Strengthening Sorghum-Legume Production Systems by Enhancing Access to Improved Stress Tolerant Varieties

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ABSTRACT
Sorghum is an important local staple and food security crop for communities in semi-arid areas of western Kenya but its yield is highly constrained by various environmental stresses, especially drought, soil acidity and associated nutrient deficiencies. Intercropping sorghum with suitable legumes is a recommended agro-ecological intensification practice that has potential to assure food and nutrition security among smallholder farmers. Availability and access to seed of multiple stress tolerant sorghum and legume varieties remains a challenge to most smallholder farmers in Kenya. This study was undertaken to: (i) Disseminate multiple stress tolerant sorghum cultivars targeting Al toxicity & low available P, drought, Striga, (ii) select farmer-preferred legumes for tolerance to aluminium toxicity and low available P and (iii) promote adoption of the tolerant cultivars through farmer networks and community-based organisations. Twelve multiple stress tolerant sorghums developed through participatory variety selection were promoted among 165 farmers at Sega, Matayos and Koyonzo. Commonly grown groundnut, common bean, cowpea, soybean and bambara cultivars identified as tolerant to aluminium toxicity were evaluated alongside the sorghum under farmer management in intercrop or as sole crops. Farmers ranked the cultivars based on agronomic properties, performance and preference. More than 80 % of the farmers ranked the improved cultivars/varieties as high yielding and preferred them over local checks. Involving a large number of farmers allied to local community based organisations in our research has enhanced varieties’ adoption.

Keywords: Food and nutrition security, sorghum-legume integration, community-based seed systems, orphaned crops