CHASE NEWS

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CHASE HORTICULTURAL RESEARCH, INC.

Miticides and Herbicides—Farwest Update

Last week, we attended the Farwest show and seminars in Portland, Oregon. It was a huge show as usual and with an effort we walked the entire floor in 2 hours. I also had two talks to give and was able to hear the other speakers in my sessions on Friday and Saturday morning.

Dr. Hannah Mathers, the Ohio Sate University spoke on weed control. Her first talk focused on diagnosing herbicide damage and she really opened my eyes to the possibilities. For example, an application of a pre-emergent herbicide in a field nursery might not show crop damage until several years later when a sensitive crop is planted. It is also possible for an herbicide (glyphosate) to be absorbed by green bark and be stored in the tree causing symptoms 1 or 2 years after the original application. I think the cankers and sunken lesions sometimes caused in this way are often diagnosed as fungicide damage. Luckily for me, I have worked more in greenhouses where most herbicides are not legal for use. This at least makes problem diagnosis a little easier in the greenhouse. The table below summarizes the days to activation times for some pre-emergence herbicides. Hannah modified a table originally from M. Halcomb, Field Nursery Weed Control. Agric. Ext. Serv., the Univ. of Tennessee, 2002.

Active ingredient	Trade name	Activation time
Oryzalin/oxyflurofen	Rout	1
Dichlobenil	Casoron	1
EPTC	Eptam	1
Oxadiazon	Ronstar	1
Triflualin	Treflan	2
Isoxaben/trifluralin	Snapshot	3
Napropamide	Devrinol	3
DCPA	Dacthal	4
Metolachlor	Pennant	7
Simazine	Princep	10
Prodiamine	Barricade	14
Isoxaben	Gallery	21
Oryzalin	Surflan	21
Oxyfluorfen	Goal	25
Pendimethalin	Pendulum	30

The insect-mite talks were given by Dan Gilrein, Cornell University Cooperative Extension, Long Island Horticultural Research and Education Center. Dan presented an overview of mites and miticides. The table below summarizes efficacy of some miticides from labeled uses but includes Dan's own research experience.

Miticide	Spider mites	Broad mites	Tarsonemid	Eriophyid
Hexygon	yes			
Sanmite	yes	yes		
Akari	yes		yes	yes
Avid	yes		yes	yes
Floramite	yes			
Ovation	yes			
Pylon	yes	yes	yes	yes
TetraSan	yes			
Shuttle	yes			
Judo/Forbid	yes	yes		yes
ProMITE	yes			
Ultiflora	yes			
Hexacide	yes			
GC-Mite	yes			

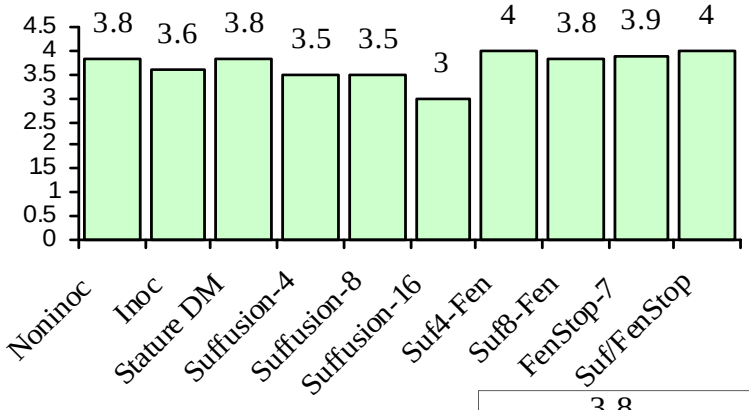
Inside this issue:

Phytophthora Root Rot Control on Gerberas and Rosemary

We recently completed two trials on Phytophthora root rot. This soil-borne pathogen is typically severe during the heat of summer. We performed one trial on Gerbera daisies with *Phytophthora cryptogea* and another on rosemary with *Phytophthora parasitica* (= *P. nicotianae*).

The gerberas ('Revolution Terra Cotta') were planted in 3.5 inch pots containing Sunshine No. 1 Mix and were top-dressed with Osmocote Plus 15-9-12 (3-4 month release). The products tested were from OHP and concentrated on their new fungicide, FenStop and their media wetting agent, Suffusion. There has been significant research performed on media surfactants to show efficacy in controlling some Pythium and Phytophthora root diseases. The treatments were: noninoculated control, inoculated control, Stature DM (6.4 oz/100 gal), Suffusion (4, 8 or 16 oz/100 gal), Suffusion and FenStop as a tank mix (4 and 7 oz, respectively), Suffusion and FenStop as a tank mix (8 and 7 oz, respectively), FenStop (7 oz) and a split treatment with Suffusion on June 1st (8 oz) followed by FenStop on June 8th (7 oz/100 gal). All treatment were applied a second time on June 29th. Treatments were applied as a sprench at the rate of 20 ml (about 2/3 oz) per pot (coverage was about 33% of the upper potting medium layer).

Top grade of (light green) and root grade (dark green, bottom) were rated on June 25th (1=dead, 2=poor, 3=good, 4=very good and 5=excellent)

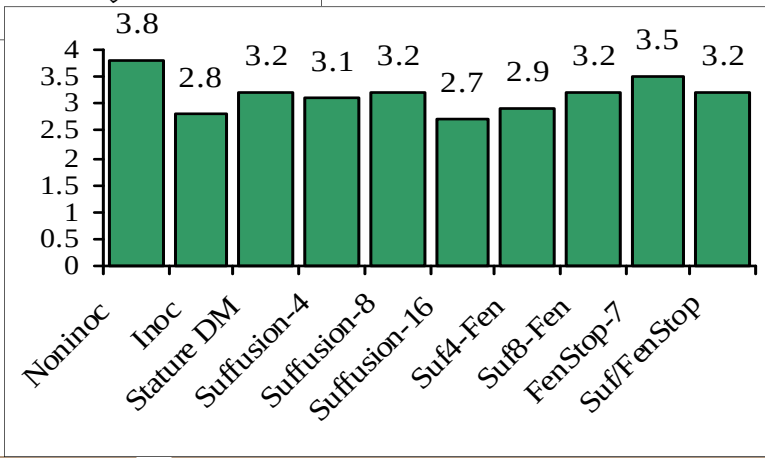


The best plants were those treated with FenStop alone or in any combination with Suffusion and Stature DM. Roots showed that the highest grade occurred on plants treated with FenStop alone. There was potentially a negative response to Suffusion since all plants treated with Suffusion had lower grades than the noninoculated controls. The highest rate of Suffusion tested (16 oz/100 gal) did have the lowest mean root grade. The top grade for this treatment was also lowest. Disease pressure was low in this trial, as this pathogen is often able to kill gerberas during a period of high heat.

The second trial I am reporting this month was performed on rosemary. The plants were established in 3.5 inch pots, again using Sunshine No. 1 mix and top dressing with Osmocote Plus 15-9-12 (3-4 month release rate). Plants were treated with a soil drench at the rate of 35 ml (a little over an oz) on a weekly interval for a total of five applications. The first treatment was made on July 6th and plants were inoculated on July 12th. Treatments and resulted are shown in the table.

Treatment	oz/100	% healthy
Noninoculated	———	62 b
Inoculated	———	39 a
V10161	2	41 a
V10161	4	51 ab
V10161	6	41 a
V10161/Terrazole	2/6	46 ab
Terrazole 35W	6	55 ab
Insignia	2.5	37 a
Subdue MAXX	2	50 ab
SMAXX/Heritage	1/0.9	48 ab
Heritage	0.9	47 ab

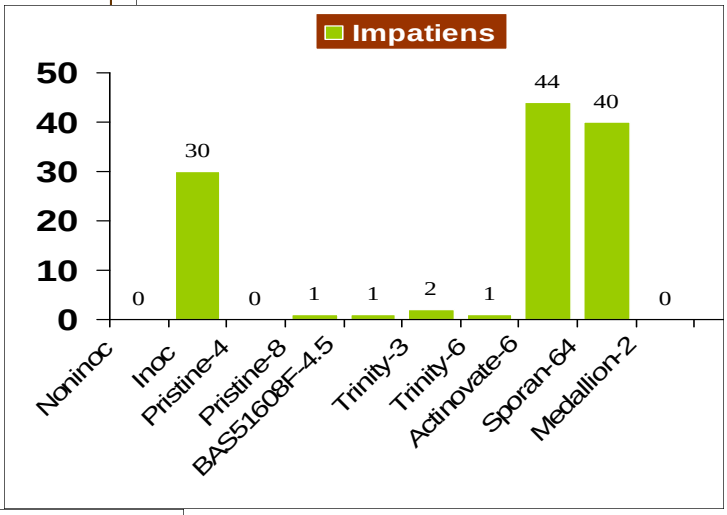
The best roots were found on the noninoculated controls with some control seen with Terrazole 35W, V10161 (4 oz), Subdue MAXX and Heritage (alone or in combination). V10161 is an experimental fungicide under development at Valent USA. None of these treatments was statistically better than the inoculated controls in this trial. A general review of efficacy of experimental and standards will be made at the IR-4 planning meeting to be held in October. I will present this info in November **Chase News**.

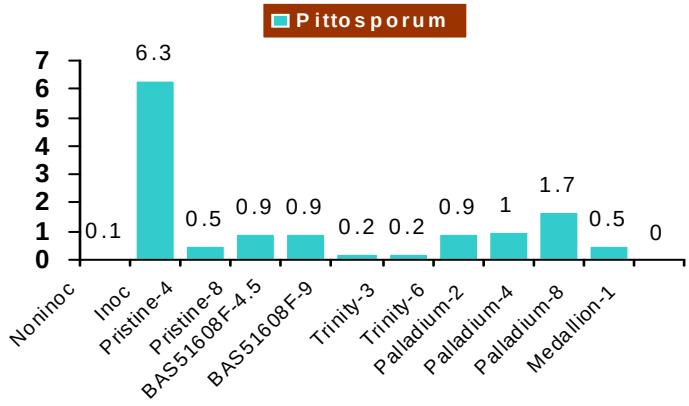


Alternaria Leaf Spot Control on Pittosporum and Impatiens

In July and August we ran trials on Alternaria leaf spot. This disease can occur year round in our experience but the plants and the space became available so we acted. The fungus that causes this disease on these two ornamentals is distinct. The Pittosporum are attacked by *Alternaria pittospori* while the Impatiens are attacked by *Alternaria alternata*. I see the disease on Pittosporum quite often during propagation and throughout production but rarely in the landscape. It is especially common in the Southeastern US while Alternaria leaf spot on Pittosporum seems to be present wherever the crop is in production. Alternaria leaf spot on Impatiens, however is the opposite. On this crop, I rarely see the disease unless the plants are in a landscape.

The Pittosporum trial started on July 9th with the first fungicide application. The products were applied to drip n a 10-day interval a total of four times. Treatments included: noninoculated control, inoculated control, Pristine (4 and 8 oz/100 gal), BAS 516 08F (4.5 and 9 oz), Trinity (3 and 6 oz), Palladium (2, 4 and 8 oz) and finally our fungicide standard, Medallion (1 oz/100 gal). We inoculated the plants with spores of *A. pittospori* on July 16th. The number of spots per plant was recorded twice and the last data are shown in the graph below (August 14th).

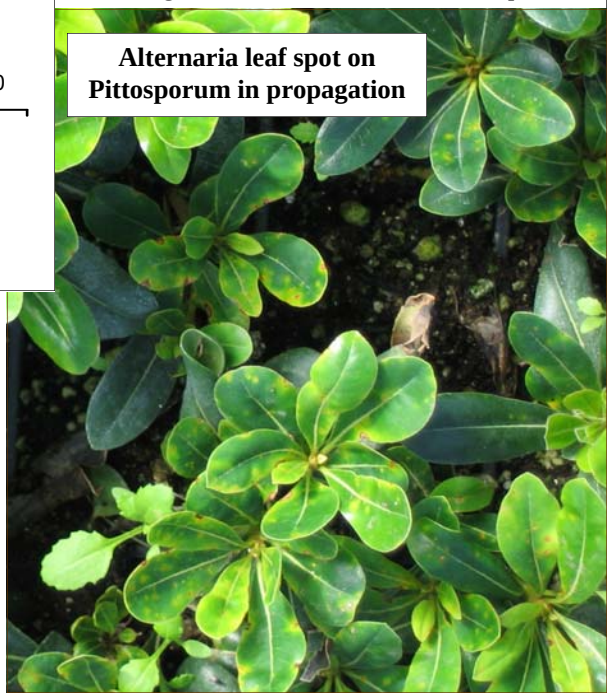




The plants were small and disease pressure was low. All products tested gave equal control of Alternaria leaf spot on these Pittosporum. In each case, the lower rates were as effective as the higher rates. Pristine (a combination of pyraclostrobin and boscalid), BAS 516 08F (similar to Pristine) and Trinity (a new triazole) are each BASF Corporation fungicides. Palladium (a combination of fludioxinil and cyprodinil) is a Syngenta Professional Products fungicide. Each of these new fungicides is under development.

The Impatiens trial started on 25 July and treatments were made twice on a 14-day interval. The plants were inoculated with spores on August 3rd. Treatments included the same controls as listed for Pittosporum in addition to the following: Pristine (4 and 8 oz/100 gal), BAS 516 08F (4.5 oz), Trinity (3 and 6 oz), Actinovate (6 oz) and Sporan and Natural Wet (64 oz and 16 oz). The number of leaf spots per pot was recorded on August 13th. The Products from the first trial were even more effective on Impatiens with a high level of disease pressure. Unfortunately, Actinovate (*Streptomyces*—biological control from Natural Industries) and Sporan (combination of plant based oils from EcoSmart) failed in this trial.

These new fungicides will be a welcome addition to our fungicide arsenal for Alternaria leaf spot.



Alternaria leaf spot on Pittosporum in propagation

Controlling Rhizoctonia on Celosia and Poinsettia

It is summertime and that means Rhizoctonia trials at CHR. We have been running a series of trials on Rhizoctonia damping-off on Celosia as well as a couple of Rhizoctonia cutting rot trials on poinsettia. This month in **Chase News**, I am reported on two of these trials.

The first trial was on Celosia seeds that were planted in 3.5 inch pots containing Fafard 3B mix. We used about 25 seeds/pot and treated them 2 days after planting. They were sprenched at the rate of about 2/3 oz per pot on 15 and 22 August. The treatments and resulting stand counts are given in the table below. We counted them on 23 and 30 August and the second rating is given.

Treatment	oz/100 gal	No. Trts.	No. plants/pot
Noninoculated	—-	2	24.4 c
Inoculated	—-	2	12.0 a
Heritage	0.9	2	16.3 ab
Heritage	1.8	1	18.5 bc
Insignia	2.5	2	21.5 bc
Insignia	5	1	19.2 bc
Compass O	1	2	18.2 bc
Compass O	2	1	18.5 bc
3336	8	2	19.8 bc
3336	16	1	19.5 bc
Fungo Flo	10	2	18.8 bc
Fungo Flo	20	1	19.5 bc

Numbers in the same column followed by a different letter are significantly different using Student-Newman-Keuls Method for mean separation.

The results showed that only for Heritage did using the higher rate result in increased number of plants per pot. All of the fungicides gave statistically the same level of control, although none were 100% effective.

The poinsettia test was started on August 20 when cuttings were stuck in Oasis cubes and placed in the mist. We treated them August 22 and 29 (see table in next column). They were inoculated on August 24. Disease was rated on August 27 and 30 and results for the final rating are shown. I have not presented data from five experimental treatments.

Treatment	oz/100 gal	Disease rating
Noninoculated	—-	1.2 a
Inoculated (B1)	—-	5.0 d
Medallion (H1)	1	1.8 abc
Palladium (J1)	2	1.9 abc
Palladium	4	2.2 bc
Palladium	8	5.0 d
Sporan/Natural Wet	64/16	5.0 d
Actinovate	6	5.0 d

The disease rating was based the following scale: 1=no stem canker, 2 = slight, 3 = moderate, 4=severe and 5=dead. Disease pressure was very high (see picture labeled B1, below) and even the chemical standard (Medallion-see picture labeled H1, below) was not 100% effective. We did see very good results with Palladium at 2 (see picture labeled J1, below) and 4 oz/100 gal but 8 oz/100 gal was apparently phytotoxic as these cuttings died. Neither Sporan or Actinovate was able to affect Rhizoctonia cutting rot on poinsettia in this trial. Palladium is a combination of the active ingredient in Medallion (fludioxinil) and cyprodinil (not currently labeled for ornamentals). This fungicide is being developed by Syngenta and should be available for use on ornamentals soon.

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Education for Horticulture