

Control of *Fusarium* in chrysanthemum with sewage sludge, biofertilizer, hydrolyzed fish, chitosan and *Trichoderma*

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Fusarium oxysporum f.sp. *chrysanthemi* can cause severe losses in chrysanthemum (*Chrysanthemum morifolium*) in Brazil. This study was done to evaluate the efficacy of sewage sludge, biofertilizer, hydrolyzed fish, chitosan, and *Trichoderma harzianum* to control *Fusarium* in chrysanthemum in substrate composed of pine bark (pH 5.5; EC 0.6 μ S) obtained from pots of dead chrysanthemum plants. The infested substrate was or was not sterilized in water vapor (2 h; 100°C); with sewage sludge incorporated (0, 10, 20% v/v). Into these mixtures were added (or not) biofertilizer (14 ml/l), hydrolyzed fish (10 ml/l) and *Trichoderma* (10^8 conidia/ml), transferred to pots (3 l) and planted with 'Yellow-Marino' chrysanthemum seedlings. For all treatments, half of the pots were sprayed with chitosan (200 mg/l) weekly. A multifactorial randomized experimental design with 24 replications, totaling 2560 pots, was adopted. The plants were grown in a commercial greenhouse and evaluations for disease severity (1=healthy plant; to 5=dead plant or wilted leaves) were performed at 8, 12, 14, 18 weeks after transplanting. In addition, plants were classified in commercial (class I, II, III) or not, after 18th week. The level of disease control was directly proportional to sewage sludge concentration incorporated in the substrate. Biofertilizer, hydrolyzed fish, chitosan and *Trichoderma* did not control the disease. In general, disease severities were higher in plants growing in sterile substrate when compared the plants growing in non-sterile substrate.