NITRATE LEACHING IN TWO NUTRITIONAL AND WATER MANAGEMENT SYSTEMS OF AVOCADO IN MICHOACAN

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Nitrogen fertilizing is a process consuming 45% of the fertilizer applied in orchards. The application of nitrogen fertilizing in July and October coincides with the rainfall season; therefore, nitrogen losses are increased, causing environmental pollution and low efficiency of fertilizer use. The aim of this work was to evaluate two nutritional and water management systems and their effect on inorganic nitrogen outside avocado roots. The experiment was made in Tancitaro, Mich., from January 2001 to December 2006 in a twelve-year-old Hass orchard, planted at a distance of 10 x 10 meters. Treatments were fertigation and hose irrigation. In the pressurized treatment, irrigation was carried out every 8 days with 200-500 L of water, depending on the month; while hose irrigation was conducted for 5-12 minutes every 18-21 days.

In both treatments, fertilizing had an annual average of 220 kg N ha^{-1}, maintaining as established P and K. Suction tubes were installed for monitoring the NO_3 concentration at 30, 60 and 90 cm deep in soil. Results indicated that each year pressurized irrigation management yields 25 to 35 ppm of N-NO_3 and hose irrigation reaches 80 to 100 ppm of N-NO_3.