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The Newsletter about Integrated Pest Management for the El Paso Valley

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Announcements

- **Section 18 Label for Topguard (flutriafol):** In the previous newsletter, I presented some inaccurate information about the Section 18 label exemption for the use of Topguard (flutriafol), at planting, to control cotton root rot caused by the fungus *Phymatotrichum omnivorum* in Texas. I took the excerpt from an AgriLife West Region Ag Program Update (http://agrilife.org/agwest/2012/02/03/section-18-exemption-approved-for-topguard-fungicide/) without double checking it. The mistake read: "*There is a 180-day replant restriction of non-labeled crops.*" Instead, it should have said: "*There is a 365-day replant restriction of non-labeled crops. Treated fields can be rotated to sweet corn 180 days after application.*" I would like to thank Rick Minzenmayer, the Extension Agent in IPM in Runnels and Tom Green counties, for bringing this error to my attention. Rick and Dr. Tom Isakeit conducted the original research that resulted in this section 18 label. A copy of the approval letter sent by the US Environmental Protection Agency to the Texas Department of Agriculture can be found at http://tinyurl.com/7h862yy. This approval expires on June 30, 2012, but EPA has made the preliminary determination that an exemption for this use is eligible for the re-certification program. Dr. David Drake provided the following advice about applying this fungicide: Topguard can only be applied in cotton as a "T band" at planting. The rate is 16 to 32 fluid ounces per acre. The higher rate is the maximum per year and there is a limit of one application per year. It cannot be put through any irrigation system. Read carefully the fine print about careful placement. It needs a rain or irrigation to activate and will not work in dry conditions. Section 18 labels have the same user restrictions as restricted use pesticides.
- Mr. Jaime Bustamante, USDA-FSA El Paso County Executive Director, kindly provided us with the following information in regards to **reporting prevented planting acres to FSA**: "*Farmers have 15 days from the final planting date to report/certify prevented planting (PP) acres to the Farm Service Agency (FSA) Office. The final planting date for ELS cotton is April 30th, so PP acres must be reported starting May 1st through May 15th. The final planting date for Upland cotton is May 31st, so PP acres must be reported starting June 1st through June 15th. Because of staff shortages, the FSA Office is respectfully requesting farmers to call and make an appointment, phone: 915-857-0351 ext. 2.*"
- Cathy Klein, the County Extension Agent in Agriculture and Natural Resources for Hudspeth County is holding a training session on April 9 (from 1:30 to 4:30 PM) at the Fort Hancock Municipal Building titled: "**Cotton Workshop Soil Chemistry in Action, Cotton Root Rot, and Early Pests**" A total of three CEUs will be offered for Pesticide License Requirements. There will be a $10.00 registration fee. Drs. David Drake, Salvador Vitanza, and Jaime Iglesias will be the speakers. For more information call: (915) 369-2291. Email: hudspeth@ag.tamu.edu
- Cathy Klein has also organized a training session for April 10 (from 1:30 to 4:30 PM) in Dell City at the City Hall titled: "**Alfalfa and Chile Workshop: Soil Chemistry in Action, Early Pests-Pesticides, and Fertilizers**". Three CEUs will be offered. Registration fee: $10.00. Drs. David Drake, Salvador Vitanza, and Jaime Iglesias will be presenting. For more information call Cathy Klein: (915) 369-2291 or email: hudspeth@ag.tamu.edu

COTTON: Attending the concerns of El Paso cotton growers in regards to the severe restrictions of irrigation water this year, I asked Dr. Jane Dever, Associate Professor, Texas A&M Department of Soil and Crop Sciences, and Cotton Breeder in Lubbock, for her advice on **drought-tolerant cotton varieties**. This is what she replied:

"*There is not much specific research on "drought tolerant" cotton varieties. Annual reports for the Agricultural Complex for Advanced Research and Extension Systems (AG-CARES) – Texas AgriLife Research Technical Reports 10-1, 11-1, and 12-1, also accessible on the Lubbock Center website, have results from large-plot "water X variety" studies. Because these are large-plot trials, the number of varieties that can be evaluated is limited. In the very dry year of 2011, it was concluded that there were no differences between varieties and that concentrating available irrigation water in fewer acres would*

have been more profitable despite variety. This was not the case in previous years when water was not as limited as in 2011.

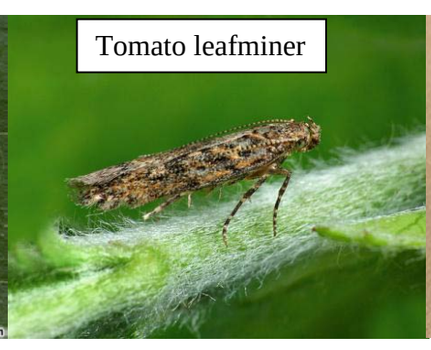
I conduct small plot variety trials in both irrigated (SDI, pivot, furrow) and dryland conditions. These reports (Technical Reports 09-2, 10-2, 11-2, 12-2) are also available on our website. Unfortunately, most of the trials are conducted on the Texas High Plains, so variety adaptability is an issue in addition to response to water stress. There is one furrow-irrigated location in Pecos, TX. Saline soils are as much a limitation as water availability. Some general conclusions can be drawn from multi-location trials over several years. At Pecos, better performance can be expected from varieties with a more aggressive growth habit and good seedling vigor. Four year averages indicate good performance with Phytogen Upland varieties such as PHY 375WRF and Stoneville varieties such as ST 4288 B2F and ST 5458 B2F, as compared to varieties more adapted to the High Plains with less aggressive growth habit such as FM 9058F or Phytogen Acala varieties such as PHY 755 WRF. More aggressive FiberMax varieties, such as FM 9170B2F have performed well in Pecos over time. In 2011, average test yield at Pecos was 904 lbs/acre and some of the varieties that performed well included DP 1044 B2RF, PHY 499 WRF, DP 164 B2RF, DP 1050 B2RF and FM 9170B2F. I also have my eye on a couple of experimental lines from Dr. Jinfa Zhang's breeding program at New Mexico State University that have done well in stressed conditions – NMSU 07N1295 and NMSU 07N1189. Dr. Zhang is conducting research to identify drought tolerant characteristics. There are some varieties that have performed well both in Pecos and over years in the dryland test at Lubbock. These include All-Tex Epic RF, FM 1740 B2F and ST 5458 B2RF. All-Tex Epic RF has been a fairly consistent performer in dryland conditions on the High Plains, but does not contain any insect resistance technology. For the far West, fiber quality and adaptation to desert climate with long growing season have been important; and if technology is important, consider the varieties available for the region. Identify good fiber quality varieties with technology that is necessary for a particular farming operation. With limited water, you might want to consider an earlier maturing variety with an aggressive growth habit. Watering full season varieties may require concentrating the water on fewer acres. Good seed quality/vigor for whatever variety chosen is essential."

Upland and Pima cotton variety trials: Monsanto (Deltapine), Bayer CropScience (FiberMax and Stoneville), and Dow AgroSciences (PhytoGen) have submitted 13 Upland and five Pima varieties to be evaluated in our cotton variety trials. I would like to thank these cotton seed companies and their Technical Representatives (Eric Best, Kenny Melton, and Scott Fuchs) and our Cooperators Harvey Hilley Jr., Ramon Tirres, and Keith Deputy for their continued support to the El Paso cotton variety trials. The upland test will be located in the Upper Valley and will include the following varieties: DP 1219 B2RF, DP 1252 B2RF, DP 1044 B2RF, FM 1740 B2F, FM 1944 GLB2, FM 2989 GLB2, FM 2484 B2F, FM 9170 B2F, ST 4288 B2F and ST 5288 B2F, PHY 375 WRF, PHY 499 WRF, and PHY 565 WRF. The Pima trial will be located in the Lower Valley and will evaluate: DP 340 Pima, DP 357 Pima, PHY 802 RF Pima, PHY 805 RF Pima, and possibly PHX (experimental) 8262 RF Pima. Additionally, Mr. Tirres and I will be evaluating several **cotton plant stand densities** to find out if savings in seed cost could be gained by sowing less seed without reducing yields or fiber quality.

Dr. Mark Muegge and I will be looking for a cotton field to conduct **research on stink bug damage and sampling methodologies**. Last year, we did not find enough stink bugs to justify this test. Please let us know if you happen to detect moderate to high stink bug levels in your cotton fields and are interested in working with us on this research project. We are also planning to evaluate selected insecticides for the control of **Lygus bugs** in cotton. Obviously, conducting this trial will depend on finding economically-damaging population levels of Lygus bugs.

Based on observations of nematode damage to cotton plants in our region during recent years, Dr. Jaime Iglesias has suggested conducting a demonstration of **nematode control in cotton** by incorporating aldicarb (Meymik 15 G), at planting, in fields which have been severely affected by nematodes in the past. Please let us know if you would like to participate in this project. As you might be aware, Meymik 15 G replaced the now defunct Temik on cotton, peanuts, sugar beets, dry beans, sweet potatoes, and soybeans to control certain nematodes, insects, and mites.

TOMATO, PEPPER: Dr. Charles Allen, Professor and AgriLife State IPM Coordinator, is leading a team of ten AgriLife IPM Extension Specialists and Agents to detect the presence of alien invasive insect pest species of solanaceous crops (chili pepper, bell pepper, potato, tomato, eggplant). These pests are not



known to occur in the U.S. yet, but are highly aggressive and mobile. Pests to be monitored include: the tomato leafminer, *Tuta absoluta*, Old world bollworm, *Helicoverpa armigera*; Egyptian cotton worm, *Spodoptera littoralis*; cotton cutworm, *Spodoptera litura*; fruit piercing moth, *Eudocima fullonia* and bacterial wilt, *Ralstonia solanacearum* (r3b2) which are other serious threats to US and Texas solanaceous crops. I will be monitoring and trapping in El Paso and Hudspeth Counties. This project is funded by a grant from USDA-APHIS. Each participant will establish five trap locations for Tomato leafminer, Egyptian cotton worm, Old world bollworm, and Cotton cut worm. The traps will be inspected and data collected every two weeks from May through October (12 cycles). During this time, TX AgriLife Extension faculty will be monitoring fields of solanaceous crops for damage symptoms or presence of bacterial wilt (race r3b2). As solanaceous crops begin fruiting, they will be examined for fruit piercing moth. The monitoring efforts will be enhanced by communications with farmers, agricultural consultants, agricultural chemical field men, and others. Results will be shared with the agricultural community.

PECAN-Field research projects: In early May, Mark Muegge and I will be conducting a small scale Pecan Nut Casebearer (PNC)/aphid pesticide trial that will include at least two formulations. Additionally, we will conduct an insecticide efficacy pecan aphid test to evaluate commonly used insecticides and alternatives for the control of black pecan aphids and black-margined pecan aphids in late summer or early fall. We are also planning to conduct a large-scale, long-term pecan aphid resistance management study with 5-acre plots, a total of 9 plots or an area of 45 acres and the following treatments: 1) Control PNC with Intrepid but no aphid control even if they reach threshold densities, 2) Control PNC with Intrepid and treat aphids at threshold with Fulfill or Closer (sulfoxaflor), 3) Control PNC with Lorsban (or a popular insecticide among pecan growers) then use a pyrethroid or neonicotinoid to control aphids. The same treatments would be applied to the same plots for 3 consecutive years and the test will be replicated three times. We will collect pest and yield data. This study will attempt to answer the following questions: Can we achieve good pest management of PNC and aphids using fewer insecticide treatments? Does controlling aphids increase pecan yield or quality? I would like to thank Mr. Marcelino Lozano, MBM Farms Manager, for his enthusiastic support to AgriLife efforts for Texas agriculture. He has kindly accepted to be our Cooperator in this research project.

Managing Insecticide Resistance: On March 29, I gave a presentation on this topic at the 2012 Texas Pest Control Association El Paso Workshop at the Wyndham Airport Hotel. This presentation was partially based on a lecture given by Drs. Mike Merchant and Mark Muegge at the 2012 El Paso Pesticide Applicator Training on January 24. I would like to share with you some of the highlights of that presentation because the results of field research conducted in local commercial pecan orchards indicate that black-margined pecan aphids have developed resistance to neonicotinoid insecticides (group 4A). **Insecticide resistance** is a heritable change in the sensitivity of a pest population that is reflected in the repeated failure of a product to achieve the expected level of control when used according to the label recommendation for that pest species. This is important because registrations for new pesticides are difficult to obtain and costly to develop and the discovery of new effective pesticides is difficult and expensive. Ineffective insecticides waste money, result in greater insecticide rates/frequency, increase environmental insecticide load, expose off-target organisms, and may cause secondary pest outbreaks. Conditions required for resistance to develop quickly include resistant genes present in the population, high reproductive rate, short generation time, large proportion of population exposed to selection pressure. The most important mechanisms of resistance include: behavioral resistance: a shift in behavior avoids exposure to insecticides. Physical resistance-reduced penetration: less insecticide is able to penetrate the pest tissues or rate of penetration is slowed down. Metabolic resistance: enzymes are produced as part of detoxication mechanisms. Target site insensitivity: insecticide penetrates insect cuticle and it is not metabolized more rapidly, but it still does not kill the pest. The two main types of insecticide resistance are Cross resistance: resistance develops to one pesticide that has a similar "mode of action" to another pesticide. In such cases the pest is "cross resistant" to the second pesticide even when it has not been exposed to it. Multiple resistance: pest population is resistant to pesticides with different modes of action or across chemical classes. HOW TO AVOID RESISTANCE: Use IPM, treat thoroughly, apply insecticides with different modes of action, minimize pesticide usage, avoid under application, no unnecessary treatments, use insecticides with the shortest effective residual period, use other controls whenever possible, utilize resistant varieties, certain formulations/adjuvants can improve coverage and efficacy. The Insecticide Resistance Action Committee is composed of an international group of crop protection professionals, and was formed to advise on the prevention and management of insecticide resistance. Now insecticide labels include the group number in the label. There are 28 main groups with sub-groups (A-E) and some undetermined. Cross-resistance potential between subgroups is higher than between groups.

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El Paso Pest Management Association
Texas Pest Management Association
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West Texas Pecan Association