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“Development on the margin”

Preliminary Evaluation of Improved Exotic Pigeonpea Cultivars in Limpopo (South Africa)

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Abstract

Pigeonpea [*Cajanus cajan* (L.) Millsp.] is an important grain legume that originated from the Indian sub-continent. In Central and East Africa, it is grown mainly by smallholder farmers for its multiple benefits which include ability to improve soil fertility, human food and income generation. The crop is highly tolerant to drought making it appropriate for production in semi-arid regions. This study was designed to evaluate the agronomic performance of exotic pigeonpea germplasm particularly grain yield as well as the yield components in order to identify the cultivars suitable for production in the northern dry land belt of South Africa. A field experiment, consisting of 19 medium-duration exotic genotypes and one check cultivar, was conducted during the 2008/2009 cropping season at Thohoyandou (21° 58' S; 30° 26' E). The experiment was laid out as a 4 × 5 lattice design with three replications. There were significant ($p < 0.05$) differences among the genotypes in terms of the number of pods per plant, seed size and grain yield. The check cultivar produced the smallest grains (9.7 g per 100 grains). At least five cultivars produced >1.50 t ha⁻¹. Cultivar ICEAP 01508/10 obtained the highest (2.36 t ha⁻¹) yield. The study demonstrated the potential of the crop in the semi-arid region of Limpopo as represented by the agro-ecological conditions at the testing location. It would be interesting to embark on a genetic improvement programme aimed at increasing particularly the grain yield in order to maximise the benefits to farmers in the region as well as increase household food security.

Keywords: Agronomic performance, germplasm, grain yield, yield components