Yields and qualities of pigeonpea varieties grown under smallholder farmers' conditions in Eastern and Southern Africa

Pigeonpea is one of the few crops with a high potential for resource-poor farmers due to its complementary resource use when intercropped with maize. A three year comprehensive comparative study on the performance of six pigeonpea (Cajanus cajan) varieties on farmers' fields in Eastern and Southern Africa where intercropping with maize is normal practice, was undertaken. The varieties were tested for accumulation of dry matter (DM), nitrogen (N) and phosphorus (P) in all above-ground organs for three years under farmers' conditions. The study revealed that the latest introduced ICEAP 00040 outperformed all the other tested varieties (ICP 9145; ICEAP 00020, ICEAP 00053, ICEAP 00068, and a local variety called "Babati White") under farmer-managed conditions. The harvest indices (HI), ranging from 0.08-0.15 on dry matter (DM) basis, were relatively low and unaffected (P> 0.05) by the environmental variation. The N harvest index (NHI) was 0.28 and P harvest index (PHI) was 0.19. The better responses of ICEAP 00040 to favourable conditions could however only be realised in a minority of cases as yields generally were low. These low yields are still a major challenge in African smallholder agriculture as pulses play an important role in soil fertility maintenance as well as in the household diets.

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