As on a computer, model output on the iPhone can be viewed by model or station and includes current and projected pest conditions and management recommendations. Currently, the iPhone-specific system has no graphs and only the mini-WSU Spray Guide is available, but updates regarding these two items are under development.



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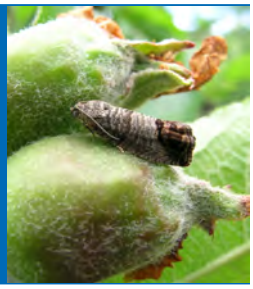


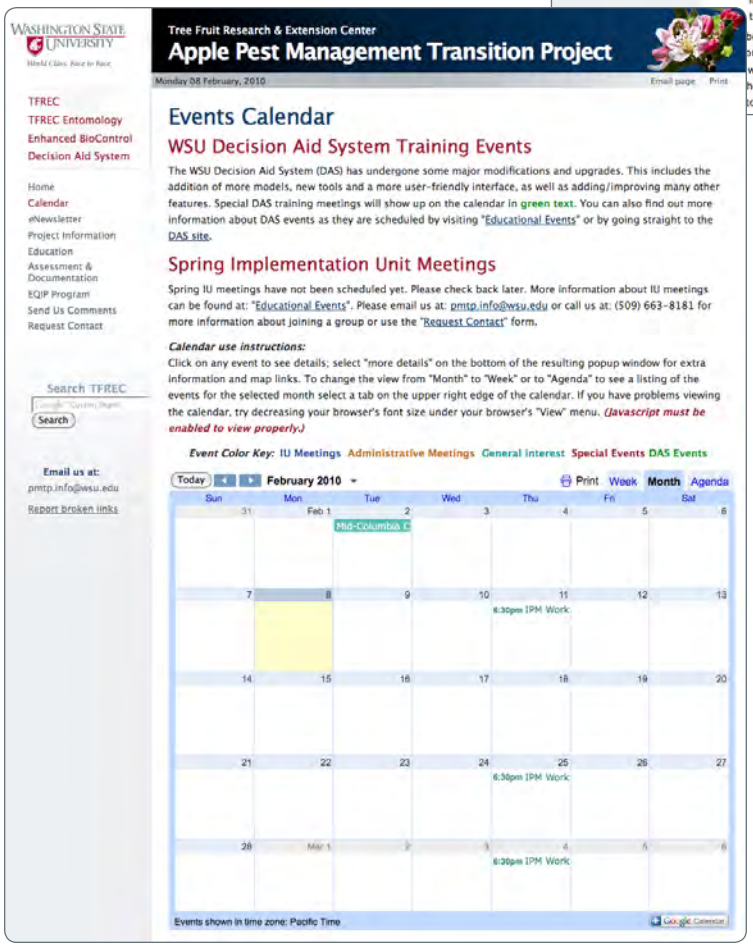
The best place to get the most up-to-date information about the Apple Pest Management Transition Project is from its own web site located at:

http://pmtp.wsu.edu

Here are just a few web site highlights:

Home page

The Home page prominently displays the project's Mission and Goals statement and provides the major links to the rest of the site on the left side as well as a list of Special Interest links on the right for other useful IPM and industry related sites.



Calendar / Events page

The Calendar and Events page can be accessed from any PMTP page using the link found on the left hand column. This page highlights major events related to IPM training or special interest to the industry including workshops, training sessions, and field days. More information about the highlighted events can be found by using the links within the summary text provided. The page also contains a live Google Calendar showing all scheduled events. Clicking on a specific event opens a detail window giving more information such as location, times, contact person and a map link. Events have been categorized by type and color coded to help you identify events of interest to you.

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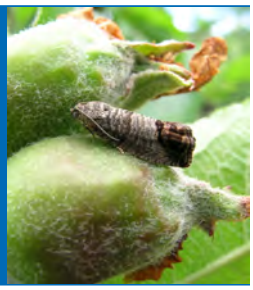
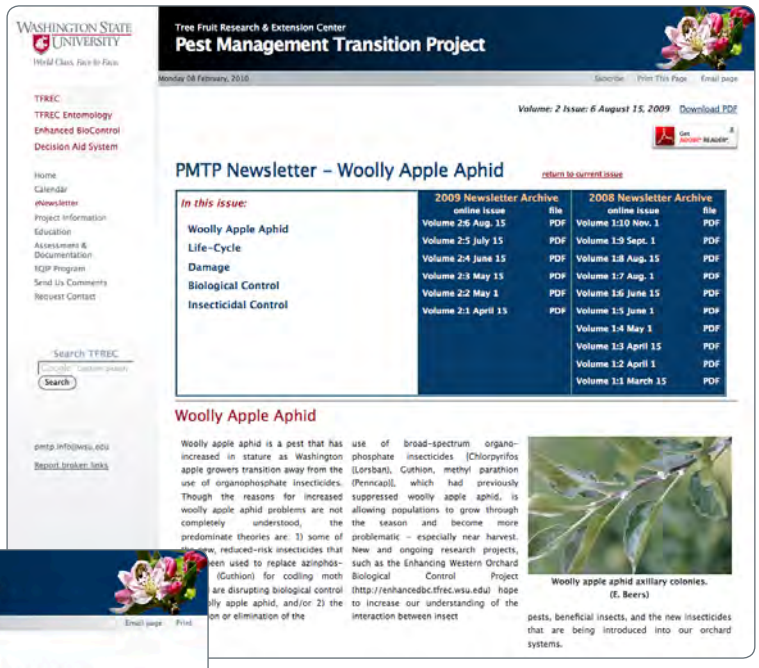
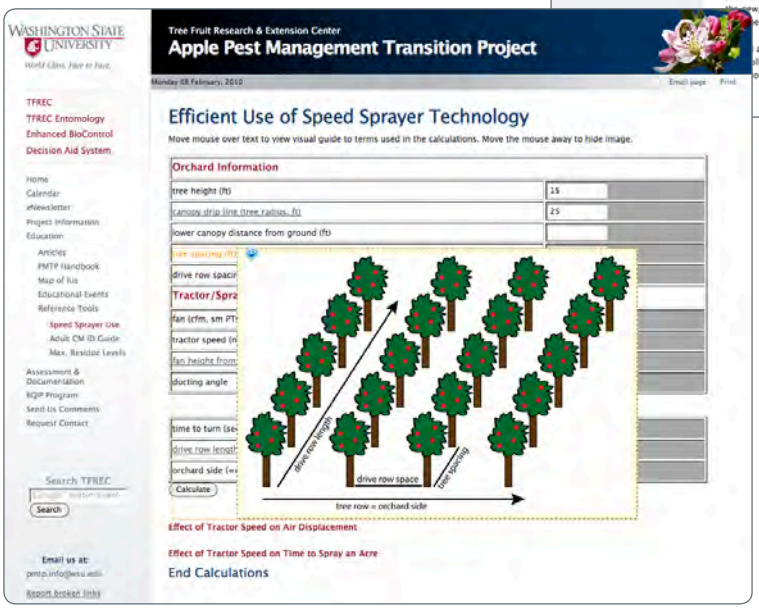


eNewsletter

The Apple Pest Management Transition Project produces newsletters throughout the growing season touching on timely subjects to help with your current orchard issues. The *e*Newsletter is posted online and is available for download as a PDF. You may subscribe to the mailing list to be notified when a new issues comes out. To do this click on "Subscribe" at the top of the page. All back issues of the *e*Newsletter are archived and available to read online or to download.





Reference Tools

The PMTP web site offers many helpful features and reference tools to assist you with your Apple IPM management needs. One of these tools includes an interactive application which allows you to determine the most efficient way to use your orchard sprayer. Here you enter values that match your conditions. If you are unsure what measurement to enter, move your mouse over the description and a helpful diagram pops up to show you. Once all your data is entered, graphs will be generated showing the relationship between different speeds and spray coverage.

Other site features include:

- **Project information** - such as background, project oversite and timelines;
- **Educational items** - such as articles, the handbook (downloadable), event details, reference tools (Codling moth identification guide, speed sprayer use, MRL info.);
- **Assessment and Documentation** - where all the project reports are found, including information about the grower and consultant surveys;
- **Contact Forms** - contact us about joining an Implementation Unit, subscribing to the mailing list, or send us your comments. ***New items are added frequently - so keep checking!***

For more information about this project visit: http://pmtp.wsu.edu *or email us at:* pmtp.info@wsu.edu