Cruickshank (1999) reported that seed moisture content was crucial in the incidence of aflatoxin contamination and 18 to 28% moisture content was a critical level suitable for aflatoxin production. Crop Link (1999) mentioned that seed moisture content of 15 to 30% and soil temperature higher than 28∞C during pod-filling period in the pod zone favored aflatoxin contamination. Cole et al. (1995) reported that aflatoxin contamination was observed when the crop was subjected to water shortage for 30ñ50 days during pod maturation period and high (average 29ñ31∞C) soil temperature. In our study, though the pods were under favorable soil temperature for aflatoxin production (28ñ30∞C) around harvest, the seed moisture content in all the genotypes was outside the favorable range. It was higher before harvest and lower after sun drying. Hence, low aflatoxin contamination was observed in all genotypes (Table 4) in spite of seed infection by *A. flavus* ranging between 3.3 and 14.7% (Table 2).

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Participatory Selection of Groundnut Genotypes Under Rainfed Conditions in Kurnool District of Andhra Pradesh

A Ramakrishna[1,*], SP Wani[1], Ch Srinivasa Rao[1], G Tirupathi Reddy[2] and **M Ramarao[3]** (1. ICRISAT, Patancheru 502 324, Andhra Pradesh, India; 2. Awakening People Action for Rural Development (APARD), Kurnool 518 002, Andhra Pradesh, India; 3. District Water Management Agency (DWMA), Kurnool 518 002, Andhra Pradesh, India)

[*]Corresponding author: a.ramakrishna@cgiar.org

Groundnut (*Arachis hypogaea*) has the second largest cultivated area of 241,202 ha (32% of the total cultivated area) in Kurnool district of Andhra Pradesh, India after Anantpur district (Directorate of Economics and Statistics 2001). The productivity is about 1.0 t ha^{-1}, which is lower than the average productivity of Andhra Pradesh (1.15 t ha^{-1}) and far below the potential productivity of 4ñ5 t ha^{-1} (McDonald 1984). Non-availability of suitable high-yielding varieties and non-adoption of improved soil, water and nutrient management (SWNM) practices are the main causes of low productivity. Groundnut is sown in the rainfed uplands during the rainy season (Juneñ November). The agroecosystem of the region is characterized by unpredictable weather, limited and intense rainfall with long intervals of dry spells. The crop, therefore, generally suffers from mid- and end-season drought. Suitable high-yielding genotypes with good tolerance to drought need to be tested. Efforts were made to achieve this endeavor in the project of the Andhra Pradesh Rural Livelihoods Programme (APRLP) being implemented by the Government of Andhra Pradesh and technically supported by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) with the funding support from APRLP and the UK Department for International Development (DFID). One of the objectives of the project is to help reduce poverty through increased agricultural productivity and improved livelihood opportunities.

Nucleus watersheds for undertaking on-farm research were selected based on representative typology, extent of rainfed area, crop productivity and willingness of the community to participate in the on-farm research activities. The detailed participatory rural appraisal (PRA) in the nucleus watershed helped us to understand the constraints for increasing the productivity from the farmerís perspective. Based on the results from the earlier varietal trials conducted jointly with the Krishi Vignan Kendra

Table 1. Performance of some selected groundnut varieties in on-farm trials, Kurnool district, Andhra Pradesh, India, rainy season 2002.

Genotype	Pod yield (t ha^{-1})	Haulm yield (t ha^{-1})	Harvest index	Shelling outturn (%)	100-seed mass (g)	Developed pods plant^{-1}
ICGS 11	1.9	2.7	0.41	69	34.7	15.9
ICGS 76	2.4	2.8	0.46	68	39.2	18.8
ICGV 86590	1.8	2.7	0.41	66	31.5	16.3
TMV 2 (control)	1.3	2.2	0.37	61	28.5	11.5
SE±	0.10	0.10	0.01	0.54	1.85	0.80
CV (%)	24	18	11	3	23	18
LSD (5%)	0.47	0.50	0.05	2.56	8.85	3.94

(KVK) of the Hanumantharaya Education and Charitable Trust, Yaganti, Banaganepally in Ralla Kothur and Thammada Pally villages of Kurnool district, we selected groundnut genotypes ICGS 11, ICGS 76 and ICGV 86590 with maturity duration of 120 days, and which can cope with drought for on-farm evaluation together with the local cultivar TMV 2.

Thirty farmers evaluated improved groundnut cultivars along with their normal variety (TMV 2) through on-farm participatory trials (1000 m^2 for each treatment) during the rainy season of 2002. The objective was to evaluate the performance of improved groundnut varieties and identify suitable cultivar(s) to develop improved production technologies for harnessing the agroecological potential. The soils are Alfisols and the long-term average annual rainfall is 612 mm. Sowing was done in the last week of June with 30-cm interrow spacing and 10-cm intra-row spacing. A fertilizer dose of 20 kg N, 40 kg P_2O_5, 0.5 kg B and 10 kg Zn ha^{-1} was applied together with split application of gypsum at 500 kg ha^{-1} (200 kg ha^{-1} as basal and 300 kg ha^{-1} as top dressing at pegging stage) to all the test cultivars including the check cultivar TMV 2. Adequate plant stands, free from weeds and pests were maintained. The crop experienced a long (28 days) dry spell from the beginning of pod initiation to full seed development. Data on yield and ancillary characters were recorded.

All the three improved groundnut cultivars yielded 40ñ85% more pods (1.8 to 2.4 t ha^{-1}) than TMV 2 (1.3 t ha^{-1}) (Table 1). Among the improved cultivars, ICGS 76 differed significantly from the rest in terms of pod yield and ancillary characters, viz, 100-seed mass, developed pods plant^{-1} and harvest index. However, its superiority was not reflected in case of shelling outturn and haulm yield. In terms of farmersí preferences, ICGS 76 ranked first followed by ICGS 11 because of their drought tolerance and high yield potential. Among the cultivars, ICGS 76 was most preferred despite its low shelling outturn and haulm yield over ICGS 11. The cropping season of 2002 was a sub-normal year and recorded 340 mm rainfall as against the average annual rainfall of 612 mm. ICGV 86590 was not preferred because of its bitter seed coat. Although all the three improved genotypes fetched a lower market price of Rs 1 kg^{-1} pods compared to local varieties, due to apprehensions of the traders that bold seeds contain low oil content, the farmers preferred these genotypes because of their drought tolerance and high yield potential. ICGS 11 and ICGS 76 were favored by the farmers for rainy season cultivation and can be included in the improved production technologies for scaling-up and scaling-out in Kurnool district.

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