

INITIAL EXPERIMENTS TO CONTROL BACTERIAL BLIGHT OF MAPLE, 2000 - 2001: The objective of the trial was to compare control of copper resistant *Pseudomonas syringae* pv. *syringae* with different bactericides and a cultural disease control method of covering trees with plastic. Plastic (6 mil) was used to cover 4 sets of 2 adjacent, randomly selected trees on 25 Oct 00. The plastic was supported by 18 foot pvc tubing arched over plants and completely surrounded the top and sides of the trees down to the ground. Bactericide and cultural treatments were arranged in a randomized complete block design in a block of ‘Sango Kaku’ and ‘Oshio Beni’ maples planted in 1999 on a 5 x 20 ft spacing. Each bactericide treatment consisted of 4 single tree replicates (4 trees/treatment) for each cultivar. Actigard 50 WG was applied using a solo backpack sprayer at a concentration of 1 oz/100gal water. This treatment was applied on 12 and 19 Oct 00 when leaves were still on trees. All other bactericides were applied on 27 Oct 00 and 14 Nov 00, just before and just after leaves fell from the trees, using a solo backpack sprayer. All treatments were applied to runoff with approximately 0.5 gal of a spray suspension applied to each set of 4 trees. All trees in the block were inoculated on 23 Nov 00 with an equal part mixture of 3 pathogenic, copper resistant, streptomycin sensitive strains of *Pseudomonas syringae* pv. *syringae* isolated in 1992 and 1993 from diseased ‘Sango Kaku’ maples (14A92, 115A93 and 123B93). Inoculum was applied using a solo backpack sprayer at a concentration of 1×10^8 cfu/ml and a rate of 0.21 qt/tree giving a final inoculum dose of 2×10^{10} cfu/tree. A 38-0-0 slow release fertilizer was broadcast around each tree on 26 Mar 01 at a rate of 100 lb/A. From 12 Oct 00 through Nov 00 only 4.01 in of rain fell and there were 14 days with low temperatures at or below 32°F. The first killing frost was on 12 Nov 00 with a low temperature of 23°F. Incidence of bacterial blight was evaluated on 6 Feb 01 and 8 Mar 01 by recording the number of shoots (that grew last year) that had turned black. The entire canopy was rated for percent dieback on 6 Apr 01.

The dormant season was characterized as extremely dry with well below average rainfall. Bacterial blight was first observed around 1 Jan 01 as a black dieback of normally red shoots on ‘Sango Kaku’. Most symptoms were found on last season’s growth but many cankers extended down into 2 or 3 year old growth. ‘Oshio Beni’ trees developed few if any symptoms all season. The average number of blighted 1-year-old (‘Sango Kaku’) shoots per tree was not significantly different among treatments for any disease rating (Table 1). No phytotoxicity was observed on any plants in any treatment.

Some ‘Sango Kaku’ trees continued to have active shoot growth into the fall and were noted on 12 Oct 00. These actively growing shoots were frozen during the first hard freeze of the dormant season on 12 Nov 00. Using a paired, 2 tailed t-test (n=8), trees with active fall growth had significantly more blighted shoots on 6 Feb 01 than trees without active fall growth (Table 2). Although not significant, this trend was also observed in the other two disease ratings.

Table 1. Bactericide data for ‘Sango Kaku’ only.

| Treatment & Rate/100 gal | Ave. number of blighted 1 year old shoots per tree* | | % dieback of whole canopy * |
|------------------------------------|---|----------|-----------------------------|
| | 6 Feb 01 | 8 Mar 01 | |
| Nontreated | 32 | 89 | 10 |
| Plastic Shelters | 39 | 49 | 3 |
| Agri-mycin 17 WP 1 lb | 6 | 18 | 2 |
| Kocide 2000 T/N/O DF 0.75 lb | 22 | 37 | 6 |
| NuCop 50DF 1 lb..... | 16 | 35 | 13 |
| Junction DF 1 lb | 10 | 13 | 2 |
| Pentathlon 75 DF 1 lb..... | 25 | 59 | 9 |
| Actigard 245 at 1 oz..... | 61 | 99 | 9 |
| Moisturin 10 gal (10%)..... | 2 | 13 | 2 |
| Moisturin 5 gal (5%)..... | 101 | 178 | 18 |

* Means were not differ significantly based on Fisher’s protected LSD (P=0.05).

Table 2. Fall growth data for ‘Sango Kaku’ only.

| | Ave. number of blighted 1 year old shoots per tree* | | % dieback of whole canopy * |
|--------------------------------|---|----------|-----------------------------|
| | 6 Feb 01 | 8 Mar 01 | |
| Trees without fall growth..... | 32 | 52 | 7 |
| Trees with fall growth..... | 77 * | 125 | 18 |

* Means significantly different based on a 2 tailed, paired t-test (P=0.05).