research article | International Journal of Plant Sciences, (July to December, 2009) Vol. 4 Issue 2 : 541-543

Performance of groundnut varieties in front line demonstration

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Accepted : May, 2009

SUMMARY

Front line demonstration was conducted to identify suitable rainfed groundnut variety. The ruling rainfed varieties such as TMV 7, VRI 2 and TMV 13 were demonstrated in the farmers field to find out the productivity and profitability. Among these varieties VRI 2 followed by TMV 13 performed well in Madurai district and fetches better market price than TMV 7 and gave additional profit of Rs10,000 and 7000 / ha and for additional seed cost of Rs.1895 and 1177 / ha, respectively.

Key words : Groundnut, Productivity and profitability, Front line demostration

In Tamil Nadu groundnut is cultivated in an area of 5.02 lakhs hectare with the production of 717 lakh tonnes and productivity of 1429 kg/ha. Compare to two decades ago the area has declined to 50% and the productivity remain the same. Non adoption of improved varieties, poor management practices, low yield potential of varieties and the cultivation restricted to the rainfed area are the major constraint factor attributed for the lower productivity in Tamil Nadu. Availability of improved varieties with high yield potential and the possibility of raising them all through the year, offers now immense scope to increase the productivity. Krishi Vigyan Kendra, Madurai conducted Front line demonstration on varietal performance of groundnut in the farmer's field to find out the suitability through the parameters of productivity and profitability.

MATERIALS AND METHODS

Front line demonstration was conducted in an area of 5 ha in 12 farmers field at rainfed area of Madurai district namely, Thirumangalam and Alanganallur block during 2008 to find out the performance of groundnut varieties such as TMV 7, VRI 2 and TMV 13. Line sowing was taken up during first week of June with the spacing of 30 x 15 cm along with recommended dose of fertilizer and usual cultivation practices. Observations recorded were total number of pods, single plant pod yield (g), 100 seed weight (g) and pod yield (kg /ha) and shelling %, cost of cultivation, gross return, net return and C.B ratio. Correlation coefficient and paired 't' test was worked out as per methods suggested by Johnson *et al.* (1955).

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RESULTS AND DISCUSSION

From the Table 1 it could be observed that, TMV 13 recorded more number of pods/plant (10.3) followed by VRI 2 (10.0) compared to TMV 7 (8.43). However, VRI 2 has recorded higher single plant pod yield (10.9 g)followed by TMV 13 (10.0 g) compared to TMV (7.6 g). The same trend was observed in 100 seed weight where VRI 2, TMV 13 and TMV 7 recorded 40.16 g, 36.2 g and 34.7 g, respectively. The average shelling percentage of all these varieties revolved around 74.0 %. The productivity of VRI 2 was found to be higher which recorded pod yield of 1976 kg/ha followed by TMV 13 (1823 kg/ha). The lowest productivity was observed in TMV 7 with the yield of 1458 kg/ha. The test of significance of mean value through paired 't' test revealed that both VRI 2 and TMV 13 performed significantly better than TMV 7 in total number of pods, single plant grain yield, 100 seed weight and productivity in farmers field. The correlation coefficient presented in Table 1 revealed that except shelling percentage parameters such as single plant pod yield, 100 seed weight, total number of pods per plant has positive and significant relationship with productivity.

The data related to profitability presetned in Table 2 revealed that, the maximum gross return of Rs. 395251 ha was obtained with VRI 2 followed by TMV 13 (Rs.36475/ha) and TMV.7 (Rs. 291671 ha). However, an additional seed cost of Rs. 1895/- for VRI 2 and Rs. 1177/- for TMV 13 was incurred over the seed cost of TMV 7. The additional seed cost alone produced additional gain of net return of Rs 8463/-and 6600/- for VRI 2 and TMV 13, respectively over TMV 7.

It can be concluded that, VRI 2 followed by TMV 13 performed well in Madurai district than TMV 7.

Table 1 : Productivity of groundnut varieties in front line demonstration

Sr. No.	Total number of pods			Single plant seed yield(g)			100 seed weight (g)			Shelling (%)			Pod yield (Kg/ha)		
	TMV 7	VRI 2	TMV 13	TMV 7	VRI 2	TMV 13	TM V7	VRI2	TMV 13	TMV 7	VRI 2	TMV 13	TMV 7	VRI 2	TMV 13
1.	9.0	10.0	10.5	8.25	10.5	10.2	36	41	37.5	74	75	73	1550	1800	1765
2.	8.5	9.5	9.0	7.75	9.95	8.75	35	41	35.5	73	76	74.5	1450	1750	1675
3.	8.0	10.5	11.0	7.25	11.25	10.55	33	42	36.5	75	74	74	1380	2100	1835
4.	9.5	10.2	10.25	8.45	11.25	9.75	34	39.5	38.0	74	75	72	1620	2110	1775
5.	8.8	9.75	9.75	7.85	9.75	9.45	34	39	34.0	74	74	75	1500	1750	1715
6.	8.0	11.0	11.0	7.4	11.95	10.55	36	40	37.0	73	76	72	1450	2160	1835
7.	7.5	11.0	12.0	6.9	12.25	11.25	35	41	34.5	73	74	76	1300	2145	1975
8.	8.3	10.5	10.0	7.5	11.25	9.55	34	40.5	38.0	74	73	74	1450	2025	1835
9.	8.0	9.5	10.0	7.25	10.75	9.6	35	39.5	36.5	75	76	75	1350	1975	1800
10.	9.3	11.5	12.0	8.25	12.25	11.5	34	39	34.5	75	75	74.5	1600	2125	1925
11.	8.0	9.5	10.0	7.45	10.75	10	37	41	35.5	73	74	75	1450	1975	1875
12.	8.5	8.0	8.5	7.5	9.25	9.25	34	38.5	37.0	73	76	74	1400	1800	1875
	8.43	10.0	10.3	7.6	10.9	10.0	34.7	40.16	36.20	74	75	74	1458	1976	1823
Overall mean		9.62			9.54			37.04			74.27			1752	
S.D.		1.209			1.59			2.06			1.05			248.8	
Correlation		0.799**			0.968**			0.6979**			0.3348			1	

* and ** Significant of values at P=0.05 and 0.01, respectively

Table 2 : Profitability of groundnut varieties in front line demonstration

Sr. No.	Pod yield (kg/ha)			Gross return (Rs.)			Cost of cultivation (Rs.)			Net return (Rs.)			C.B. ratio		
	TMV 7	VRI 2	TMV 13	TMV 7	VRI 2	TMV 13	TMV 7	VRI 2	TMV 13	TMV 7	VRI2	TMV 13	TMV 7	VRI2	TMV 13
1.	1550	1800	1765	31000	36000	35300	18000	18500	18000	13000	17500	17300	1.72	1.945	1.96
2.	1450	1750	1675	29000	35000	33500	17500	17500	17500	11500	17500	16000	1.657	2	1.91
3.	1380	2100	1835	27600	42000	36700	17000	20000	18250	10600	22000	18450	1.623	2.1	2.01
4.	1620	2110	1775	32400	42200	35500	18500	20500	18000	13900	21700	17500	1.751	2.05	1.97
5.	1500	1750	1715	30000	35000	34300	17750	17500	17500	12250	17500	16800	1.690	2	1.96
6.	1450	2160	1835	29000	43200	36700	17500	21000	18250	11500	22200	18450	1.65	2.057	2.01
7.	1300	2145	1975	26000	42900	39500	17500	21250	18500	8500	21650	21000	1.48	2.018	2.13
8.	1450	2025	1835	29000	40500	36700	17500	19750	18250	11500	20750	18450	1.657	2.050	2.01
9.	1350	1975	1800	27000	39500	36000	17250	19500	18250	9750	20000	17750	1.56	2.025	1.97
10.	1600	2125	1925	32000	42500	38500	18500	21250	19250	13500	21250	19250	1.729	2	2.00
11.	1450	1975	1875	29000	39500	37500	17500	19500	19000	11500	20000	18500	1.65	2.025	1.97
12.	1400	1800	1875	28000	36000	37500	17000	18000	19250	11 000	18000	18250	1.64	2	1.94
	1458	1976	1823	29167	39525	36475	17625	19520	18333	11542	20005	18142	1.656	2.024	1.99
Overall mean		1752			35055			18493			16562				
SD		248.8			4976			1188.5			3969.47				
Correlation		0.867**			0.867**			1			0.7338**				

* and ** indicates significant of values at P=0.05 and 0.01, respectively

Table 3 : Paired sample test

Sr. No.	Parameters	Paired sample	Paired differences mean	SE mean	SD	't' value
1.	Total number of pods	TMV 7- VRI 2	1.646	0.319	1.105	5.159**
		TMV-7-TMV 13	1.896	0.367	1.272	5.162**
2.	Single plant pod yield (g)	TMV 7- VRI 2	3.279	0.324	1.124	10.103**
		TMV-7-TMV 13	2.383	0.281	0.975	8.460**
3.	100 seed weight (g)	TMV 7- VRI 2	5.417	0.398	1.378	13.61 **
		TMV-7-TMV 13	1.458	0.524	1.815	2.784*
4.	Shelling (%)	TMV 7- VRI 2	1	0.408	1.414	2.449*
		TMV-7-TMV 13	0.333	0.405	1.403	0.823
5.	Pod yield (kg/ha)	TMV 7- VRI 2	517.91	55.41	191.94	9.347**
		TMV-7-TMV 13	365.41	42.48	147.16	8.602**

Moreover, the size of the seed was bold in VRI 2 and red kernel in TMV 13 that could fetch better market price than TMV 7. Hence, the above varieties may be promoted through State Agricultural Department in Madurai district.

REFERENCES

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