

POSSIBLE AND POTENTIAL USE OF *TRICHODERMA ATROVIRIDE* SC1 AS BIOFUNGICIDE

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Several strains of *Trichoderma* species are registered and used as active ingredients in biofungicides. The activity of *Trichoderma* strains is based on different mechanisms (i.e. competition for space and nutrients, antibiosis, parasitism, induction of resistance). *Trichoderma atroviride* SC1 is characterized by a fast and persistent colonization of soil, plant residues, bark and pruning wounds, and antagonism against pathogen is mainly based on niche exclusion and direct antibiosis by production of cell wall degrading enzymes. Efficacy and persistence of *T. atroviride* SC1 against root rots and wood diseases were evaluated in several trials. On strawberry, blueberry and grapevine potted plants, artificially inoculated with *Armillaria* spp., *T. atroviride* SC1 significantly reduced the infections, with efficacy ranging from 67 to 100%. Protection of wounds in nurseries and vineyards is a key point in preventing infections by trunk pathogens. After winter applications *T. atroviride* SC1 can colonize wounds, persisting for several months and protecting plants during the growing season. In trials in nurseries *T. atroviride* SC1 colonization was high and stable (approximately 100% at the end of the season). Other potential targets of this biofungicide are root rots and canker diseases of apple tree. Preliminary trials under controlled conditions show that *T. atroviride* SC1 could limit *Rosellinia necatrix* infections on roots and protect wounds from pathogens as *Phomopsis* spp., *Diplodia* spp., *Neonectria galligena*, etc. Optimal formulation is crucial in a biofungicide especially to protect conidia, promote germination and increase rain fastness. Different carriers and activating substances are being evaluated to improve enzyme production and increase efficacy and persistence of *T. atroviride* SC1. Based on its mechanism of action *T. atroviride* SC1 represents an interesting strain for further developments in the protection of wounds and roots from other microorganism and in the reduction of fruit rot infections.