

## Black Root Rot Update

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Black root rot (BRR) on pansy and other bedding plants is gaining ground once again. The disease is caused by *Thielaviopsis basicola* and is most troublesome on pansy but occurs on salvia, petunia, poinsettia, holly and vinca as well. Cultural control has been investigated over the past 15 years. The pathogen is a relatively common resident of peat bogs and appears to enter ornamental production occasionally through infested potting media. It has long been held that keeping the potting medium pH below 8 and above 4.5 minimizes disease—an overall suggestion of 5.5-6 seems to be best for pansy production without BRR. Although it is felt that maintaining pH in this range is sufficient to control BRR on pansy, some growers continue to suffer losses periodically.

Any type of stress contributes to BRR severity. Production of cool season crops (like pansy) in the late summer is a recipe for plant stress and leads to occasional outbreaks of BRR. Reusing plug trays has become an economic necessity in some operations making the potential for contamination with BRR a serious concern. Cleaning trays and benches can best be accomplished by scrubbing with a 10% sodium hypochlorite (bleach) in combination with a detergent. Zero-Tol was effective when sprayed onto plug trays at 2.5 oz/gal and Greenshield was effective when used as a 10 minute dip at 1 tbsp/gal.

Fungicide control trials continue to be reported every few years. Many have been conducted by Marge Daughtrey (Long Island Horticultural Research Center) and Mary Hausbeck (Michigan State University). The table below summarizes some of their results as well as ours (Chase Research Gardens) over the past few years. Mixed results have been seen with a few active ingredients such as fludioxinil (Medallion), azoxystrobin (Heritage) and triflumizole (Terraguard). The only product that works consistently from researcher to researcher and one year to the next is thiophanate methyl (3336) used on a 14 day interval as a 1 oz/100 gal drench. A similar compound, benomyl was found to be as effective in the 1990's before Dupont withdrew its ornamental label.

Treatment	Rate/100 gal	Interval	Result
3336	16 oz	14 days	Excellent
Fungo WSB	20 oz	14 days	Excellent
Banrot	8 oz	14 days	Some to none
Compass O	2, 8 oz	14 days	Poor to none

Heritage	0.9, 1.8 oz	21 days	Poor to none
Heritage	2, 4 oz	14 days	Poor to good
Medallion	2 oz	21 days	None to excellent
Phyton 27	20-35 oz	14 days	None to good
RootShield G	1.25 lb/cubic yard	once	Poor to none
RootShield (replaced with PlantShield HC)	8 oz	once	Poor to none
Terraguard	4-8 oz	14 days	Some to excellent

We recently completed a trial with combinations of products and found that while those with thiophanate methyl were effective on pansy, nothing controlled BRR on vinca. They all died miserably. Since all of the trials of any thiophanate methyl fungicide that we have been able to find were run with Cleary 3336, we decided to run one comparing different rates and brands of thiophanate methyl fungicides. We included 3336, Fungo Flo, Fungo WSB and Banrot at a low and high rate. Products were applied once before inoculation and thereafter every 2 weeks for a total of four applications.

At the end of the test, we measured plant height, top grade, root grade and top weights. The lower rate of each fungicide failed to give adequate control while the higher rates tested usually provided growth equal to the noninoculated control. Differences between the fungicides were minimal but both Fungo WSB rates were slightly better than the other products we tested.

