

## Nutrient concentration during the stages of growth of sorghum as a response to nitrogen and phosphorus fertilization in Guarico state, Venezuela

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### Abstract

The objective of this research was to conduct studies on the nutrient concentration in sorghum as response to nitrogen and phosphorus fertilization. The experiment was carried out at the "Lairen II" farm of Chaguaramas, El Sombrero, Guarico state. Nine treatments were evaluated as a result of the following factors: Nitrogen (N) (0, 60 and 120 kg N/ha), phosphorus (P) (0, 60, and 120 kg P<sub>2</sub>O<sub>5</sub>/ha). Due to the adequate levels of K in the soil a constant rate was applied to all treatments. A randomized factorial design 3<sup>2</sup> was used with 9 treatments and 3 replications and a total of 27 experimental units. The variables measured were: total dry matter and leaves, stem and panicles (kg/ha) and samples were taken at 26, 36, 47, 56, 69 and 90 days after seed emergency. Subsamples of the nutrient concentration in vegetal material were measured in terms of kg/ha. Results showed a progressive decrease of foliar concentration of nutrients during the crop cycle. The accumulation of nitrogen in the fertilized plants with 60 and 120 kgN/ha had an increment of 51.86 and 46.28 % compared to the non fertilized plants. The phosphorus accumulation showed a high dependency on the N fertilization and there was a highly significant difference at the rate of 120 kgN/ha compared to the rest of the treatments in the samples from 36 DDE until the 90 DDE.

**Key words:** *Sorghum*, nutrient concentration, fertilization, nitrogen, phosphorus.

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