Evaluation of microbiological products to control grey mould in strawberries

A. Balode

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Abstract

Within small distances, climate is subject to considerable variations – from heavy precipitation and limited sunshine to moderate, dry and warm. Throughout the growing season, damp and cold conditions promote spreading of *Botrytis cinerea*. It is necessary to both suppress the pathogens and to reduce environmental damage; therefore, experimentation with and application of microbiological products have a promising future in horticultural production. The strawberry (*Fragaria × ananassa*) cultivar 'Polka' was used for this trial. Two microbiological products were evaluated for their ability to reduce *Botrytis* infection. BioMikss is a mixture of microorganisms that contains cells of 7 various bacteria strains (*Azotobacter chroococcum* E-t, *Polyangium cellulosum* 5-t, *Polyangium cellulosum* 56, *Pseudomonas putida* 48-t, *Rhizobium meliloti* 15, *Streptomyces cellulosae* D and *Streptomyces griseoviridis* P-t) and cells of two various fungus strains (*Trichoderma harzianum* 7-t and *Trichoderma viride* A-L), and Trihodermin (*Trichoderma harzianum* 8-21 and *Trichoderma viride* 1-5). Two forms of BioMikss and Trihodermin were used: dry powder (10^3-10^5 CFU g^{-1}) and solution (10^7-10^9 CFU ml^{-1}). In the field trial, either a dry powder form (10 kg ha^{-1}) was applied as a soil treatment or a water suspension (300 L ha^{-1}) to plants three times during the growing period. The results proved that BioMikss in solution form was the most effective for reducing disease incidence under field conditions. When compared to control plants, treated plants showed significantly higher resistance to *Botrytis cinerea* and increased yield of treated strawberry was observed. The results indicated it is important to apply microbiological products before *Botrytis cinerea* infection has started to spread.