CHASE NEWS

Volume 7—Issue 4
April 2008

CHASE HORTICULTURAL RESEARCH, INC.

What's New at www.chasehorticulturalresearch.com?

Chase Horticultural Research, Inc. has a new on-line store. As of January 1, 2008 we've opened up an on-line store for all of our customers and clients. After some requests from clients we have added American Express to our previous credit card acceptance of Visa and Master Card. In our store you will find announcements, a calendar of events, special sales, downloadable digital imagery and all of our other products. You can purchase items faster and easier and on your own schedule. Along with opening our new store, we've put together some new discount packages as well as launching a new database called **Chase Base** (which includes many of the fungicide trials we have conducted over the past 5 years). In June the database will be updated to include all of the trials conducted between 1998 and 2007 and by the end of this year it will include the most recent trials as well.

You can renew **Chase News** in our store too. Sometimes, I receive e-mail requests on a specific disease or even a specific fungicide. You can actually go onto the Chase News page on our website and access two indices at the bottom of the page. The first contains plant names as well as diseases and the second is an index of fungicides (and other chemicals) mentioned in **Chase News**. You can print this out for future reference or use it as needed. Both indices are updated at least once a year. If you don't have all of the back issues you can purchase them on a CD at our store too.

For instance the Disease Index lists Alternaria leaf spot and lists Dec-02, Feb-03, Dec-03 and Jan-04 etc. That refers to the December issue of 2002. If you scan down the spreadsheet you will see the plants listed alphabetically right after the disease listings are complete.

Please feel free to contact me about any questions or suggestions you might have for improving our services to you.

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Watch out for these diseases!

INSV on Lupine (below), rust on Bellis (right) and INSV on Campanula (far right)

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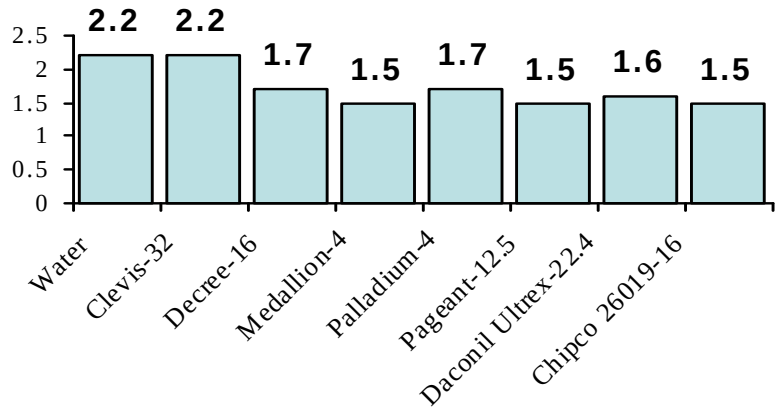
Recent Botrytis Trials on Rosemary and Pansy

It is always a challenge to work on certain diseases and Botrytis turns out ot be one of the most challenging. It is interesting that the diseases that may be the most common in commercial plant production might be very hard to develop in a research trial. This year, we conducted several trials on Botrytis and I present two of them here. In the first trial, we tested the ability of a variety of fungicides to prevent Botrytis development after only two applications.

The products were Clevis (32 oz/100 gal), Decree (16 oz), Medallion (4 oz), Palladium (4 oz), Pageant (12.5 oz), Daconil Ultrex (22.4 oz), and Chipco 26019 (16 oz). They were applied on 29 January and 5 February. Botrytis severity was rated on 4 February, 25 February and 4 March. The final data is presented in the graph below.

Botrytis did not develop to any great extent during the trial but there were lower levels of Botrytis in the plants treated with all fungicides except for the Clevis. Under low disease pressure, two applications of these Botrytis fungicides did continue to reduce disease development compared to the water treated controls.

Botrytis rating on Rosemary: 1 (none), 2 (slight), 3 (moderate), 4 (severe) and 5 (dead plant).



The second trial was conducted using pansy in flower. These plants are exceptionally susceptible to Botrytis once flowering starts when infected flowers drop onto leaves and continue the infection. Plants were sprayed on 17 and 31 March. Treatments included water noninoculated and inoculated, 26/36 (32 oz/100 gal), Endorse (1.5 lbs), Spectro 90WDG (1 lb/100 gal), 3336 (16 oz) and Decree (16 oz). Botrytis severity was rated as the number of flowers or leaves per plant with Botrytis sporulation. The inoculated plants had an average of 3 flowers/leaves with active sporulation. All of the products gave nearly 100% prevention of Botrytis when rated on 31 March and again on 7 April.

We have a range of many different fungicides that can be used to prevent Botrytis blight. Be sure to rotate between chemical classes to avoid fungicide resistance.

Weed Control with Pre-emergence Herbicides

Pre-emergence herbicides were tested for efficacy and safety on four container-grown perennials. Klett et al. (Colorado State Univerisity) reported in J. Environ. Hort. 26(1):39-44. The herbicide products included: Barricade (prodiamine), BroadStar (flumixoazin), Gallery (isoxaben), Scotts Ornamental Weedgrass Control (Scotts OWC-pendimethalin) and Treflan (trifluralin). The perennials chosen were Guizhou sage (*Artemesia lactiflora*) , hopflower oregano (*Origanum libanoticum*), Daghestan sage (*Salvia daghestanica*) and skullcap (*Scutellaria resinosa*). The weed species were annual bluegrass, barnyardgrass, yellow foxtail grass, purslane, common groundsel, redroot pigweed and annual sowthistle.

Herbicides were tested at their recommended rates and twice the recommended rate since safety was one of the goals of this research. Generally, BroadStar and Treflan were somewhat more effective than Gallery, Scotts OWC and Barricade. Plants treated with Gallery were sometimes smaller but did not show obvious phytotoxicity. Since so many new perennials are added to production it will be hard to develop enough safety information for these products.

Eradicating *Phytophthora ramorum* from Potting Media

Linderman and Davis (USDA-ARS Corvallis, OR) reported on trials to eradicate *Phytophthora ramorum*, *Cylindrocladium scoparium*, *Pythium irregulare* and *Thielaviopsis basciola* from potting media (HortTechnology 18(1):106-110). Both potitng media and soil were tested.

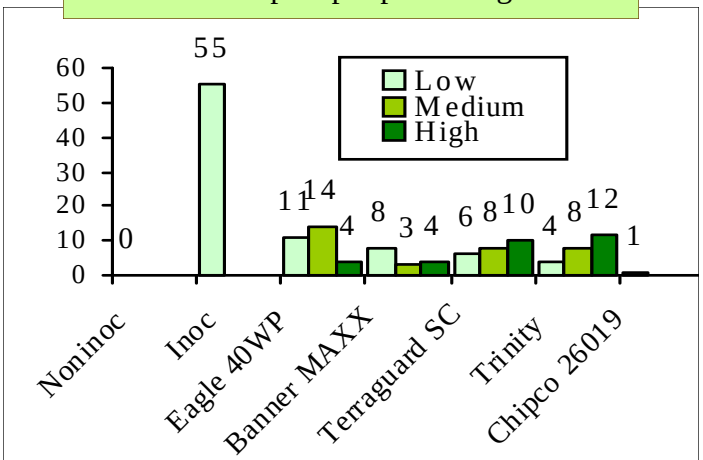
All pathogens were eradicated with aerated steam treatments at 50C for 30 minutes. Results for treatment at 45 C showed reductions in populations of the pathogens but temperatures at 50 C or higher were needed to be 100%$ effective. It is therefore very important to make sure to monitor temperatures when using steam to eradicate pathogens from potting media.

In a separate trial, Linderman and Davis tested efficacy of metam sodium. Rates of 1 ml/liter of potting medium or soil were effective in eradicating all four pathogens. The *P. ramorum* actually were killed at a much lower rate but only the highest rate tested eradicated all four pathogens. Metam sodium was tested in its liquid form

Alternaria Leaf Spot Control with Sterol Inhibitors

I wonder sometimes when to suggest low labeled rates and when to suggest higher labeled rates of fungicides for disease prevention. The labels have to consider a wide range of target pathogens as well as a wide range of grower production and finally application methods. We had some extra impatiens and decided to check out three sterol inhibitor fungicides including Eagle 40WP (myclobutanil at 1,2 and 4 oz/100 gal), Banner MAXX (propiconazole at 4, 6 and 8 oz/100 gal—not labeled for greenhouse crops), Terraguard SC (the new formulation of triflumizole at 6, 8 and 10 oz/100 gal) and Trinity (triticonazole at 4, 8 and 12 oz/100 gal—not currently labeled for ornamentals). The rates I chose were based somewhat on the labels and somewhat on our experience with each fungicide. We included inoculated and non-inoculated controls as well as a chemical standard—Chipco 26019 (iprodione at 16 oz/100 gal). The plants were sprayed to drip on 10 and 20 March 2008 and were inoculated with a spore suspension on 12 March 2008. We counted spots per plant and measured height at the end of the trial.

Mean number spots per plant/fungicide rate



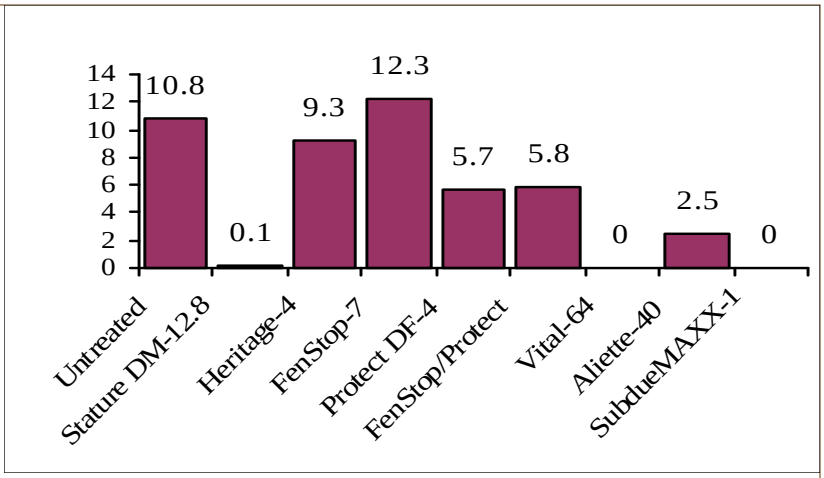
All of the treatments gave exceptional control of Alternaria on impatiens with Terraguard SC (6 oz/100 gal) resulting in 100% prevention. It was interesting that few products showed a dosage response with the higher rates resulting in higher control. The best control with Eagle (4 oz/100 gal) resulted in excellent control while the lower rates were too low. All rates of Banner MAXX, Terraguard SC and Trinity were equally effective in preventing Alternaria leaf spot on impatiens.

Since sterol inhibitors can act as plant growth regulators at times, we measured plant height. This data showed no significant effect of any treatment on plant height. Neither were there any signs of any distortion, greening or other symptoms of PGR effects on these impatiens in this trial.

When you try a new fungicide or one you have worked with before on a new plant, it is a good idea to start in the middle of the rate range on the label. This should give very good disease control without increasing chances for any phytotoxicity. Once you have used the product for awhile you may well be able to reduce the rates without any loss of disease control.

Fungicides for Downy Mildew on Coleus

Warfield et al. published results of a trial in 2007 on Coleus for control of downy mildew. Treatments were applied to 'Wizard Mix' Coleus as foliar sprays with the exception of Subdue MAXX (drench). Treatments included: untreated control, Stature DM (12.8 oz/100 gal on a 10-day interval), Heritage (4 oz on a 7-day interval), FenStop (7 oz applied once), Protect DF (4 oz on a 7-day interval) a FenStop (7 oz applied once) followed by Protect (4 oz applied twice at a 7-day interval) rotation, Vital (64 oz on a 7-day interval), Aliette (2.5 lb) and Subdue MAXX (1 oz applied once). The plants were inoculated one day after the first treatment.



Disease started to appear about 16 days after inoculation and was rated for the next three weeks. The best control of downy mildew occurred with the Stature DM, Vital and Aliette sprays or the Subdue MAXX drench. Heritage, FenStop and Protect (as well as the rotation) did not prevent downy mildew significantly in this trial.

For a complete report see Plant Disease Management Reports 2:OT0004.

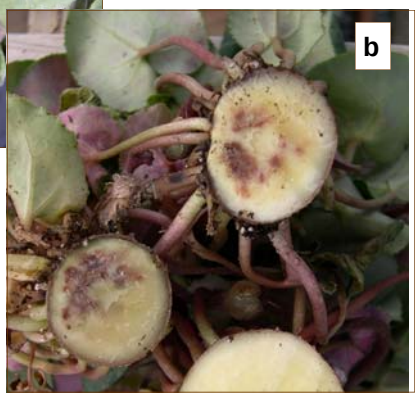
Products in Review—Compass O

Strobilurins entered the ornamental market in the 1990's with Cygnus, Compass O and Heritage. We worked on all three during the same time frame with many trials comparing these three fungicides. This month, we summarize our results for Compass O (trifloxystrobin from OHP).

One of the greatest assets of using Compass O is the range of diseases that it works very effectively on. This includes foliar diseases from Alternaria, Botrytis, Cercospora, downy mildew and especially powdery mildew. Compass O is also very effective on some stem and crown rots such as those caused by Fusarium, Gliocladium (pink rot on palms), Myrothecium, Rhizoctonia and Sclerotinia. Finally, Compass O gives some control of root diseases from Cylindrocladium (on Spathiphyllum) to Phytophthora and Pythium.

Compass O is an excellent rotational partner for many of the diseases that infect greenhouse ornamentals. Remember to use a different fungicide chemistry to avoid the development of fungicide resistance. That means do not alternate with Cygnus, Heritage, Insignia or even FenStop (similar to strobilurin chemistry).

Disease	Plants Tested	Resulting Control
Alternaria	Dusty miller, impatiens, zinnia	good to excellent
Botrytis	Exacum, rose	very good
Cercospora	Moluccella, myrtle, pansy	very good to excellent
Cylindrocladium	Azalea, spathiphyllum	good to very good
Downy Mildew	Alyssum, pansy, rose, snapdragon	good to very good
Fusarium	Cyclamen, dracaena, holiday cactus, lisianthus	some to good
Gliocladium	King palm	very good to excellent
Myrothecium	Dieffenbachia, pansy	some to good
Phytophthora	Petunia, pothos, rosemary, vinca	none to very good
Powdery Mildew	Crape myrtle, gerber daisy, hydrangea, rose, salvia, scabiosa	good to excellent
Pythium	Lisianthus, poinsettia, snapdragon	poor to good
Rhizoctonia	Celosia, poinsettia	good
Rust	Bellis, geranium, hypericum, solidago	fair to excellent
Scab	Poinsettia	excellent
Sclerotinia	Petunia	very good to excellent
Thielaviopsis	Pansy, vinca	none



a—A combination of Botrytis and Sclerotinia on Osteospermum.

b—Fusarium wilt showing corm discoloration on cyclamen.

c—Powdery mildew on Gerber daisy.

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