Agric. Res. J. Kerala 29 (1991) : 5 - 8

TG-3, A VARIETY OF GROUNDNUT SUITABLE FOR CULTIVATION UNDER PARTIAL SHADE IN COCONUT GARDENS

S.G. Sreekumar, V. Gopinathan Nair and P. Saraswathy
College of Agriculture, Vellayani 695 522, Trivandrum

Abstract: Comparative evaluation of eight varieties of groundnut was conducted at the Regional Agricultural Research Station of NARP (SR), College of Agriculture, Vellayani for three years during 1984, 1986 and 1987 kharif seasons. The field experiment (8 x 3 RBD) was conducted at the interspaces of coconut garden under partial shade for identifying a suitable groundnut variety with high yield and shade tolerance. The pooled analysis of the data for three years revealed that the variety TG 3 was consistently superior in dry pod yield. Therefore, it was recommended for inclusion in the package of practices recommendations of the Kerala Agricultural University as a suitable variety for cultivation as intercrop in coconut garden under partially shaded conditions.

INTRODUCTION

Groundnut is an important annual oilseed crop of India. In Kerala, groundnut is cultivated in an area of 11824 hectares with an annual seed production of 11768 t and is mostly grown in the drought prone area of Palghat district. Nair (1978) pointed out that in Kerala there is considerable scope for cultivating groundnut in non-traditional areas as intercrop in coconut gardens and as companion crop with tapioca. The cultivation of this crop is very limited in high rainfall regions of other districts during kharif season because of the non-availability of a high yielding variety with shade tolerance suited to partially shaded conditions in coconut gardens. Therefore, a research programme was undertaken under the NARP (SR) at the Regional Research Station, College of Agriculture, Vellayani with the objective of identifying suitable groundnut genotypes with high yield potential and shade tolerance which can be profitably cultivated in the interspaces of coconut gardens.

MATERIALS AND METHODS

The material consisted of eight varieties of groundnut viz., TMV 2, TMV 7, Pollachi 1, TG 3, TG 14, Spanish Improved, JL 24 and EC 35999. The field experiment was laid out in a randomised block design with three replications during kharif season in the interspaces of coconut garden at the Instructional Farm, College of Agriculture, Vellayani. Each variety was grown in 3 m plots with a spacing of 30 x 20 cm. The fertilizer and management practices were done as per package of practices recommendations of the Kerala Agricultural University (KAU, 1986). The field experiment was conducted for three years during 1984, 1986 and 1987 for conclusive results. Five randomly selected plants in each plot were used for recording observation on number of branches and number of mauture pods per plant. The dry pod yield and haulm yield (kg/ha) were also recorded. The data collected were subjected to analysis of variance year-wise to test the signficance of the difference between varieties. The pooled analysis for three years was also done (Panse and Sukhatme, 1978) to study the variety x year interaction and consistency in performance of the varieties.

RESULTS AND DISCUSSION

The mean number of branches per plant, haulm yield, number of mature pods per plant and dry pod yield are

Table 1. Mean number of branches, haulm yield, number of mature pods and pod yield of groundnut for three years

Sl. No.	Variety	Number of branches per plant				Haulms yield (kg/ha)				No. of mature pods/plant				Dry pod yield (kg/ha)			
		1984	1986	1987	Fooled mean	1984	1986	1987	Pooled mean	1984	1986	1987	Pooled mean	1984	1986	1987	Pooled mean
1	TMV 2	3.7	3.7	3.1	3.50	6963	4469	3056	4829	4.8	6.5	7.3	6.20	167	250	167	194.70
2	TMV 7	5.6	3.5	2.5	3.87	4481	4370	4148	4333	7.0	7.0	6.4	6.80	148	185	158	163.70
3	TG 3	4.8	4.7	2.8	4.10	5370	6000	3111	4827	6.4	8.2	8.5	7.70	185	417	444	348.70
4	TG 14	4.9	4.5	2.9	4.10	5259	4148	3537	4315	6.6	6.3	6.7	6.53	139	246	204	196.30
5	Spanish Improved	5.9	4.3	2.9	4.37	5963	5741	2241	4648	5.9	5.8	7.3	6.33	185	259	204	216.00
6	JL 24	4.5	2.7	3.2	3.47	6333	3518	2407	4086	4.3	5.3	5.3	4.96	149	148	111	136.00
7	Pollachi 1	4.7	4.3	3.2	4.07	6296	5444	3037	4926	7.6	5.4	8.8	7.27	222	269	195	228.70
8	EC 35999	4.6	4.3	2.2	3.70	5481	5000	3426	4636	7.2	6.1	8.9	5.73	204	194	102	166.70
	CD (0.05)	0.92	0.98	NS		NS	1101.3	501.8		NS	NS	2.15		NS	92.7	57.6	72.40

Table 2. Pooled ANOVA for number of mature pods and dry pod yield

Source	df	Mean squares	
		Number of mature pods	Dry pod yield
Variety	7	2.221	12610.08"
Year	2	0.703	10558.05"
Variety x year	14	1.325	3261.83 NS
Error	42	2.999	1964.44

** Significant at 1 per cent level

presented in Table 1 and the pooled ANOVA for number of mature pods per plant and dry pod yield are presented in Table 2. The varieties showed significant differences for number of branches per plant during 1984 and 1986 kharif seasons. During 1984, the variety Spanish Improved recorded maximum number of branches (5.9) and is on par with TMV 7 (5.6). The variety TG 3 recorded maximum number of branches during 1986 (4.7). The varieties TMV 2, TG 14, Spanish Improved, Pollachi 1 and EC 35999 were on par with TG 3. During 1987 kharif season, JL 24 and Pollachi 1 recorded maximum number of branches (3.2 each). The pooled mean number of branches per plant was maximum in Spanish Improved (4.37).

The haulm yield showed significant difference during 1986 and 1987 seasons. During 1984 kharif, the variety TMV 2 recorded maximum haulm yield (6963 kg/ha). The variety TG 3 had maximum haulm yield (6000 kg/ha) during 1986 and was on par with Spanish Improved, Pollachi 1 and EC 35999. During 1987 kharif seasons TMV 7 recorded maximum haulm yield (4148 kg/ha) and was significantly superior to all the other varieties. The pooled mean was maximum in Pollachi 1 (4926 kg/ha) followed by TMV 2 (4829 kg/ha) and TG 3 (4827 kg/ha).

The number of mature pods per plant was not significantly different in 1984 and 1986 seasons. However, during 1984, Pollachi 1 recorded maximum number of pods (7.6) followed by EC 35999 (7.2) and during 1986, TG 3 had maximum number of pod (8.2) followed by TMV 7 (7.0). The varieties showed significant difference during 1987 kharif season. Maximum number of mature pods per plant was produced by Pollachi 1 (8,8) and was on par with TMV 2, TG 3, TG 14 and Spanish Improved. The pooled mean number of pods was maximum in TG 3 (7.70) followed by Pollachi 1 (7.27). The pooled analysis of the data for three years revealed no variety x year interaction, indicating the consistency in performance of the varieties.

, The dry pod yield was significantly different only during 1986 and 1987 kharif seasons. The variety Pollachi 1 recorded maximum dry pod yield of 222 kg/ha during 1984. During 1986 and 1987 kharif seasons TG 3 was found to

be significantly superior in yield to the other varieties (417 kg/ha and 444 kg/ha respectively). The pooled analysis of the data for three years revealed that there was no variety x year interaction indicating that TG 3 is stable in respect of dry pod yield. The variety TG 3 which was consistently superior in dry pod yield among eight varieties was recommended for inclusion in package of practices recommendations of the Kerala Agricultural University as a suitable variety for cultivation as intercrop in coconut garden under partially shaded conditions.

REFERENCES

KAU 1986. Package of Practices Recommendations. Kerala Agrl. University, Trichur

Nair, V.G. 1978. Agricultural research in Kerala. *Status Papers: Groundnut.* Kerala Agric. Univ., p 62-63

Panse, V.G. and Sukhatme, P.V. 1978. *Statistical Methods for Agricultural Workers,* 3rd ed., ICAR, New Delhi, p. 347

□□□