



Cowpea in marginal cropping areas of South Africa

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Cowpea (*Vigna unguiculata*) is a versatile crop primarily cultivated in the semi-arid regions of tropical Africa. Cowpea grains are a relatively cheap source of dietary protein. The dry grains of cowpea are used as edible seed and its young leaves, fresh pods and green seeds are also used as a vegetable (*morogo*) and eaten with porridge (*pap*).

Cowpea also provides fodder for livestock and is an important rotation crop because it improves soil fertility through its ability to fix atmospheric nitrogen.

Given the global climatic change, cowpea has the potential to contribute to food security and poverty reduction in Africa. In South Africa, cowpea is traditionally grown in Limpopo, Mpumalanga, North West Province and KwaZulu-Natal. However, the yield obtained by subsistence farmers, who grow old varieties and don't apply proper production practices, is very low – ranging from about 250 kg/ha to 1 000 kg/ha.

The main cowpea production constraints in South Africa include lack of improved varieties and good quality seed, insect pests such as aphids, thrips, pod-sucking bugs, blister beetles and bruchids.

A greater proportion of land in smallholder farming systems is degraded. Crops like cowpea are believed to be adapted to a wide range of ecological niches, low input agriculture and may have tolerance to abiotic and biotic stresses. The dual-purpose nature of cowpea makes it an important crop for inclusion in food and nutrition security as well as climate change adaptation strategies for South Africa.

The Agricultural Research Council (ARC) identified cowpea as a potential crop to diversify the food production base and reduce

food and nutrition insecurity, particularly for resource poor households in marginal cropping areas.

In 2013/2014 and 2014/2015, six cowpea genotypes were evaluated for their adaptability and production potential under dryland conditions, through on-farm participatory variety testing and demonstrations.

The varieties were grown in drought-prone areas: Lotlhakane village – outside Mahikeng in the North West Province, Tooseng Village – outside Lebowakgomo and Metz village, Maruleng in Limpopo and Casteel village which is near Bushbuckridge in Mpumalanga.

Farmers' selection criteria varied, some preferred multipurpose use, early maturity or fodder/leaf yield, whilst others preferred grain yield or combinations of two or more traits.

Farmers in Lotlhakane area preferred new candidate cultivar 98K-476-8 and check variety PAN 311. In Tooseng village, farmers chose PAN 311 and 98D-1399, while in Metz farmers chose ITOOK 1263 for grain production and Bechuana white for fodder/leaf production. Casteel farmers chose ITOOK 1263 for grain and their local variety for fodder.

Over the two seasons, the average grain yield of the better performing variety, ITOOK 1263, ranged from 970 kg (at Tooseng) to 2 500 kg (at Metz). It was demonstrated that by introducing improved varieties and management practices, the yield obtained on farmers' fields can be improved.

Post-harvest handling, value adding and linking farmers to markets are the key activities required to promote cowpea in these and similar areas. ■



- ▶ 1: The Casteel village cowpea demo trial.
- ▲ 2: A cowpea demo trial at Metz village.
- ◀ 3: The Tooseng village demo trial.