

Breakthrough in protecting bananas from Panama disease

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Fungicides and protection of bananas against Panama disease. A Whole-plant



symptoms of Panama disease at 56 days after root inoculation with chlamydospores, followed by 2 applications of fungicides or the solvents 0.14% $(v v^{-1})$ DMSO or 0.16% $(v v^{-1})$ methanol in water (Control (+)). The negative control (Control (-)) was only treated with the solvent. B Corm necrosis in bananas at 56 days after root inoculation with chlamydospores, followed by 2 treatments with fungicides. Control (+) indicates inoculation with spores, followed by treatment with 0.16% (v v^{-1}) methanol (positive control). Scale bar = 2 cm. C Quantitative assessment of darkening of corm tissue after inoculation with chlamydospores followed by 2 treatments with fungicides. Banana corm necrosis was analyzed 56 days after the first treatment. Light blue: Controls; dark blue: fungicide treatments. Bars in (C) show mean \pm SEM from 18–24 measurements of 9–12 plants from 3–4 experiments; statistical comparison in (C) used Student's t-testing with Welch correction; n.s. = non-significantdifference to respective control at two-tailed error probability of P = 0.7074(Mancozeb) and P = 0.1871 (Copper); * = significant difference to control at two-tailed at P = 0.0452 (Chitosan); ** = significant difference to control at twotailed at P = 0.006 (Captan); **** = significant difference to control at twotailed P

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