

CHARACTERIZATION OF SOILS CULTIVATED WITH AVOCADO (*Persea americana* Mill.) IN THE REGION OF VALPARAÍSO, CHILE.

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In the Region of Valparaíso, Chile, the highest number of avocado plantations (*Persea americana* Mill.) is found, with an average yield of 9 Ton ha⁻¹, far below the potential yield (25 Ton ha⁻¹). This problem would occur mainly because soils where the avocado trees are planted present physical and/or chemical characteristics limiting their growth (high bulk density, low macroporosity, high pH, and high amount of CaCO₃). Hence, the objective of this work was to determine the effect of chemical properties in planted soils and their effect on ferric chlorosis. Orchards planted with avocado were determined using the Geographic Information System (GIS). Twelve orchards distributed in seven soil series representing the 36% of the planted area were selected. In each orchard a survey of productivity and soil and leaf chemical analysis was carried out. The results show that 67% of the cultivated area is in soil series with pH higher than 7.0; and a 15% has CaCO₃ higher than 2%. Iron chlorosis appears in soils with Fe-DTPA and Mn-DTPA contents lower than 20 mg kg⁻¹ and pH-H₂O equal or higher than 7.5. Soils with bicarbonates and CaCO₃ showed a higher degree of chlorosis, and bicarbonate content equal or greater than 1 mmol- L⁻¹ affected yield. Orchards with symptoms of iron chlorosis presented an average yield equal or lower than 5 t ha⁻¹.