



Evaluation of High Yielding Groundnut Varieties for North Eastern Zone of Tamil Nadu

P Murugan and P R Nisha

Krishi Vigyan Kendra, Tamilnadu Veterinary and Animal Sciences University
Kattupakkam – 603 203, Tamil Nadu

ABSTRACT

Groundnut (*Arachis hypogaea* L.) on farm trials was conducted by Krishi Vigyan Kendra, Kancheepuram to assess suitable drought tolerant groundnut variety in terms of yield, acceptability and adoption potential during *Kharif* in Kancheepuram district. The study revealed that CO 6 recorded higher pod yield (2850 kg/ha), higher number of pods/plant (32), lesser root rot incidence (3.5 %) and optimum plant population (30.6 plants/m²) as compared to ICGV 91114 and Kadiri 9. CO 6, ICGC 91114 and Kadiri 9 recorded 49.4, 16.4 and 23.2 per cent higher yield than the check variety TMV 7, respectively. A reduction in root rot incidence and optimum plant population was observed in all the three varieties as compared to check variety. Gross and net returns were Rs.85,500/- and Rs.59,500/-ha, respectively by cultivating CO 6 as against Rs.57,240/- and Rs.33,740/-ha in the check variety. Farmers were very satisfied with CO 6, as crop did not suffer from a dry spell of 20 – 25 days without rain. CO 6 would be a better option for rainfed cultivation in Kancheepuram district.

Key Words: Groundnut, pod yield, haulm yield, drought.

INTRODUCTION

Groundnut (*Arachis hypogaea*) is an important oilseed crop grown in the arid and semi-arid tropics of India under rainfed condition. The seed is used mainly for edible oil and contains nearly half of the essential vitamins and one-third of the essential minerals. Hence, groundnut played an important role in nutritional security to the resource poor farmers. In addition, the haulms provided excellent fodder for livestock, cake obtained after oil extraction was used in animal feed and overall the crop acted as good source of biological nitrogen fixation (Nautiyal *et al*, 2011).

In Tamil Nadu, most of the groundnut was grown under rain dependent and irrigated condition in an area of 6.5 lakh ha. Groundnut growing areas in Kancheepuram district on 30.3 thousand ha was mostly under rainfed condition. Important limitation other than irrigation is varietal preferences. As farmers were growing different local varieties during *kharif* season and save their own seeds over years for next sowing. Hence, the

study was planned with the objectives to evaluate the improved groundnut varieties with high yield and drought tolerance under *kharif* season through on farm trials and work out farmers' preferences for groundnut cultivation in Kancheepuram district.

MATERIALS AND METHODS

On-farm trials with farmers' participatory mode were conducted during *kharif* 2014 with five farmers from Kannimangalam and Sothupakkam village of Kancheepuram district. Sowing was performed under rainfed condition, depending on the onset of monsoon, sowing was completed between 10 and 15 June in both the villages. The plot size was kept 25×25 sq m with plant spacing of 30x10 cm. Three improved groundnut varieties *viz.* CO 6, ICGV 91114, Kadiri 9 (Table 1) and check variety was TMV 7 in the trial were taken for study. The recommended package of practices for groundnut cultivation followed as per TNAU recommendations. The data on germination per cent, plant population, root rot incidence, pods/plant, pod yield, haulm yield, gross return and net

Corresponding Author's Email: agrimuruga@gmail.com

Murugan and Nisha

Table 1. Characteristics of varieties selected for on-farm trial.

Name of variety	Characters / traits of the variety
CO 6	120-125 days duration, semi-spreading type, dark green foliage, tolerant to foliar disease, drought tolerant, 73.5 per cent shelling, 48.5 g 100 seed weight, 49.5 per cent oil content & developed by TNAU, Coimbatore.
ICGV 91114	95-100 days duration, erect type, tolerant to mid seed and end of season drought, 75 per cent shelling, 41 g 100 seed weight, 48 per cent oil content, better digestibility of haulms & developed by ICRISAT, Hyderabad.
Kadiri 9	105-110 days duration, spanish type, dark green foliage, tolerant to drought, thrips, collar rot and jassids, 48 per cent oil content & developed by ANGRAU, Kadiri.

return of all the varieties were recorded.

RESULTS AND DISCUSSION

On-farm trials revealed that groundnut variety CO 6 recorded higher pod yield (2850 kg/ha), higher number of pods/plant (32), lesser root rot incidence (3.5 %) and optimum plant population (30.6 plants/m²) as compared to ICGV 91114 and Kadiri 9 (Table 2). Groundnut varieties, CO 6, ICGV 91114 and Kadiri 9 recorded 49.4, 16.4 and 23.2 per cent higher pod yield than check variety TMV 7, respectively.

With regard to haulm yield, CO 6 variety recorded highest haulm yield of 4456 kg/ha as compared to other varieties. Lowest haulm yield was observed with TMV 7 (3255 kg/ha). Gross and net returns were Rs.85,500/- and Rs.59,500/-ha, respectively by cultivating CO 6 as against Rs.57,240/- and Rs.33,740/-ha in the check variety (TMV 7). The probable reason was lesser incidence

of root rot disease coupled with higher number of pods/plant resulting higher pod and haulm yield, these results were in agreement with the findings of Vindhiyavarman *et al* (2010). A detailed score card was provided to the farmers of these two villages, as a effect, CO 6 recorded as most preferred variety as compared to ICGV 91114, Kadiri 9 and TMV 7, in both the villages.

CONCLUSION

Groundnut variety, CO6 recorded more number of pods per plant, less incidence of root rot disease, higher pod yield, good withstand under drought and performed very well compared to Kadiri 9, ICGV 91114 and check variety (TMV 7) under rainfed condition. Farmers were very satisfied with CO 6, as the crop did not suffer from a dry spell of 20-25 days without rain. So, groundnut variety CO 6 would be better option for rainfed cultivation

Table 2. Performance of groundnut varieties in farmer's field (Average of five trials)

Sr. No.	Parameter	CO 6	ICGV 91114	Kadiri 9	TMV 7 (Check)
1.	Germination (%)	95.2	93.4	94.1	90.5
2.	Plant population (plants/m ²)	30.6	27.5	28.3	25.2
3.	Root rot incidence (%)	3.5	4.5	4.7	6.1
4.	Number of pods/plant	32.0	26.2	28.1	20.4
5.	Pod yield (kg/ha)	2850	2220	2350	1908
6.	Haulm yield (kg/ha)	4456	3965	3670	3255
7.	Gross returns (Rs./ha)	85,500/-	66,600/-	70,500/-	57,240/-
8.	Net returns (Rs./ha)	59,500/-	42,100/-	46,000/-	33,740/-

Evaluation of Groundnut Variety

during *kharif* season in north eastern zone of Tamil Nadu.

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