UF UNIVERSITY of FLORIDA | IFAS EXTENSION

Citrus Notes

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Inside this Issue:

Dear Growers,

When it rains it pours, please read carefully the dates and locations of the numerous educational opportunities we have listed in this issue. Citrus Expo in mid-August, the 4th annual Citrus Spot Burner program offer through the Florida Department of Agriculture and Consumers Service's, Division of Forestry in late August. In addition there are course listings for UF classes to be held at the Citrus Research and Education Center in Lake Alfred. Then we begin our grower meetings in September kicking off with the Citrus Roundtable at Seffner.

I have included an article on the effectiveness of insecticides on psyllid suppression. There are also some updates on label changes and materials in the pesticide news and information section.

Enjoy the issue,

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2009 Citrus Expo "Using Today's Innovations Toward Future Success"

The 2009 Citrus Expo will be held at the Lee Civic Center in Ft. Myers from August 19 - 20, 2009. Attached (email version only) you will find the program brochure with information on the program, accommodations and registration. For online registration go to the following: http://www.citrusexpo.net/ .

4th Annual Citrus Spot Burner Location Workshop

The Division of Forestry is in the 4th year of the new citrus spot location program designed to benefit grove managers. The program titled, Citrus Spot Location Program, is intended to aid grove managers by allowing certified citrus pile burns during high fire occurrence days.

The Division of Forestry's Lakeland District will conduct a two hour workshop detailing the program at the Stuart Building, in Bartow (1700 US Hwy 17 South) at 9:00 a.m., August 26, 2009. In order to take advantage of this program you must attend the workshop. The workshop will also cover smoke management practices, recent changes in burning rules and regulations, and a discussion of owner/burner concerns. A site inspection for certifying the burn sites can be arranged after the meeting.

The following is a review of the requirements of the Program:

1. An application, filled out completely for each grove.
2. Map of grove with Section, Township and Range supplied to D.O.F. on 8½ x 11" paper (several maps can be used to cover larger areas)
3. All pre-approved burn sites must be interior grove and at least 400' from any wooded areas and identified with Latitude and Longitude coordinates.
4. Once a year, attend a workshop on smoke management practices, burning rules and regulations, and the citrus spot burn program.

The Division encourages your participation in the program. The benefit to you, the grove owner, is it provides you the opportunity to burn on days when you otherwise may not be able to obtain a burn authorization because of high fire weather conditions. Remember, you must attend this once a year workshop in order to qualify. Please feel free to call, should you have any questions.

Please Respond to: Florida Division of Forestry, 5745 S. Florida Ave, Lakeland, Florida 33813, phone (863) 648-3163.

Packinghouse Day & Indian River Postharvest Workshop

The 2009 Citrus Packinghouse Day will be held on Thursday, August 27, 2009, at the Citrus Research and Education Center, Lake Alfred, Florida. The Indian River Postharvest Workshop will be held on Friday, August 28, 2009, at the Indian River Research and Education Center, Ft. Pierce, Florida. See attached flyer or you can contact Mark Ritenour at 772-468-3922, ext.

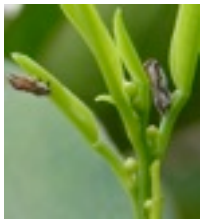
167 mritenour@ifas.ufl.edu or visit http://postharvest.ifas.ufl.edu.

Fall 2009 Classes Available at UF/ IFAS CREC

There will be 2 classes offered this fall at the Citrus Research and Education Center in Lake Alfred. Attached with this newsletter is additional information and course descriptions for the classes.

Hillsborough County Citrus Roundtables to Start in September

Our Citrus Roundtable's will be starting up again in Seffner at the Hillsborough County Cooperative Extension Service Office on September 2, 2009. The Roundtable begins at 10:00 a.m. in the large conference room at 5339 S. CR 579 in Seffner. We will include more program details in the next issue of Citrus Notes.



The Influence of Post-treatment Temperature on the Activity of Commonly used Insecticides for Asian Psyllid Suppression

Current research has provided additional information on the potential for increases in insecticidal activity of many pesticides labelled for psyllid suppression in Florida citrus. The study looked at insecticides in different mode of action classes to see what effect, if any, post treatment temperature had on the toxicity of the insecticides to the Asian citrus psyllid. This information does not make comparisons of efficacy between the tested insecticides but, it does demonstrate that changes in efficiency of these insecticides can be related to the post treatment temperature. This change in efficiency is measured by the application of the same insecticide at three different post treatment temperature regimes and thus comparisons cannot be made between different insecticides, only the same tested insecticide at the three different temperatures. These studies were also conducted in the lab but, antidotal observations indicate that this trend does appear apparent in field observations.

The insecticides were applied and then held at three different post treatment air temperatures (63, 81 and 99^{0}F). The organophosphate insecticides tested were chlorpyrifos and dimethoate. Both of these insecticides are recommended for psyllid control in the 2009 Florida Citrus Spray Guide. The toxicity of all the tested insecticides were measured by determining the LC_{50} or the lethal concentration of insecticide needed to kill 50% of the psyllid population. The study found that there was a 3.76 fold increase in the toxicity of chlorpyrifos when applied with the post treatment air temperature held at 81^{0}F versus 63^{0}F. The toxicity increased another 2.80 times when the post treatment air temperature was raised from 81^{0}F to 99^{0}F. The total increase in chlorpyrifos toxicity was 10.50 times higher at 99^{0}F than at 63^{0}F. In the dimethoate study the increase in toxicity was 1.36 times higher going from 63^{0}F to 81^{0}F and another 4.47 fold increase going from 81^{0}F to 99^{0}F. The overall increase in dimethoate toxicity was 6.12 times higher going from the 63^{0}F to 99^{0}F post treatment air temperature.

Carbaryl was another tested insecticide recommended in the 2009 Florida Citrus Spray

Guide and was the carbamate used in this study. Carbaryl was found to be 2.62 times more toxic at 81^{0}F than at 63^{0}F. In raising the post treatment air temperature from 81^{0}F to 99^{0}F, there was a 1.59 fold increase in the toxicity of carbaryl. Overall carbaryl was found to be 4.18 times more toxic at 99^{0}F than at 63^{0}F.

Abamectin was another pesticide that was used in the study. Although abamectin is not currently recommended for psyllid control in the 2009 Florida Citrus Spray Guide, it has been shown to have psyllid activity, especially at the higher labeled rates. At the post treatment air temperature of 81^{0}F, abamectin was 2.34 times more toxic than at the 63^{0}F post treatment air temperature. The post treatment air temperature of 99^{0}F was 7.64 times more toxic than the 81^{0}F treatment. Going from the post treatment air temperature of 63^{0}F to one at 99^{0}F there was a 17.91 fold increase in toxicity.

In the pyrethroid class of insecticides 4 materials were tested with 2 currently recommended in the 2009 Citrus Spray Guide. The recommended insecticides were Zeta-Cypermethrin or Mustang® and fenpropathrin or Danitol®. Both of these insecticides were more toxic at the 63^{0}F than at either the 81^{0}F or 99^{0}F post treatment air temperatures. This response was the opposite of the previously discussed insecticides. Zeta-Cypermethrin was 1.8 times more toxic at the 63^{0}F than at 81^{0}F and 5.33 more toxic at the 81^{0}F than at 99^{0}F post treatment air temperatures. The overall toxicity increased 9.6 times at 63^{0}F compared to the 99^{0}F post treatment air temperature. The same response was seen with fenpropathrin at 63^{0}F compared to either of the higher post treatment air temperatures. Fenpropathrin was 38.7 times more toxic at 63^{0}F than at 99^{0}F and 30 times more toxic at 63^{0}F than at 81^{0}F. At 81^{0}F fenpropathrin was only 1.29 times more toxic than at the 99^{0}F post treatment air temperature.

The final test involved the neonicotinoid class of insecticides. Although 3 insecticides were tested, only one is currently recommended in the 2009 Florida Citrus Spray Guide. Provado® (foliar applied imidacloprid) toxicity varied between the 3 post treatment air temperatures and did not necessarily demonstrate a clear response. Nevertheless, imidacloprid was 1.12 times more toxic at 99^{0}F than at 63^{0}F. The toxicity increased 3.44 times when the post treatment air temperature was 63^{0}F compared to 81^{0}F. It increased again 3.87 times when the post treatment air temperature was raised to 99^{0}F compared to the 81^{0}F treatment. Foliar applied imidacloprid was more toxic at 63^{0}F and 99^{0}F post treatment air temperatures than at 81^{0}F.

It may be easier to visualize the information in the following table. Please read the footnotes as related to the methodology for determining psyllid control and the limitation of between insecticide comparisons.

Post Treatment Air Temperatures and Insecticidal Toxicity

Reported as Lethal Concentration LC_{50} (mg[AI]/liter) of Insecticide[1]

Insecticide	Trade Name®	63^0 F	81^0 F	99^0 F
Chlorpyrifos[2]	Lorsban 4E	**4.22**	**1.12**	**0.40**
Dimethoate	Dimate 4EC	**4.78**	**3.49**	**0.78**
Carbaryl	Sevin XLR Plus	**49.5**	**18.8**	**11.82**
Abamectin	Agri-Mek 0.15EC	**8.60**	**3.67**	**0.48**
Zeta-Cypermethrin	Mustang	**0.05**	**0.09**	**0.48**
Fenpropthrin	Danitol 2.4EC	**0.01**	**0.24**	**0.33**
Imidacloprid	Provado 1.6F	**0.09**	**0.31**	**0.08**

[1]Lower values indicate less active ingredient to kill 50% of the test psyllid populations (higher toxicity)

[2]Valid comparisons can only be may across rows

In conclusion, based on these laboratory tests, the optimal time for using pyrethroid insecticides for Asian citrus psyllid control is likely the cooler winter months in Florida. However, optimal psyllid kill with organophosphates and carbamates will likely occur during the hotter summer months. Fortunately, neonicotinoids appear to be, for the most part, optimal at both low and high temperature extremes.

Pesticide News and Information

Micromite® 80WGS Now Labeled for Low Volume Application in Florida Citrus

On June 19, 2009, the Florida Department of Agriculture and Consumer Services (FDACS) approved the Special Local Needs registration EPA SLN FL-090010 for Micromite® 80WGS (diflubenzuron) use in citrus at low volume to manage Asian citrus psyllid. (Chemtura Corp. email, 7/1/09).

Danitol® 2.4 EC Experimental Use Label for Aerial Applications

On June 18, 2009, the FDACS approved Valent U.S.A. Corporation's experimental use permit (EUP) for use of Danitol® 2.4 EC (fenpropathrin) insecticide for evaluation of the effectiveness of low volume aerial application for Asian citrus psyllid control. The permit is EUP No. FL09-EUP-02. (FDACS letter of 7/2/09).

Mustang® Experimental Use Label for Aerial Applications

On June 18, 2009, the FDACS approved FMC's experimental use permit (EUP) for use of Mustang® (zeta-cypermethrin) insecticide for evaluation of the effectiveness of low volume aerial application for Asian citrus psyllid control. The permit is EUP No. FL09-EUP-03. (FDACS letter of 7/2/09).

Temik® is Now Registered on all Citrus

Temik is now registered on the entire citrus crop grouping. Please contact your distributor for the new label. This new label will be on all Temik® packaged after September 2009. (Bayer CropScience email, 7/16/09).

Epi-Mek® 0.15EC Miticide/Insecticide

Effective immediately, Epi-Mek® 0.15EC Miticide/Insecticide has been approved for aerial application in citrus for the control of citrus leafminer. Please see your distributor for copies of the updated section 3 label, as well as copies of the supplemental label to be used on existing inventories of Epi-Mek that do not bare the updated label. (Syngenta Crop Protection email, 7/20/09).

Platinum® 75SG Insecticide now Available in Florida

Effective immediately Platinum 75SG is now legal for use in Florida citrus. The material is the second generation neonicotinoid insecticide Thiamethoxam. (Syngenta Crop Protection email, 7/28/09).