

Soybean Cultivation in the Rainfed Area

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Abstract: Ratlam district where cultivation are rainfed and soybean is major oil seed crop for kharif season. There were three trials are conducted on 07 different farmers field and result obtained were increase in yield with the help of recommended dose of fertilizer and use of water dispersible granular sulfer.

INTRODUCTION

Ratlam district is situated on 23° 31' Longitude 75° 07' E latitude. Where Rainfall is very ratic and scanty in 2014-15. Rainfall was 640.00 mili meter and 2015-16 rainfall is 1041.00 mili meter. Table 1 farmers of ratlam district are depends on rainfed farming and for this particular region soybean is a most important crop for kharif season, area under soybean for the year 2013-14 are 232.6 thousand hectare, production are 256.70 thousand tonnes and productivity are 1104 kg/ha and in farmers practice farmers not using sulfer in soybean cultivation for this aspect this OFT was conducted on farmers field (Shriram and chauhan 2002).

MATERIAL AND METHODS

Total 07 farmers were selected for this on farm trial purposes from different location of ratlam district on soil test basis. Variety was Jawahar Soybean 9560 spacing were row to row 45 cm plant to plant 5-7 cm cultivation was completely rainfed. Life saving irrigation as pod initiation stage or as required. Imbalance use of fertilizer (Sharma and Shandil 1999). Character of variety is early maturity resistance for leaf curl disease and big size of grain.

Farming get one hand weeding at 25 days after sowing. Seed rate applied 80 kg/ha, Fertilizer dose RDF 20:60:20:20 (Nitrogen : Phosphorus : Potash : Sulfer). There were two performance indicator

parameter taken like 1000 grain weight, Yeild (q/ha) (chaudhary 2004). Punna Rao and Isreal 2003)

RESULTS AND DISCUSSION

Produce of this OFT was compared with farmers as T1 and another field where T2 applied by farmers but as SSP and T3 as recommended dose of Nitrogen : Phosphorus : Potash and Sulfer (water dispersible granular sulfer) result obtained as gross income were more in T3 practice net income were also more in T3 practice.

Benefit cost ratio were also higher as 1.94 in T3 and percent increase in yield was 34.39 (Table 4) which are positive for yield increase (Singh 2002 and Bhatnagar et. al 2003). A 1000 grain wt. of T1, T2 and T3 found as 123.4 gm, 128.88 gm and 131.28 gm. Table 2 Yield get 11.6 in T1, 12.57 in T2 and 15.59 in T3 as result shows 1000 grain wt. and yield both are higher in T3 as compare to T1 and T2.

Table 1
Rainfall information

Year	Mili Meter
Average Rainfall	895.9
2000-01	402.0
2001-02	585.1
2002-03	511.0
2003-04	888.8

Cont. table 1

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Year	Mili Meter
Average Rainfall	895.9
2004-05	968.1
2005-06	766.0
2006-07	1652.3
2007-08	1190.0
2008-09	445.4
2009-10	677.4
2010-11	883.2
2011-12	1176.2
2012-13	981.0
2013-14	1100.3
2014-15	640.00
2015-16	1041.00

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Table 2

1000 grain wt.								
Treatment	F1	F2	F3	F4	F5	F6	F7	Avg.
T1	120.20	119.6	125.0	126.0	124.2	123.1	126.0	123.47
T2	125.50	124.3	131.3	131.6	132.1	129.3	128.2	128.88
T3	130.3	130.3	132.3	133.1	133.0	130.2	131.1	131.28

Table 3

Yelid (q/ha)								
Treatment	F1	F2	F3	F4	F5	F6	F7	Avg.
T1	10.0	10.5	11.0	10.3	10.5	10.9	11.1	11.6
T2	12.3	13.3	12.9	12.7	12.3	12.24	12.26	12.57
T3	16.0	15.2	15.9	15.0	16.5	15.28	15.30	15.59

Table 4
Economic Performance

Parameter	Parameters			Average Cost of cultivation (Rs/ha)			Average Gross Return (Rs/ha)			Average Net Return (Rs/ha)			Benefit-Cost Ratio (Gross Return/Gross Cost)		
	FP (T ₁)	(T ₂)	RP (T ₃)	FP (T ₁)	(T ₂)	RP (T ₃)	FP (T ₁)	(T ₂)	RP (T ₃)	FP (T ₁)	(T ₂)	RP (T ₃)	FP (T ₁)	(T ₂)	RP (T ₃)
1000 grain wt.	123.47	128.88	131.28	22000	22400	24000	31800	37710	46770	9800	15310	22770	1.44	1.68	1.94
Yield (q/ha)	11.6	12.57	15.59												
Percent increase yield	34.39%														