

# East Texas Nursery & Greenhouse Newsletter

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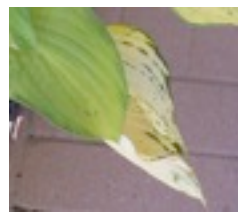
**Chilli Thrips: A New Pest of Roses and Other Landscape Plants.**

*Must read information on this new pest.*



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**IR-4 Survey**

*Your input will help determine IR-4 research priorities for 2008.*



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**SAF Pest Management Conference**

*Many of this years presentations are summarized.*



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## New Newsletter Format

The East Texas Nursery and Greenhouse IPM Newsletter has a new format. In addition to the traditional hard copy, an electronic copy is also available which will have active links to web sites and other interactive options. If you would like to receive the newsletter via email send your email address to Kim Cushman at [kccushman@ag.tamu.edu](mailto:kccushman@ag.tamu.edu).

## Meeting Announcement

The 2007 East Texas Nursery and Greenhouse Conference will be held in conjunction with the Southwest Growers Conference. This joint meetings will be held October 24<sup>th</sup> at the Harvey Convention Center in Tyler. The greenhouse and nursery tour traditionally held as part of the Southwest Growers Conference will be held on October 23<sup>rd</sup>. We are currently working out the details of the meeting and hope to have the agenda finalized shortly. Watch your mail for additional information.

# Efficacy of TriStar & Aria against Madeira Mealbug

**Methods.** TriStar 30SC was evaluated at the 5.4 oz and 10.8 oz rates with and without the surfactant Capsil to control madeira mealybug on greenhouse grown coleus. Aria was included as an industry standard. The trial was conducted at the Texas A&M University System Agricultural Research and Extension Center at Overton, TX. Coleus plants were infested with all mealybug life stages at the initiation of the trial. Insecticide sprays were applied until run-off. Treatments were applied on days 0 and 14. To monitor the mealybug population, five leaves were randomly selected and the number of non-crawler stage mealybugs were counted each sample period.



**Results & Discussion.** All pesticide treatments resulted in statistically lower mealybug populations compared to the control up to 21 days after the first treatment. In all four TriStar treatments the mealybug populations increased significantly 28 days after treatment. The Aria treatment resulted in the lowest mealybug population on all sample dates. There were no significant differences among the TriStar treatments on any sample date. (Scott Ludwig)

**Mean Number of Madeira Mealybugs per 5 Coleus Leaves**

Product	Rate (/100gal)	Days after treatment				
		0	7	14	21	28
TriStar 30SC	5.4 oz	30.8a	5.8b	2.8bc	3.0b	57.3b
TriStar 30SC+ CapSil	5.4 oz	35.8a	8.0b	7.0bc	1.3b	134.3b
TriStar 30SC	10.8 oz	39.3a	9.8ab	5.0bc	10.3b	123.8ab
TriStar 30SC + CapSil	10.8 oz	38.5a	16.5ab	16.0b	8.5b	100.8ab
Aria	4.2 oz	25.3a	2.8b	0.8c	1.3b	7.3±2.6c
Untreated		35.0a	35.5a	54.8a	62.5a	Dead a

Means within columns with the same are not significantly different ( $P>0.05$ , LSD).

This trial was funded by Cleary Chemical Company.

## Florida Wax Scale Control on Dwarf Burford Holly

**Methods.** The objective of this study was to evaluate the efficacy of Flagship 25WG, Celero 16WSG, and Tristar 70WSP, against Florida wax scale to expand pesticide labels through the IR-4 Project. The trial was conducted at a commercial nursery. Holly plants were grown in 5 gallon pots. At the start of the trial the plants had a natural infestation of scale adults and egg masses. All insecticide treatments included a non-ionic organosilicone (Thoroughbred 5 gal/100 gal) and applied until run-off. Treatments were applied on 0 and 14 days after treatment. To monitor the scale population, the same twenty leaves per pot were monitored each sample period. For the final count (56 DAT) the scales were examined under a microscope to determine if they were alive.



**Results & Discussion.** All the scales were eggs masses or adult females at the start of the trial. On 56 DAT, when the scales were examined under a microscope, the Flagship, TriStar, and Celero treatments resulted in significantly lower populations compared to the untreated control and the Orthene treatment. This level of control would be acceptable to nursery growers. The high adult population on 14 DAT, 28 DAT, and 42 DAT is a result of the scales not falling off the plants when they died. These results show that dead scales may remain on the plant. Growers may need to flip the scales over to determine the efficacy of their sprays. (Scott Ludwig)

Mean number of Florida wax scale per 20 holly leaves

Treatment	Rate (/100 gal)	Days after treatment				
		0	14	28	42	56
Flagship 25WG	2 oz	21.0 ab	57.8 ab	92.2 a	75.0 a	2.4 b
Flagship 25WG	4 oz	24.6 a	51.6 ab	74.4 ab	72.2 a	2.6 bc
Tristar 70WSP	4 oz	21.0 ab	47.0 ab	41.0 bc	39.2 ab	0.2 d
Tristar 70WSP	8 oz	20.0 ab	33.4 b	34.8 c	30.0 b	0.4 cd
Celero 16WSG	4 oz	19.2 ab	39.4 ab	49.8 abc	50.2 ab	1.2 bcd
Orthene TTO Spray 97	8 oz	18.2 ab	61.2 a	84.8 ab	78.6 a	34.0 a
Untreated Control		13.8 b	74.4 a	66.0 ab	77.0 a	65.0 a

Means within columns with the same letter are not significantly different (LSD, P>0.05).

# Chilli thrips (*Scirtothrips dorsalis*): A new thrips attacking roses and landscape plants

Chilli thrips were detected on roses from Palm Beach County, Florida in 2005. They have since been detected in Florida from Alachua County to Monroe County where they are causing severe damage to landscape plants. **Chilli thrips have also been detected on pepper transplants and roses (var. Knock Out) in retail stores in South Texas.**



Chilli thrips are a polyphagous species and has been documented to attack more than 100 hosts from about 40 different families. As this pest expands its geographical range additional plants are added to its host range. Some of its ornamental hosts include: roses, poinsettia, gerber daisy, verbena, *Impatiens walleriana*, crape myrtle, ligustrum, sweet basil, geranium, petunia, variegated pittosporum, coleus, castor bean, *Rhododendron sp.*, *Salvia farinacea*, viburnum, peppers, tomatoes, and zinnia



Field identification of chilli thrips is extremely difficult. Adults have a pale body with dark wings and are less than 2 mm in length. Immature thrips are pale in color as are the immature stages of many other thrips species.

The life cycle for chilli thrips is similar to that of western flower thrips. Female chilli thrips insert their eggs inside plant tissue. The eggs hatch in 6-8 days. They pass through two larval stages (1<sup>st</sup> and 2<sup>nd</sup> instars) that last for 6-7 days. During this time they actively feed on the host plant. They then pass through a prepupal (~ 24 h) and pupal stages (2-3 days) during which time they do not feed. They can complete their life cycle in 14-20 days. The thrips female oviposit 60 to 200 eggs in her lifetime.

Chilli thrips are mainly a foliage feeder and unlike western flower thrips does not feed on flower pollen. Young leaves, buds and fruits are preferred, but all above ground parts of its host plants may be attacked. Feeding damage turns tender leaves, buds, and fruits bronze in color. Damaged leaves curl upward and appear distorted. Infested plants become stunted or dwarfed, and leaves with petioles detach from the stem, causing defoliation in some plants. Feeding on buds may cause them to become brittle and drop.

Plants with the symptoms described above should be examined for the presence of thrips. Leaves or buds from symptomatic plants should be collected and placed into a Ziploc bag to prevent the thrips from escaping. Label the bag with collection locality information, host plant, date collected and name of collector. Plants can be sent to Scott Ludwig at the Texas A&M University System Agricultural Research and Extension Center at Overton for identification.

Our best recommendation for controlling chilli thrips is the use of products registered for your crop and known to be effective against thrips. Research by Lance Osborne at the University of Florida suggests that Orthene, Avid, Spinosad, Pylon (indoors), Safari sprays (no drenches) and the predatory mites *Amblyseius swirskii* are effective treatments for ornamental crops.

This spring I will be collaborating with Matt Ciomperlik, USDA-APHIS-PPQ, in south Texas to conduct efficacy studies against chilli thrips on greenhouse grown roses. This research is being conducted with the support of the [IR-4 Ornamental Crop Program, USDA, APHIS, PPQ Pest Detection, Diagnostics & Management Laboratory](#), and [Landmark Nurseries](#).

For more information on chilli thrips visit the <http://spdn.ifas.ufl.edu/Chillithrips.htm>.  
(Scott Ludwig)

# Hosta Virus X

Hostas with mottling, variegation, and crinkled leaves? Sounds like a good variety. But, what if it's caused by a virus? Hosta Virus X (HVX) is becoming a real concern for the industry. First identified in 1996, this virus has continued to spread. The virus is thought to be present in all plants of the varieties 'Breakdance', 'Eternal Father', 'Leopard Frog', and 'Lunacy'. All other hostas appear to be susceptible and many varieties have a high percentage of infection. A list of these varieties and photos of symptoms can be found at <http://www.hostalibrary.org>. The worst offenders on this list include 'Gold Standard', 'Strip Tease', and 'Sum and Substance'. Even hostas generated from tissue culture can be infected. Symptoms range from green bands around the veins, mottling, or crinkling of the leaves. In large lots, symptoms may occur on 20 percent or more of the plants.



Sun-bleached 'Gold Standard' with HVX, old leaf and new.



'Gold Edger' in sun. HVX symptom areas burn more easily.

The virus spread to new rhizomes occurs during division and may also be spread by tools used during division, or even by lawn mower blades and string trimmers. Tools used during division should be disinfected between each plant to avoid spreading this virus as well as other pathogens. All varieties need to be tested to assure they are virus free, but you should pay extra attention to varieties that have a history of HVX infection. Ask your supplier if they have been tested. If not, you should consider discarding small quantities or have larger quantities tested to be sure they are virus free. At this point in time, all purchasers should require suppliers to provide virus free material.

If any of the rhizomes in a lot are found to be infected the whole lot should be destroyed. HVX can be deceiving; it is not uncommon for plants to not show symptoms for three or more years and symptoms can even disappear. Additionally, virus testing on a single plant may be inconclusive due to a recent infection that hasn't spread throughout the plant. For

this reason, a lot that has a few symptomatic plants will likely have many more plants that are not showing symptoms yet. Testing is available through the Texas Plant Disease Diagnostic Laboratory (<http://plantpathology.tamu.edu/extension/tpddl/fees.asp>) or Agdia (<http://www.agdia.com>). If you find suspect plants in a landscape, they should be removed and discarded along with any of the other Hostas next to them. Do not replant hostas to that area until the remaining roots have died and decayed. The virus requires a living host and will be destroyed when the roots decay. This will avoid movement of the virus from old infected roots to any new hostas you may wish to plant.

There is no cure for Hosta Virus X. The only way to stop the spread is to identify infected material and dispose of it. Many regulatory agencies are watching shipments of hostas very closely to avoid importing this virus. Aggressive monitoring and testing will not only keep the inspectors away, but will also result in happy customers. (Karl Steddom)

## IR-4 Project Ornamental Survey

The Ornamental Horticulture Program was started in 1977 to address the disease, insect, and weed management tool and plant growth regulator needs of growers. Over time this program expanded to cover not only ornamental horticulture plants grown in greenhouses and nurseries, but landscape plantings, Christmas tree farms, sod farms and interiorscapes.

The 2007 Ornamental Survey is a tool to help in planning for the next year's research priorities. The goal is to learn from growers, landscape care professionals, researchers and grower groups just what are the pressing needs end users face in terms of pest management. The survey asks respondents to identify the top three disease, weed and insect concerns and to select if new products are needed or if current labels need to be expanded to include the concerns. It also asks the respondents efficacy research is needed to address the concerns.

The survey is available through late summer. The results are tallied and participants at the Ornamental Workshop use the results to help determine research priorities for the following year. The survey is now available on the IR-4 website at <http://ir4.rutgers.edu/ornamental/Survey/>. (Scott Ludwig)

# SAF Pest Management Conference

The Society of American Florists held its annual Pest Management Conference in February.. On the 22<sup>nd</sup> local growers showcased their operations. Presentations on the 23<sup>rd</sup> and 24<sup>th</sup> covered a wide variety of topics. Presentations covering plant pathogens are highlighted in this issue. Entomology and weed science presentations will be covered in the next issue.

- Fungus gnats and shore flies can move fungal spores. Mike Stanghellini discussed the role these insects play as the primary means of spread of inoculum for diseases such as Phytophthora, Pythium, Fusarium, Verticillium, and Thelaviopsis. Spores are carried on the exterior of the flies as well as being eaten by the larvae. A potential new control measure is to colonize millet with a specific strain of Beauvaria, then distribute the millet into chronically wet areas the greenhouse. For more information see: <http://plantpathology.ucr.edu/new/index.php?page=faculty&i=16&p=1>
- Hot water is an old method but it still works. Stanton Gill has been soaking propagative material in a hot water bath to effectively controlled several mites and scales. Temperature thresholds for plants and insects vary so more research is needed for specific recommendations. This method also has potential for controlling fungal, bacterial, and nematode pathogens. For more information see: <http://www.agnr.umd.edu/ipmnet/05HWP.pdf>
- Chlorine dioxide may be a better alternative to bleach for sanitation according to Gary Chastagner. Unlike bleach, chlorine dioxide works well over a broad range of pH. It is commercially available as a liquid and as a two component mix that generates a gas. Liquid applications are good for sanitation of work surfaces and recycled water. Gas applications show promise for fumigation of plant material without the need to dip them in water. For more information see: <http://www.plantmanagementnetwork.org/pub/php/research/2003/disinfect/>
- Stephen Marek showed soluble silicates (KSiO<sub>3</sub>, NaSiO<sub>3</sub>, and CaSiO<sub>3</sub>) increased the structural rigidity of plants and may play an important role in the resistance reaction of a plant to attack from insects and disease. The effects varied by crop and specific rates will need to be evaluated based on crop, silicate source, and planting media. For more information see: <http://www.ento.okstate.edu/profiles/marek.html>

- Surfactants help prevent the spread of zoosporic pathogens such as Pythium and Phytophthora according to Mike Stanghellini. Zoospores do not have a cell wall for protection. Surfactants work by disrupting the cell membrane of the zoospore, disrupting the spore. When added to a recirculating irrigation system, surfactants prevented disease from spreading from infected plants to nearby healthy plants. For more information see: <http://plantpathology.ucr.edu/new/index.php?page=faculty&i=16&p=1> (Karl Steddom)

# East Texas Greenhouse and Garden Performance Trials

**MARK YOUR CALENDAR THE 2007 FIELD DAY IS JUNE 28!!!**

The East Texas Bedding Plant Greenhouse and Garden Performance Trial Program began several years ago at the Overton Center with the goal of generating and providing information on greenhouse and field performance of bedding plant varieties to the local bedding plant industry and consumers of these products. The program has now expanded in scope with the Smith Count Gardeners Association playing an integral role in the trials.

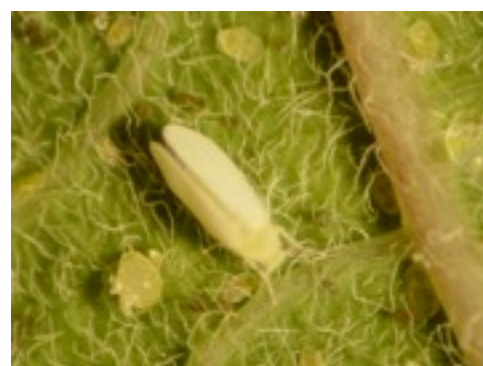
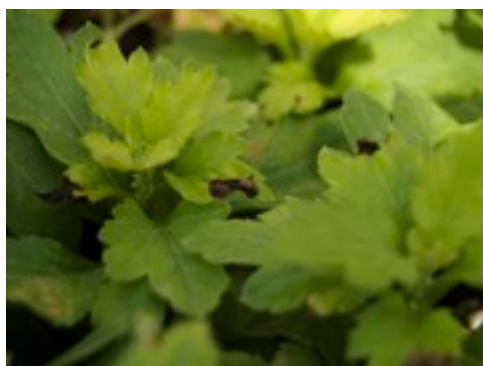
Entries are received from most of the major Ornamental Seed Companies doing business in the United States giving the regional industry access to the only comprehensive greenhouse performance trials in this part of the country. The field performance trials are now replicated at both the Overton Center and the Dallas Center. We also coordinate trial results with the Dallas Arboretum. Over 5 million consumers in the northeast Texas region now have the opportunity to see how promising new plants from all over the world perform in our climate. Plants that grow well in our climate have the potential to reduce inputs needed for production and use in the home or commercial landscape.

Many of the top performing varieties from the bedding plant trials are also chosen to be part of the Coordinated Education and Marketing Assistance Program (CEMAP), a statewide testing program headquartered at the Dallas Center in which entries vie for designation as Texas Superstar™ plants. The comprehensive benefit of the Bedding Plant Evaluation Program is the link between the rural bedding plant producers and the urban consumers which serves as a basis for improving the quality of life for all of the citizens of Texas. (Brent Pemberton)

# East Texas IPM Program

*Providing Science-based solutions to pest problems using methods that minimize health, environmental, and economic risks.*

Extension programs serve people of all ages regardless of socioeconomic level, race, color, sex, religion, disability or national origin. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Court of Texas Cooperating. A member of The Texas A&M University System and its statewide Agriculture Program.



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