



Assessment of Copper and Zinc in Soils of a Vineyard Region in the State of São Paulo, Brazil

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Agricultural management with chemicals may contaminate the soil with heavy metals. The soil acidification may increase the bioavailability of copper and zinc in soils worsening its contamination condition. The objective of this study was to verify the concentration of copper and zinc in soils of a vineyard region, including the acidification of the samples for simulating an acid rain. The study was developed in an area of vineyard cultivation, and with other uses in the adjacencies, in the State of São Paulo, Brazil. Soil samples were collected and GPS located under different uses and coverings. The metal concentrations in the soils were determined using the DTPA and CaCl₂ 0.01M as extractants, to verify the bioavailability, and strong acid to verify total forms. The Cu and Zn extracted by DTPA was considered high in most of the samples, and was larger in the areas cultivated with vineyards that had been under the application of fungicides for several decades. The total forms were higher in vineyard soils. The Cu and Zn extracted by CaCl₂ did not have good correlation with vineyards and with other metals forms. The results confirmed the enrichment of the soil with Cu and Zn due to the use and management of the vineyards with chemicals for various decades. The zinc forms may be high in vineyards and in soils with natural vegetation.