APPLE (*Malus* × *domestica* 'Idared')
Fire blight; *Erwinia amylovora*

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Field evaluation of materials for control of fire blight infection of apple shoots, 2001.

The efficacy of a growth regulator (Apogee), an SAR inducer (Messenger) and a biological control (Serenade) was evaluated for control of shoot blight on inoculated Idared trees in a research orchard at Geneva, NY. Agrimycin 17 (streptomycin) was also included in the evaluation. Treatments were replicated five times in a randomized complete block design, and products were applied to runoff to entire trees at timing(s) before and after inoculation, depending on the nature of products, with a single nozzle handgun at 10.3 kg cm^{-2} (150 psi). In addition two treatments with Apogee were applied by an airblast sprayer to six single tree replicates per treatment in the same orchard on the same dates. Tips of 15 15-30 cm long shoots on each tree in both trials were inoculated on 14 Jun by cutting the two youngest leaves transversely with scissors dipped in 1×10^7 CFU/ml of *E. amylovora* strain Ea. 273. Six wk after inoculation the necrotic lesion length (x) and the total shoot length (y) on inoculated shoots were determined, and x/y x 100 (% shoot length blighted) was used as the disease parameter.

Weather in 2001 was quite dry, and trees were not irrigated. Shoot growth was less vigorous than usual, and shoots were less susceptible to development of long lesions than in the wet 2000 season. Untreated inoculated shoots developed a mean of 75.0% shoot length blighted. In the handgun-applied trial, the low and high rates of Apogee each gave significant control, with the high rate [two applications of 22.5 g/50L (12 oz/100 gal)] being numerically more effective. None of the Agrimycin, Messenger or Serenade treatments resulted in significant reduction in lesion length. In the trial applied by airblast sprayer, Apogee treatments resulted in a similar pattern of significant control as in the handgun trial, but overall levels of control seemed superior. The two applications of 22.5g Apogee/50L by handgun resulted in 55% reduction in shoot length blighted and by airblast in 68% reduction.

Material(s)*	Rate (g/50L)	Timing of application(s)	% shoot length blighted**
Handgun application			
None (inoculated)	-	.....	75.0 a
Agrimycin 17W	14.7	1 day pre-inoc	73.3 ab
Apogee 27.5DF	22.5	Petal fall and 3 wk later	51.6 bc
Apogee 27.5DF	45.0	Petal fall and 3 wk later	34.0 c
Messenger EC	33.7	1 wk pre-inoc	59.6 ab
Messenger EC	33.7	3 wk and 1 wk pre-inoc	71.3 a
Messenger EC +	33.7	1 wk pre-inoc	
Serenade WP	113.5	1 day pre-inoc	76.0 a
Messenger EC	33.7	7 days pre-inoc	
Agrimycin 17W	14.7	1 day pre-inoc	63.1 abc
Serenade WP	113.5	1 day pre-inoc	75.0 a
Serenade WP	113.5	2 wk, 1 wk, 1day pre-inoc	
		1 day post-inoc	67.8 ab
Airblast application			
None (inoculated)	-	.....	47.0 a
Apogee 27.5DF	22.5	Petal fall and 3 wk later	23.0 b
Apogee 27.5DF	45.0	Petal fall and 3 wk later	14.0 bc

* All treatments included 15 ml Regulaid surfactant/50L, except Messenger (100 ml Reguard/50L) and Serenade (none).

** Means within a column followed by the same letter did not differ significantly (P <0.05) as determined by Waller-Duncan K-ratio t test. Handgun and airblast experiments were analyzed separately.