JAPANESE MAPLE (*Acer palmatum* 'Oshio Beni', 'Sango Kaku')
Verticillium wilt; *Verticillium dahliae*

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**Evaluation of Phyton-27 for control of *Verticillium* wilt on Japanese Maple, 2007.**

Treatments were arranged in a randomized complete block design in a block of 'Oshio Beni' and 'Sango Kaku' Japanese Maples planted in 1999 on a 5 x 20 ft spacing. Over the years only 3 trees showed symptoms of Verticillium wilt which indicated a low background level of the disease. Each treatment consisted of 6 replicates in each block. Fungicides were applied using a hydraulic handgun sprayer at 110 psi and at a rate of 180 to 275 gal water/A depending on the amount of foliage present. Approximately 0.4 to 0.6 gal of a spray suspension were applied per treatment. Foliar treatments were applied until runoff. Soil drench treatments consisted of a 20 second application directed to the inside of a soil ring, formed near the drip line of each tree. The whole block of trees was irrigated for 2 hours, using low angle sprinklers, 24 hours after treatment application. Treatments were applied on 27 Apr 06 (leaf expansion), 6 Jul 06, 29 Sep 06, 20 Apr 07 (leaf expansion), 11 Jul 07 and 26 Sep 07, depending on the protocol. Trees were injected with 4 ml of a solution of $1x10^7$ spores of *Verticillium dahliae* on 1 Jun 07. Each tree was injected with 1 ml into the cambium in each of 4 locations near the root crown and/or graft union using Arborsystem's injection method including the Wedgle Tip but without Wedgechecks. Some leakage of the spore solution occurred upon injection and/or after removal of the Wedgle Tip. Noninoculated trees were injected with sterile distilled water. Trees were not pruned and no fertilizer was applied to the trees in either year. The entire block of trees was irrigated throughout the summer months. Symptom severity, which included defoliation and dry, shriveled leaves was taken on 30 Aug 07 and 27 Sep 07.

In 2006 both cultivars showed signs of drought stress but symptoms were much more pronounced in 'Sango Kaku' than 'Oshio Beni'. 'Sango Kaku' developed extensive trunk cankers and was not used for data collection. Initial symptoms of *Verticillium* wilt were observed 78 days after inoculation on 17 Aug as flagging branches and dried leaves. The noninoculated control in block three had some symptoms and was adjacent to an inoculated tree with 100% symptom severity. All treatments in that replicate were not included in the final data analysis. Tree to tree variation was high and thus no significant differences were detected in the first rating on 30 Aug. Noninoculated trees had significantly less symptom severity compared with all other treatments. Trees treated with Phyton 27 for 1 or 2 years had symptoms that were not significantly different from the nontreated, inoculated control.

| Treatment & Rate/10 gal | Application Date* | | Symptom Severity (%)** | |
|---|---|---|---|---|
| | 2006 | 2007 | 30 Aug 07 | 27 Sep 07 |
| Nontreated, noninoculated …… | -- | -- | 0.4 | 3.6 b |
| Nontreated, inoculate……. | -- | -- | 16.0 | 24.8 a |
| Foliar application | | | | |
| Phyton 27 at 2.5 fl oz……. | -- | X | 21.8 | 26.0 a |
| Phyton 27 at 2.5 fl oz……. | X | X | 14.0 | 19.4 a |
| Drench application | | | | |
| Phyton 27 at 2.5 fl oz……. | -- | X | 18.4 | 19.4 a |
| Phyton 27 at 2.5 fl oz……. | X | X | 16.6 | 13.0 ab |

* Treatments were applied on 27 Apr 06 (leaf expansion), 6 Jul 06, 29 Sep 06, and 20 Apr 07 (leaf expansion), 11 Jul 07 and 26 Sep 07.

** Means followed by same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Means without any letters did not differ significantly.

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