

## Removal of N, P and K in three grape cultivars in El Tocuyo, Lara state, Venezuela

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### Abstract

Nitrogen, phosphorous and potassium concentrations and contents in 'Queen', 'Tucupita' and 'Villanueva' grapevines were quantified in El Tocuyo, Lara state, Venezuela, in order to determine extraction levels of these minerals during the productive cycle of the plant. This was done by determining the total dry weight and assessing the nutrient concentrations in fruit stem and leaves. The cv. Tucupita showed the highest nutrient extraction. Leaf blade was the plant part that removed the largest amount of nitrogen, while potassium was mainly removed by must and canes. Nitrogen removal varied between 44.7 and 38.3 kg/ha per cycle. The greatest phosphorus and potassium removal was 4.8 and 50.3 kg/ha, respectively, in the three cultivars. These results may contribute to fertilization program planning of comparative vineyards established in the tropical region.

**Key words:** Grapevine, grape, mineral nutrition, nutrients, tissue analysis.

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