

Efficacy of Oxolinic Acid and Other Bactericides in Suppression of *Erwinia amylovora* in Pear Orchards in Israel

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The efficacy of oxolinic acid (at 200 and 300 μg a.i./l) and of several antibiotic compounds (streptomycin sulfate at 100 μg a.i./l, glycolide B at 700 μg a.i./l, kasugamycin at 80 μg a.i./l and gentamicin sulfate at 30 and 60 μg a.i./l) against *Erwinia amylovora*, the causal agent of fire blight in pears, was evaluated in 43 orchard experiments in 1997–2000 in Israel. In addition to the above orchard experiments, the efficacy of the bactericides was tested in five experiments with artificial inoculation. Natural fire blight symptoms were observed in 16 of the 43 experiments; in 13 of them, disease intensity and its distribution among the experimental plots provided a basis for data analysis, leading to reliable conclusions concerning the efficacy of the tested bactericides. Oxolinic acid at 300 μg a.i./l was highly effective against *E. amylovora* and reduced disease severity significantly in all experiments, as compared with the untreated plots; however, a concentration of 200 μg a.i./l was not effective in some cases. Among the tested antibiotics, only gentamicin sulfate was as effective as oxolinic acid. Results of the artificial inoculation experiments corroborated those obtained in the naturally infected orchards. The pre-infection activity of oxolinic acid was determined on blossom clusters that were sprayed with the bactericide before inoculation. Control efficacy on blossom clusters sprayed 1–4 days before inoculation ranged from 68% to 80%, a level which did not differ significantly from that observed on blossom clusters sprayed on the day of inoculation (80% control). The postinfection activity of oxolinic acid was determined on blossom clusters that were sprayed with the compound after inoculation. Oxolinic acid was as effective when applied 1 or 2 days after inoculation as when it was applied on the day of inoculation; however, application of the bactericide 3 days after inoculation no longer resulted in significant disease suppression. Oxolinic acid has been used commercially in Israel since 1998 with appreciable success.

KEY WORDS: *Erwinia amylovora*; fire blight; disease management; bactericides.

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