

Economics

The data presented in Table 1 clearly revealed that the net return as well as cost benefit ratio to be higher in advancing the sowing by 10 days as compared to 20 and 30 days early sowing and corroborated with earlier findings of Patel *et. al.* (1986) and Reddy *et. al.* (1984). The net return and the cost benefit ratio were Rs. 4643 ha⁻¹ and 2.20 respectively in this treatment, whereas the corresponding figures for normal sowing are 4154 and 2.08 respectively. Among the varieties CO 2 recorded the highest net return of Rs. 4891 ha⁻¹ and a cost benefit ratio of 2.19.

The foregoing results go to show that for Pollachi tract sowing groundnut crop on 5th of April with pre-sowing irrigation wherever possible, is the best. The choice of improved variety CO 2 will also be useful in increasing the net profit and cost effectiveness.

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REDGRAM AS AN INTERCROP IN GROUNDNUT

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ABSTRACT

A field experiment conducted at the Agricultural Research Station, Aliyarnagar during *Kharif* seasons of 1986, 1987 and 1988 revealed that redgram to be a suitable and remunerative intercrop in groundnut. Raising one row of redgram for every six rows of groundnut proved to be the most suitable arrangement of the component crops.

KEYWORDS : Redgram, Intercrop, Groundnut.

Table 1. Effect of groundnut : redgram intercropping on yield and quality attributes of groundnut.

Treatments.	pod yield (kg.ha ⁻¹)			Pooled mean	Plant height at harvest (cm)	No. of pods plant ⁻¹	Shelling percent	Thousand kernel weight (g)
	1986	1987	1988					
T ₁	1311	1366	1278	1318.4	41.7	15.5	75.5	25.6
T ₂	--	--	--	--	--	--	--	--
T ₃	1122	981	1198	1100.8	43.3	17.0	73.1	26.3
T ₄	1303	1243	1280	1275.9	41.9	14.9	77.2	25.2
T ₅	1199	1125	1257	1194.1	41.9	15.2	73.5	26.2
T ₆	1281	1122	1223	1209.0	42.7	15.7	74.3	25.8
SE	44.45	53.53	31.31	33.33	2.0	0.8	1.4	0.7
CD (5%)	138	164	NS	94	NS	NS	NS	NS

Redgram as an intercrop in groundnut

Table 2. Yield and yield attributes of Redgram and Economics.

Treatments	Grain yield (kg.ha ⁻¹)	No. of pods plant ⁻¹	Thousand grain weight (g)	Net returns (Rs.ha ⁻¹)	B.C ratio
T ₁	--	--	--	3225	1.79
T ₂	963.5	145.5	8.35	5281	3.18
T ₃	361.2	126.6	7.95	4826	2.12
T ₄	284.9	120.0	8.08	5224	2.22
T ₅	154.7	119.4	8.53	3735	1.87
T ₆	155.3	128.4	7.93	3810	2.10
SE	14.91	8.3	0.27	227	0.09
CD(5%)	43.3	NS	NS	658	0.25

NS – Not significant

In India, groundnut is mostly grown as a rainfed crop. So much so, the production as well as the net returns fluctuate drastically from year to year due to vagaries of climate. Under such conditions, intercropping is an effective production technique for risk management. Intercropping besides providing a higher returns over sole cropping, also helps to achieve greater stability of yield over different seasons. Based on yield and income, experiments showed that intercropping of redgram with groundnut was more remunerative than intercropping with soybean, green gram or sorghum (Ramdoss and Thirumurugan, 1983). Chikkanna (1982) have reported intercropping groundnut and Pigeonpea in 5:1 was the most remunerative system at Anantapur while 7:1 ratio was the best in red sandy loam soils of Tirupathi. Studies conducted by Dhaliwal *et al.* (1984) revealed that highest equivalent pod yield and gross returns were obtained in 8:1 arrangement of groundnut and redgram, compared to 4:1 ratio. Hence, with a view to find out the suitability of raising redgram with groundnut in Pollachi tract of Coimbatore district and to standardise the ratio of the component crops, a study was undertaken and the results are reported hereunder.

MATERIALS AND METHODS

A field experiment was conducted at the Agricultural Research Station, Aliyarnagar for three consecutive seasons during *Kharif* seasons of 1986, 1987 and 1988. The experiment was laid out in a randomised block design with four replications in sandy loam soil. The treatment details are as follows :

Notation Used Treatments

- T₁ - Sole crop of POL 2 groundnut
 T₂ - Sole crop of Co 5 redgram
 T₃ - One row of redgram for every four rows of groundnut (4:1)

- T₄ - One row of redgram for every six rows of groundnut (6:1)
 T₅ - One row of redgram for every eight rows of groundnut (8:1)
 T₆ - One row of redgram for every ten rows of groundnut (10:1)

In all treatments, the population of groundnut was similar. Both the crops were sown in June-July, in all the three years. Redgram was sown at 20 cm apart within each row. All standard procedures of package of practices, recording yield and other components were followed. The data were statistically scrutinised and the pooled analysis for the three years of trial is presented in Table 1 and 2.

RESULTS AND DISCUSSION

A) Groundnut

Pod yield

Intercropping of redgram in groundnut resulted in a general reduction in pod yield, compared to the sole crop of groundnut, evidently due to the competition exerted by redgram for moisture and nutrients (Table 1). Under groundnut-redgram intercropping system, growing one row of redgram for every six rows of groundnut (T₆) recorded the highest groundnut pod yield of 1276 kg ha⁻¹, while groundnut + redgram in 4:1 ratio recorded the lowest pod yield (1101 kg ha⁻¹). This was in consensus with the findings of Veeraswamy *et al.* (1974) and Appadurai and Selvaraj (1974).

(ii) Growth yield and quality attributes of groundnut

Statistical scrutiny of observations recorded in groundnut on plant height at harvest, number of pods plant⁻¹, shelling per cent and hundred kernel weight revealed that these characters were not significantly influenced by the different systems (Table 1).

B) Redgram

Grain yield

The grain yield of red gram was significantly altered by the different treatments. Among the different ratios tried, sowing groundnut and redgram in 4:1 (T_3) recorded the highest yield of 361 kg.ha⁻¹, followed by T_4 , which was due to higher population of redgram in the above two systems of planting (Table 2).

Yield attributes of redgram

Observations on number of pods plant⁻¹ and hundred grain weight recorded in redgram revealed that the yield attributes were not significantly affected by the different treatments. This indicated that the yield difference in redgram in different systems was attributed to a higher plant density rather than the yield component (Table 2).

C) Economics

Net returns

The data on net returns (Table 2) clearly brought out the economic advantages of intercropping redgram in rainfed groundnut. Among the different methods of sowing the component

crops, sowing one row of redgram for every six rows of groundnut (T_4) recorded the highest net returns of Rs. 5224 ha⁻¹, followed by T_3 . The higher net returns in T_4 was due to higher yield of groundnut and optimum yield of redgram.

Benefit Cost Ratio

Intercropping of redgram in groundnut recorded significantly higher benefit cost ratio- T_4 recorded the best benefit cost ratio of 2.22, while T_5 recorded the lowest (1.87). The higher cumulative yield and gross returns recorded in T_4 has resulted in the most advantageous ratio without any significant increase in the cost of cultivation in the present study (Table 2).

The results of the study indicated that redgram was suitable and profitable intercrop in groundnut for Pollachi tract, and sowing one row of redgram for every six rows of groundnut was the most beneficial system to achieve high net return and yield.

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