Influence of Phytophthora root rot on mineral nutrient concentrations in avocado leaves

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Abstract
Leaf nutrient concentrations were measured in avocado trees (Persea americana Mill. cv. Fuerte) which were recovering from root rot (Phytophthora cinnamomi Rands) following treatment with fungicides. Trees with visible Phytophthora root rot symptoms had higher leaf chloride concentrations in 4- month-old leaves (0.35%) which increased to 0.5% in 8-month-old leaves, compared with chloride concentrations in leaves from trees that had regained health of 0.13-0.27% and 0.09-0.24% in 4- and 8-month-old leaves respectively. Leaf tip and marginal burn symptoms in untreated control trees were present in leaves with 0.5% chloride content. Trees which were previously infected, but had regained health, had higher leaf concentrations of nitrogen (2.86-3.02%), phosphorus (0.18-0.19%), sulfur (0.24-0.27%), zinc (33.2 mg kg-1) and boron (13.4-17.7 mg kg-1) than leaves on those trees showing severe root rot symptoms (2.59% nitrogen, 0.16% sulfur, 24.4 mg kg-1 zinc, and 8.1 mg kg-1 boron). Fungicidal treatments, which included the injection of phosphite, potassium hydroxide and zinc sulfate into trees, did not contribute significantly to leaf phosphorus, potassium or zinc levels.

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