Texas AgriLife Extension

Texas PD Notes

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Texas Pierce's Disease Research and Education Program

Do Neo-nicotinoid Insecticides Really Work?

Over the past few years, more and more growers of PD susceptible wine grape varieties have relied on neo-nicotinoid insecticides to serve as the first line of defense against *Xylella* vectors. Imidacloprid, first labeled in vineyards by Bayer Chemical (Admire) has been applied in Texas for a number of years now, but we are just now seeing empirical data from the statewide trapping program that suggests that sharpshooter numbers do indeed decrease over time in vineyards that are on an annual application cycle. So just how does this product work?

First, neo-nicotinoids are considered to be a feeding deterrent. Grapevines with systemic chemical activity are less attractive to sharpshooters than non-treated grapevines. Second, if feeding occurs, chemical activity stops feeding behavior in sharpshooters, they then become disoriented, and ultimately die. This is extremely important because we now believe the greatest losses within vineyards occur when a sharpshooter enters a vineyard, acquires the bacterium, then moves on to another vine to feed. Epidemiological data now confirms that infection spreads much more rapidly up and down a row as opposed to across rows. When you observe sharpshooters in vineyards, especially larger species such as *Homalodisca* and *Oncomatopia*, they freely run or fly along canes among vines within the trellis. Although grapevines are not the favorite oviposition host for sharpshooters, neo-nicotinoid insecticides do indeed have very high activity against newly emerging nymphs. This activity against hatching egg masses is also why they are very useful in treating preferred oviposition hosts such as crepe myrtle.

Although there are foliar formulations of imidacloprid, the best and longest activity is gained through the use of injectable formulations through the drip system. Under ideal conditions, uptake is complete with 24-48 hours. A full rate application typically results in year-round levels of systemic activity sufficient for sharpshooter

Temecula California Replant Site
Foreground– Vineyard Not Treated With Imidacloprid
Background– Replant Vineyard Treated With Imidacloprid

TEXAS PD NOTES IS PRODUCED AND EDITED BY:

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Additional Articles Contributed by Members of the Texas Pierce's Disease Research and Education Program

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Do Neo-nicotinoid Insecticides Really Work? -cont.

control. Typical field results do indeed suggest that there are at times problems in uptake or persistence. At last year's symposium, Dr. Nick Toscano reported on his work with two other products in this same class of chemistry- thiamethoxam (Platinum) and dinotefuran (Venom).

On some soil types and under some soil moisture conditions, uptake and longevity of imidacloprid may vary and might not be adequate. These other two chemistries have different soil behavioral properties and may be more appropriate in some cases. This past year, a specialty crop initiative was submitted to the USDA that in part, proposed field work to examine these differences. Unfortunately this proposal was not funded, but Dr. Forrest Mitchell is leading an effort to once again explore the specifics of product viability. At this coming PD Symposium, Dr. Mitchell will review current labeled systemic products and recap the current body of knowledge on practical use. A must- hear presentation for growers of susceptible varieties across the state.

Injection Devices Range from Simple to Complex, But Both are Capable of Precise Applications with Proper Calibration

Imidacloprid Application Recommendations May Vary Across the State

A common question from growers across the state; "So, if Neo-nicotinoid products are the first line of defense against sharpshooters, how should we apply them?" The answer may be different for different growing regions.

In the hill country, north central and northeast Texas, we now have several years of trap catch data and a good idea of when insects are carrying *Xylella*. Unlike California vineyards, these areas of Texas see little sharpshooter activity until the middle or end of May. Even then, the great majority of sharpshooters have not yet acquired the pathogen from the environment.

In these regions, the general recommendation is that imidacloprid be applied from the last week of April through the middle of May. Applications are most effective when vines are adequately supplied with water. Under continued drought, growers should pre-irrigate for a period of two weeks prior to application. Split applications of imidacloprid are recommended by USDA and California researchers to maximize product longevity within vines. If a split application is to be made, growers should make the first application in mid-April followed by a second application thirty days later.

High Plains growers are currently at a disadvantage because effective sharpshooter trapping has been underway for less than a year and we do not yet understand species seasonality or sharpshooter infection status throughout the year. High Plains growers choosing to include imidacloprid as a method of sharpshooter control may want to consider application dates earlier than for other regions of the state. To err on the side of safety, applications are being recommended at three to five inch shoot growth (~mid April).

The Bayer product, Admire Pro® is labeled at 7-14 ounces per acre per year. For first and second leaf vines, lower labeled rates are generally considered sufficient. For third leaf and older vines, full rates are highly recommended.

In addition to the Bayer product, at least three formulations of generic imidacloprid products are available and labeled for vineyard application. Widow® (21.4%) Loveland chemical product, Alias 2F® (21.4%) and Alias 4F® (42.3%) by Mana Chemical Company may offer price competitive alternatives.

At the Fourth Annual Texas PD Symposium, Dr. Guy Fipps gave a presentation on the technical aspects of injecting products through the drip system. That presentation is still available at: http://gfipps.tamu.edu/powerpoints/GrapeGrowers.ppt

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2009 Texas PD Research Symposium Slated for Thursday, April 16th at the Thurman Mansion at the Salt Lick, Driftwood, Texas

Plans are now being finalized for the upcoming research symposium in mid-April. Once again, the Salt Lick, has graciously agreed to host this event, our Sixth Annual Texas PD Symposium.

Here are the Details

When: Thursday, April 16th, 2009, 8:30 am to 5:30 pm.
Where: Thurman Mansion at the Salt Lick, Driftwood, TX

Registration this year is $40 (until April 10th) and will include morning refreshments, a first-class BBQ lunch from the Salt Lick's own pits and a wine reception following the event. Attendance will be limited to 100, including speakers, so be sure to register while there is still space available. The 2009 Texas PD Research symposium will feature a top-notch group of scientists with relevant findings that have a practical application in your vineyard operation. This year our featured keynote speaker is **Dr. Don Hopkins, Plant Pathologist from the University of Florida.** If you search the literature from the last two years on Pierce's Disease, two names remain prominent among authors- Sandy Purcell and Don Hopkins. Don has been working on PD his whole career and leads a program with very promising potential. Don has discovered a mildly virulent strain of Xylella in mulberry that appears to protect grapevines from Pierce's disease. Don will be in Texas mid-April to help us establish Texas research plots with this bacterial strain and will review his work at this year's symposium. We are all extremely excited about the potential practical application for commercial grape growers in Texas.

Dr. Hopkins Keynote Speech is Entitled: **Cross Protection of Grapevines Using a Mildly Virulent Strain of *Xylella fastidiosa***

Other Symposium Presentations & Speakers Include:

*Pierce's Disease 101: A Primer for New and Prospective Growers- Jim Kamas
*Practical Management of Supplemental Hosts of Xylella- Mark Black
*Know Your Enemy: Vector Identification & Ecology- Jacy Lewis
*The Texas Pierce's Disease Program- A Six Year Perspective- Lisa Morano
*California and Political Update- Beth Stone-Smith and Bob Wynn
*Using Neo-nicotinoid Products- Material Selection, Timing, Persistence and Economics- Forrest Mitchell
*Question & Answer Session

♦Wine Reception to Follow♦

IMPORTANT 2009 REGISTRATION CHANGES

Three Ways to Register

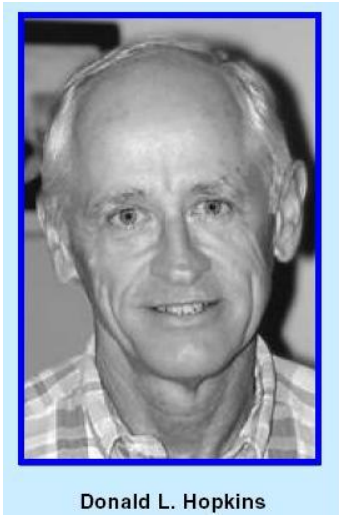
On Line: http://agrilifevents.tamu.edu/events/details.cfm?RegistrationID=374

By Fax: 979.862.4511

By Phone: 979.845.2604

You Must Pre-register for This Event To Have a Lunch!

For More Information, Contact the Fredericksburg Extension Office (Becky) at 830.997.7047



Donald L. Hopkins

2009 Texas PD Research Symposium Keynote Speaker
Dr. Don Hopkins
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