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CHASE RESEARCH GARDENS, INC.

CHASE NEWS

2005 Diagnostics in Review

Our diagnostic lab received nearly 900 samples from all over the US in 2005. We saw a wide range of ornamentals and a few vegetables and fruit trees. The table to the right summarizes the results of the most commonly submitted plant materials. In some cases, we saw a pattern of diseases on a crop while in others we isolated many different pathogens. For instance, we received 10 samples of hydrangeas that were primarily infected with bacterial leaf spot caused by *Xanthomonas* or anthracnose.

The most commonly submitted crop was rose at 48 samples. We isolated just about everything that can occur on rose and found some new incidences in the field.

We started a concerted effort to determine the cause of dieback and loss in perennial cut crops (waxflower and Leucodendron). Results showed a widespread problem with *Fusarium, Cylindrocladium* and *Phytophthora*.

One of the most interesting developments was seen with annual vinca (*Catharanthus*). Of the 7 or 8 samples submitted nearly all proved to be nonpathogenic (usually phytotoxicity). Some crops apparently receive a large load of pesticides whether they need them or not.

Anthracnose on Hydrangea (above) and downy mildew on Impatiens (below)

Plant	Problem(s)
Arctostapholes	Bacterial blights and Botryosphaeria canker
Aster	Phyllosticta leaf spot and Fusarium stem rot
Dianthus	Heterosporium leaf spot and Fusarium and Pythium root rots
Dracaena	Fusarium leaf spot and stem rot
Gardenia	Anthracnose and Pythium root rot
Hydrangea	Anthracnose and Xanthomonas leaf spot
Impatiens	Bacterial blights , Downy mildew and not pathogenic
Juniper	Fusarium root rot
Lavender	Bacterial blights and Pythium root rot
Leucodendron	Phytophthora, Pythium and Fusarium root and crown rots
Myrtle	Cylindrocladium root rot and Cercospora leaf spot
Phoenix palm	Pink rot and miscellaneous root rots
Poinsettia	Pythium and Phytophthora root and stem rots
Rose	Coniothyrium canker, Botrytis blight, Downy mildew, Verticillium wilt, Cylindrocladium and Fusarium stem and root rots
Salvia	Many leaf and root diseases
Snapdragon	Xanthomonas blight and Pythium root rot
Verbena	Bacterial leaf spots
Vinca (annual)	Not pathogenic
Waxflower	Cylindrocladium and Phytophthora crown rot and Fusarium and Pythium root rot

Inside this issue:

Slime Mold Control

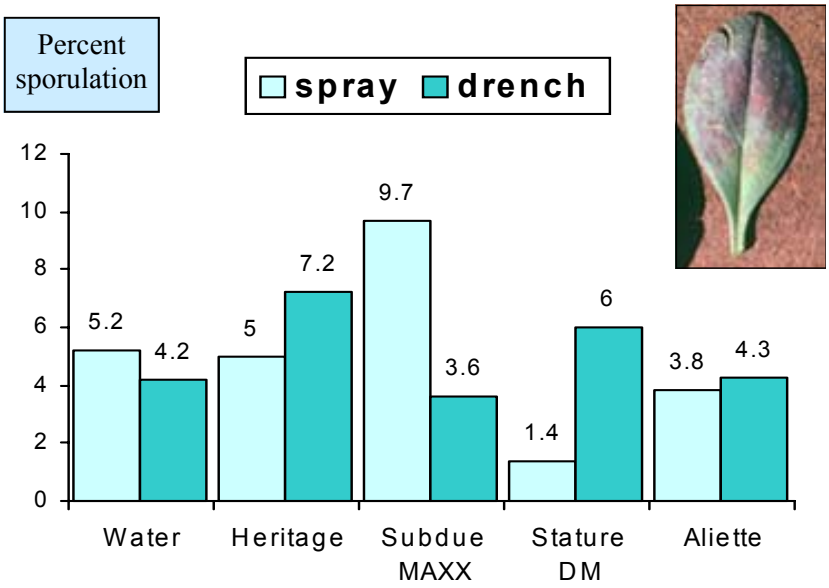
In early January we got an interesting sample with unusual fruiting bodies that we identified as slime mold. This reminded me of another slime mold incident that occurred a few years ago. At that time, we received a sample of dusty millers with slime mold covering their leaves. We started some treatments to see if we could eradicate the growth without damaging the crop. We tested Camelot (16 oz/100 gal), Phyton 27 (15 oz), Zerotol (1%) and Prodox (1% - an experimental product in the same class as Zerotol). We applied the products twice on a weekly interval and rated the degree of slime mold a week after the second spray.

Phyton 27 and Prodox did not significantly reduce slime mold on the leaves. In contrast, Zerotol reduced it 35% and Camelot reduced it 60%. Additional work with other rates of these products have not been performed since slime mold does not appear on ornamental plants with a high frequency. We will keep our eyes open and repeat the work when possible.

Fruiting bodies of a slime mold on Campanula leaves

Spray vs. Drench for Snapdragon Downy Mildew Eradication

Plants were naturally infected when were received them. We sprayed or drenched them three times on a weekly interval and rated the percentage of leaf area with active downy mildew sporulation also on a weekly interval. Heritage (1 oz/100 gal) did not give any control as a drench or spray. Subdue MAXX (1 oz) gave slight control as a drench but no control as a spray. Stature DM (9.6 oz) gave significant control as a spray but not as a drench. Aliette (16 oz) did not give control as a spray or drench in this trial.



Effect of Cultivar on Severity of Daylily Rust

Owings and Holcomb recently reported on three years of cultivar trials testing severity of daylily rust on more than 30 cultivars. Their trials are run in Louisiana. The table below summarizes some of this work as reported in **Ornamental Outlook** (January 2006—pp. 28,30).

High Disease
'Judith', 'Leebea Orange Crush', 'Lady Lucille'
Moderate Disease
'Starstruck'
Low Disease
'Plum Perfect', Frankly Scarlet, 'Back-Eyed Stella', 'Chorus Line', 'Red Volunteer'
No Disease
Miss Mary Mary', 'Bitsy', 'Lullaby Baby'

Mushroom Compost Suppresses Artillery Fungus

Three researchers from Penn State University reported on the effects of using spent mushroom compost on sporulation of *Sphaerobolus* spp. (artillery fungus). This fungus lives saprophytically on mulch or potting medium. The spores stick to any surface they hit and are aesthetically problematic. Davis, Kuhns and Harpster found that blending spent mushroom compost with landscape mulch was an effective means of reducing severity of artillery fungus. The results were not consistent indicating that the exact chemicals found in different batches might result in differing degrees of control. For a full report see **J. Environ. Hort.** 23(4)212-215.

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Leaf Spots From the Dark Side

by Sue Harris

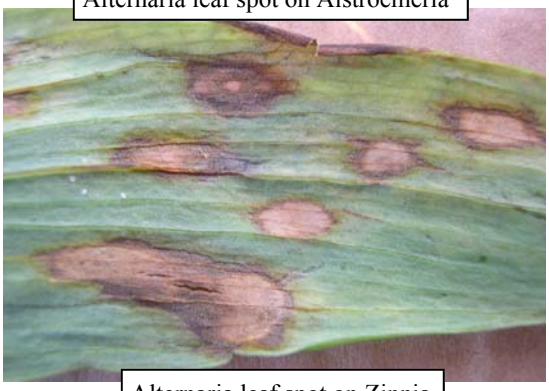
Scientific Name	Common Name	Fungi Species
Abelmoschus	Silk Flower	*Alternaria brassicae*
Antirrhinum	Snapdragon	*Alternaria alternata* *Bipolaris maydis* *Bipolaris setariae*
Asclepias	Butterfly Weed	*Alternaria alternata*
Callistephus	China Aster	*Alternaria alternata*
Capsicum annum	Pepper	*Alternaria solani* *Curvularia lunata*
Chrysanthemum	Mum	*Alternaria alternata* *Alternaria leucanthemi* *Bipolaris setariae*
Clarkia	Godetia	*Alternaria alternata*
Dahlia	Dahlia	*Alternaria alternata*
Dianthus	Carnation, pink	*Alternaria dianthicola* *Alternaria saponariae* *Bipolaris maydis* *Bipolaris setariae*
Erysimum	Wallflower	*Alternaria cheiranthi*
Euphorbia	Poinsettia	*Alternaria angustiovoidea* *Alternaria euphorbicola* *Alternaria teniussima*
Gerbera	Gerber Daisy	*Alternaria gerberae* *Alternaria porri*
Gladiolus	Gladiolus	*Alternaria alternata* *Curvularia gladioli* *Curvularia lunata* *Curvularia trifolii*
Hedera	English Ivy	*Alternaria alternata*
Helianthus	Sunflower	*Alternaria alternata* *Alternaria helianthi* *Alternaria helianthinficiens* *Alternaria zinniae*
Hibiscus	Hibiscus	*Alternaria alternata*
Iris	Iris	*Alternaria iridicola* *Bipolaris iridis*
Lathryus	Wild Sweetpea	*Alternaria alternata*
Matthiola	Stock	*Alternaria raphani*
Nicotinia	Flowering Tobacco	*Alternaria alternata* *Alternaria longipes* *Alternaria tenuissima*
Oenothera	Evening Primrose	*Alternaria alternata*
Pelargonium	Geranium	*Alternaria alternata* *Bipolaris maydis* *Bipolaris setariae*
Petunia	Petunia	*Alternaria alternata* *Alternaria solani*
Portulaca	Moss Rose	*Drechslera portulacae*
Rosa	Rose	*Bipolaris setariae*
Senecio cineraria	Dusty Miller	*Alternaria cinerariae*
Tagetes	Marigold	*Alternaria tagetica*
Viola	Pansy	*Alternaria teniussima*
Zinnia	Zinnia	*Alternaria zinniae*

What do *Alternaria, Bipolaris* and all of the other fungi listed in the table have in common? They are closely related fungi that reproduce by forming dark-colored spores. These spores are moved mainly by splashing water since they are usually too heavy to be fan or wind blown. They are often seed-borne (usually on the outside of the seed). The dark pigment in their walls allows them some protection from the ultraviolet damage making them long lived on the leaves, stems or flowers they infect. It is not uncommon to find them sporulating freely giving spots a black felty appearance.

Some of these fungi have a very wide host range (*A. alternata*). Designing a control strategy should e based on the fact that they can be seed-borne and easily moved with rainfall or splashing irrigation water. The fungicides that are most effective on the group are chlorothalonil (Daconil), fludioxinil (Medallion) and the strobilurins (like Compass O, Cygnus and Heritage).

Heterosporium leaf spot on Sweet William

Alternaria leaf spot on Alstroemeria



Alternaria leaf spot on Zinnia