What About Generics?

Daylily leaf streak. (Photos courtesy of Ann Chase)

When disease breaks out, what is the most important characteristic of a chemical: cost or efficacy? New data from Chase Research Gardens helps you combine the two.

By Ann Chase

The high cost of human health care, especially prescription medications, has led many of us to that very question. Can I use the generic, less-expensive product or must I purchase the name brand? Although we do not have true generics available for our plant health care needs, we are faced with essentially the same question: What about using a generic?

As with most simple questions, the answer is complex. Over the past couple of years, Chase Research Gardens has sought an answer to this question for ornamental disease control through a series of trials with side-by-side comparisons of fungicides with similar active ingredients. As one might expect, these tests are not popular with all fungicide manufacturers, so many of these trials are my own fault with no one to share the blame. Some companies will be gratified by the results we found while others will not. I do apologize for leaving products out of these tests, but they were my own idea and thus subject to my whims. The chemical class, active ingredient and rates of the products tested are summarized in Table 1, page 32.

COPPERS AND MANCOZEBS

Perhaps the oldest fixed copper fungicide is copper sulfate pentahydrate, first used in the 1800s. Today, Phyton 27 is the best known example of this type of copper product. In 1889, basic copper was the first factory-made fungicide. Nearly 70 years later, cupric hydroxide entered the marketplace. Examples of products with this active ingredient are Champ and Kocide. Most recently we have Camelot (copper salts of fatty and rosin acids).

In the fall of 2000, we collected some 1-gallon azaleas with powdery mildew and tried to eradicate the problem with a couple of fungicide sprays. The products were copper and mancozeb (alone or in combination [Junction]). It is clear from this test (see Figure 1, top right) that all products worked reasonably well (to about the same degree) to reduce the leaf area affected by powdery mildew.

Dithiocarbamate products such as mancozebs have been used to control many foliar diseases on ornamentals for years. The azalea powdery mildew test showed similar control with Junction (cupric hydroxide and mancozeb), Dithane NT Rainshield and Protect T/O (both mancozeb). We also compared some mancozeb fungicides (as well as sterol inhibitors) for control of Alternaria leaf spot on Pittosporum. These liners had severe disease when we potted them up and started the

Ann Chase will be part of the GPN/Syngenta Educational Symposium during 2002. You can hear her speak about choosing the right chemical, chemical screening and other disease-related topics at the following venues:

Ohio Florists' Association Short Course
Saturday, July 13, 2002
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Ornamentals Northwest Seminars/ FarWest Show
Thursday, August 22
www.farwestshow.com

Figure 1. Effect of mancozeb or copper fungicides on Azalea powdery mildew.

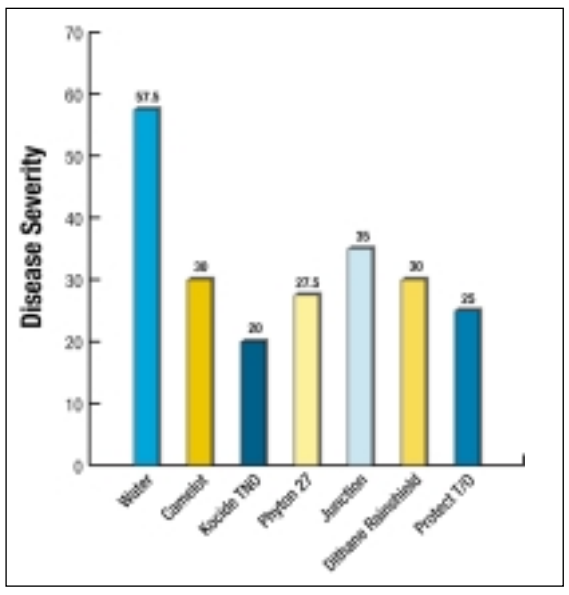


Figure 2. Effect of mancozeb or triazole fungicides on Alternaria leaf spot on Pittosporum.

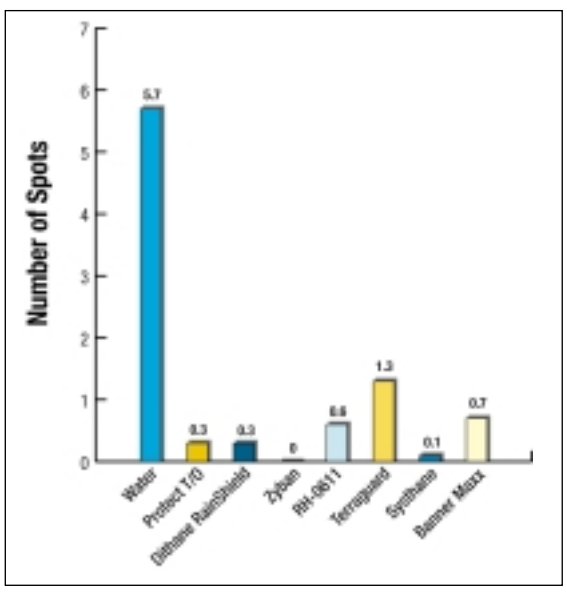
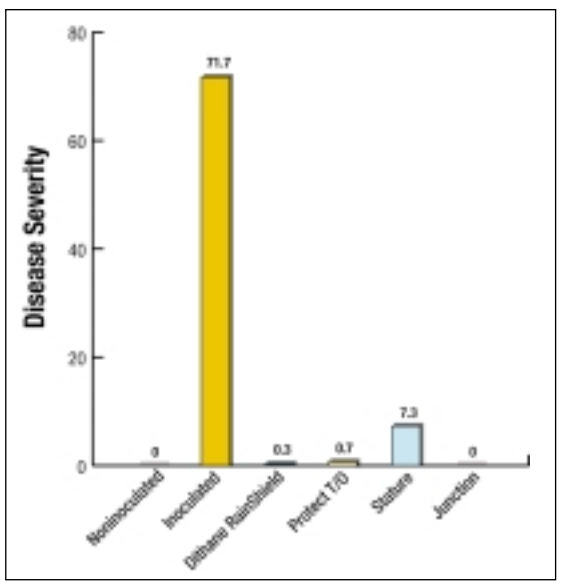


Figure 3. Effect of mancozeb fungicides on Poinsettia scab.



fungicide therapy program. In this trial Protect T/O, Dithane NT Rainshield, Zyban (mancozeb and thiophanate methyl) and RH-0611 (myclobutanil and mancozeb) all gave excellent disease control (See Figure 2, above). In addition, the sterol inhibitors (triazoles) Terraguard, Systhane and Banner Maxx were also excellent.

The severe outbreak of poinsettia scab in the late summer of 2000 led to the test reported here. We trialed quite a few different fungicides, and several containing mancozeb were among those tested. All mancozebs tested (Stature is a combination of dimethomorph and mancozeb) gave excellent preventative control of poinsettia scab (see Figure 3, above right).

CHLOROTHALONILS

The final group of fungicides we were interested in comparing were those containing chlorothalonil — a long-time standard for leaf spot control on ornamentals. Our first test was on impatiens with Alternaria leaf spot. The plants were healthy when we started so this trial was preventative in nature. Products included were two formulations each of Daconil and PathGuard. The results we obtained showed that each of the chlorothalonil fungicides provided very good to excellent prevention of Alternaria leaf spot on this bedding plant (see Figure 4, below).

Some of the same products were included in a trial last spring on daylily leaf streak. In this case, we also included two formulations of Concorde as well as two combination products containing thiophanate methyl and chlorothalonil (ConSyst and Spectro). While disease prevention was only moderate, it certainly was equivalent with all of the fungicides included (see Figure 5, below).

WHICH TO USE?

For the few products and diseases tested under these controlled settings, I would be hard-pressed to find any differences between fungicides with the same or similar active ingredients. I have overall found the fungicides within any one of these groups (copper, mancozeb, chlorothalonil or sterol inhibitor) to control many diseases to a similar degree.

Keep in mind that the diseases I have reported here are relatively easy to control. In cases where disease pressure is exceptionally severe or the disease itself difficult to control, even slight differences can be critically important. For example, Phyton 27 has given slightly better control of bacterial disease than other copper products tested. Further, one cannot control Fusarium wilt on Cyclamen with any sterol inhibitor — only Terraguard has proven effective in our trials. Finally, we have found significant ➧

Figure 4. Effect of chlorothalonil fungicides on Alternaria on impatiens.

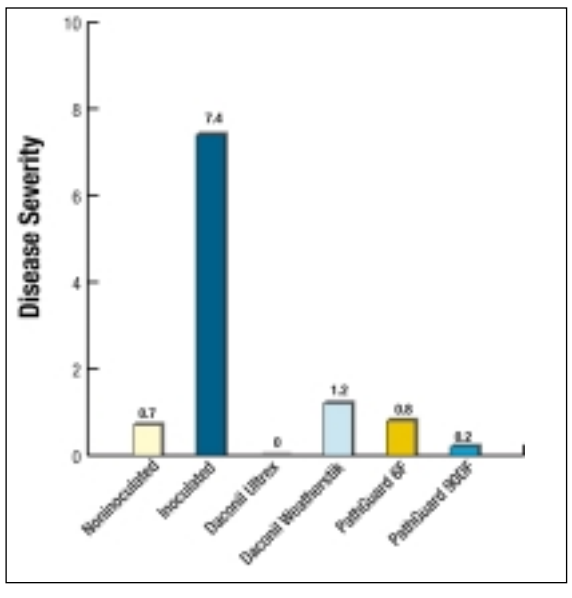
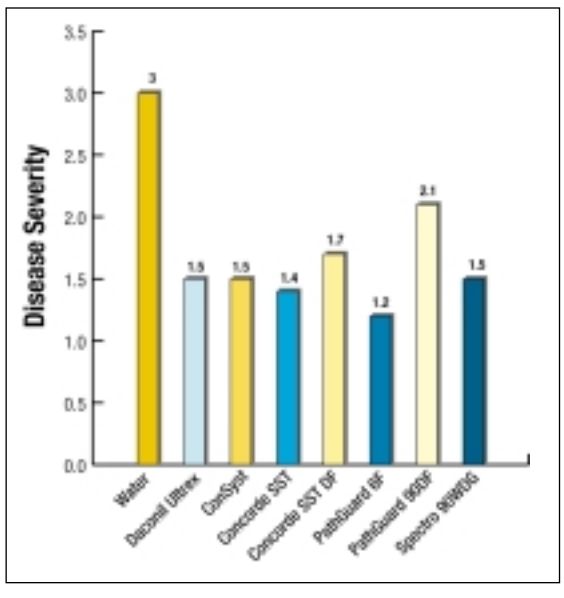


Figure 5. Effect of chlorothalonil fungicides on Daylily streak.



Poinsettia scab caused by Sphaceloma.

Table 1. Products used in these studies.

FUNGICIDE	ACTIVE INGREDIENT (S)	CHEMICAL CLASS	RATE/100 GAL
Banner Maxx	Propiconazole	Triazole	6 oz
Camelot	Copper linoleate	Copper 3	pints
Concorde SST	Chlorothalonil	Nitrile	22 oz
Concorde SST DF	Chlorothalonil	Nitrile	22.4 oz
ConSyst WDG	Chlorothalonil	Nitrile	16 oz
Daconil Ultrex	Chlorothalonil	Nitrile	22.4 oz
Daconil Weather Stik	Chlorothalonil	Nitrile	22 oz
Dithane WF	Mancozeb	Carbamate	24 oz
Junction	Mancozeb	Copper	24-48 oz
	Copper hydroxide	Carbamate	
Kocide 2000 T/N/O	Copper hydroxide	Copper	32 oz
PathGuard 6F	Chlorothalonil	Nitrile	22 oz
PathGuard 90DF	Chlorothalonil	Nitrile	20 oz
Phyton 27	Copper pentahydrate	Copper	16 oz
Protect T/O	Mancozeb	Carbamate	24 oz
RH-0611	Mancozeb	Carbamate	16 oz
	Myclobutanil	Triazole	
Spectro 90WDG	Chlorothalonil	Nitrile	16 oz
	Thiophanate methyl	Benzimidazole	
Stature WP	Dimethomorph	Cinnamic acid derivative	28 oz
	Mancozeb	Carbamate	
Systhane WSP	Myclobutanil	Triazole	3 oz
Terraguard 50W	Triflumizole	Triazole	6 oz
Zyban WSB	Mancozeb	Carbamate	24 oz
	Thiophanate methyl	Benzimidazole	

Alternaria leaf spot on Pittosporum liners.

differences between the strobilurin fungicides despite the similarities of their active ingredients.

So what's the answer to the question I posed at the beginning of this article? Sometimes you can go with the least-costly fungicide, while other times you must use a specific fungicide. No simple answers in this life. GPN

Ann Chase is a plant pathologist and president of Chase Research Gardens Inc., Mt. Aukum, Calif. Further information on disease control is available at www.chaseresearchgardens.com.

Editor's Note: The use of specific trade names in this article does not constitute endorsement of these products in preference to others containing the same active ingredients. The use of trade names is solely for the purpose of providing specific information and does not signify that they are approved to the exclusion of others. Mention of a product does not constitute a guarantee or warranty of the product by the author or the magazine.

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