

Nutrient concentration in sorghum, *Sorghum bicolor* (L.) leaves and its relation to the nutritional sufficiency diagnosis

F. Quintero¹ y E. Casanova²

Abstract

Due to the lack of research on sorghum fertilization, it was considered as an objective of this research, to conduct studies with N and P levels and the effect on nutrient concentration in sorghum leaves and the relation with the nutritional sufficiency diagnosis. The experiment was carried out at the farm "Lairen II" of Chaguaramas, El Sombrero, Guarico state, Venezuela. 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 P₂O₅/ha). A randomized factorial design 3² was used. A total of 9 treatments and 3 replications produced 27 experimental units. The following variables were measured: N, P and K concentration in the index leaf at 60 days after emergency in each experimental unit and grain yield at harvest time. The results showed that N fertilization had a highly significant effect on N concentration in the index leaf. P fertilization had a significant effect on N and P concentration. The increment of 0.1% in the N concentration in the index leaf at flowering produced an increment in grain yield of 1099 kg/ha. Using the absolute yield (kg/ha) and the relative yield (% of the maximum yield), it was considered valid to express the following sufficiency N concentration values: < 2.3% (low), from 2.3 to 3.0% (enough) and > 3% (high).

Key words: nutrients, leaves, critical levels, sorghum, *Sorghum bicolor*.

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1. PEQUIVEN, Unidad de Negocios de Fertilizantes, Valle de La Pascua, Estado Guárico.

2. Instituto de Edafología, Facultad de Agronomía, Universidad Central de Venezuela, Maracay AP 4579, Aragua, Venezuela. *Enviar correspondencia a Eduardo Casanova