



Tropentag, September 16-18, 2015, Berlin, Germany

“Management of land use systems for enhanced food security:  
conflicts, controversies and resolutions”

## Cowpea Breeding

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### Abstract

Cowpea (*Vigna unguiculata* (L.) Walpers) is the most commonly grown grain legume in the dry savannah regions of sub-Saharan Africa. It is also an indigenous crop to these parts. It is grown for the protein rich grains and fodder for livestock. The bulk of cowpea produced is consumed in the sub-region hence very little international trade is associated with the crop. The productivity of the crop in SSA is hampered by a number of abiotic and biotic stresses some of which are drought, low soil fertility, insect pests, fungal, bacterial and virus diseases. Mean grain yield is less than 600 kg ha<sup>-1</sup> which is a far cry from its potential of up to 2.0 tons ha<sup>-1</sup>. Being a legume, cowpea can fix most of its needed nitrogen in the root nodules. Breeding activities, taking advantage of the world cowpea germplasm collection maintained at IITA's genebank, are ongoing with the aim of increasing the crop's productivity in African farmers' fields where limited inputs are applied by the generally resource poor farmers who produce the most amount of the crop. Through conventional breeding procedures it has been possible to develop and release to farmers varieties with resistance to insect pests such as aphid (*Aphis craccivora*), flower bud thrips (*Megalurothrips sjostedti*), diseases such as *Cercospora* leaf spot, macrophomina, bacterial blight, and the parasitic plants *Striga* and *Alectra*. In addition, these varieties possess traits preferred by farmers and consumers. There are varieties that mature as early as 60 days after planting as well as those with significantly reduced cooking time, helping to conserve energy. Recently efforts have commenced to facilitate progress in the breeding process by applying new breeding tools such as marker assisted selection. To this end genetic linkage maps have been generated for cowpea and molecular markers associated with important quantitative trait loci (QTL) like resistance to macrophomina, bacterial blight, flower thrips, foliage thrips, aphids and drought were identified. Some of the markers have been validated and are currently being used to introgress desirable traits into improved varieties using marker assisted backcrossing (MABC) and marker assisted recurrent selection (MARS).

**Keywords:** Flower bud thrips, germplasm collection, insect pests, marker assisted backcrossing, marker assisted recurrent selection, *Striga*, *Vigna unguiculata*