

Soybean Production Technology Evaluation through Frontline Demonstrations in Adilabad, Andhra Pradesh

Key words : Production Technolog, Soybeany, Yield.

Soybean, *Glycine maxL(Merril)* continues to rank first among various oilseed crops globally, contributing approximately 25 percent to the total oil and fat production which is next only to Palm oil, having 26 percent share. In India, this wonder crop continues to rank as number one oilseed crop followed by rapeseed and mustard, groundnut and sunflower. The country has seen an unprecedented growth in soybean area which was just 0.03 m.ha in 1970 and has reached to 9.30 m.ha in 2010 and production reaching to 10.47 m.t in 2010 from that of 0.014 m.t in 1970. (Director's Report, DOSR, Indore, 2010-11). Madhya Pradesh is the leading state followed by Maharashtra, Rajasthan and Karnataka. Soybean is cultivated in large areas of Adilabad district under Northern Telangana zone of Andhra Pradesh. A special project on "Frontline demonstrations (FLD's) on soybean" was started in *Kharif 2008* under AICRP on Soybean at ARS, Adilabad. These FLD's are organized under the direct supervision of Scientists to create awareness and also convince the farmers about superior potentials of improved varieties and benefits of improved production technologies. The additional returns that resulted due to adoption of improved technologies in soybean was calculated.

A study was taken up in Adilabad district of Andhra Pradesh during *kharif* 2008-09, 2009-10 and 2010-11 where a total of 40 demonstrations were conducted. Of these, 20 were conducted during 2008-09 and 10 each were conducted during 2009-10 and 2010-11. Improved technology of soybean cultivation was with improved varieties (MACS 450, PS 1029) compared with farmers practice. The various components of improved practice included seed rate of 62.5 kg ha⁻¹, optimum fertilizer dose of 30:60:40 NPK kg ha⁻¹, seed inoculation with *Rhizobium japonicum*, use of pre-emergence herbicide Pendimethalin @ 3.5 L ha⁻¹ and post-emergence herbicide was Imazethapyr @ 625mL ha⁻¹; optimum spacing of 45 x 5 cm was adopted to maintain 4.44 lakh plants ha⁻¹, intercropping with redgram, cotton and need based plant protection measures were adopted. The area of each demonstration was 0.4 ha. Cost of cultivation in 2008 include the entire production cost of soybean for different interventions considered while in 2009 and 2010 only the additional cost involved for the particular intervention was considered as cost of cultivation. Net returns from the demonstrations were worked out.

Table:1 Soybean production technology in Adilabad, Andhra Pradesh

Year	Yield(kg/ha)		Percent increase in yield over FP	Average cost of cultivation (Rs ha ⁻¹)		Additional cost over FP (Rs ha ⁻¹)	Average Net Returns (Rs ha ⁻¹)		Additional returns over FP (Rs ha ⁻¹)
	IP	FP		IP	FP		IP	FP	
2008*	1980	1604	23.4	20383	18170	2213	15039	10712	4327
2009**	1299	1164	11.5	3922	3463	459	30504	24484	6020
2010**	2028	1709	18.7	4186	3911	275	43038	32791	10247
Mean	1769	1492	17.8	9497	8515	982	29527	22662	6865

*Mean of 20 FLD's

** Mean of 10 FLD's

IP: Improved practice

FP: Farmers' practice

Three year study from an average of 40 demonstrations revealed that adoption of improved technology increased productivity by 23.4 % in 2008, 11.5 % in 2009 and 18.7 % in 2010 over farmers practice (Table 1). Kadian *et al.*, 1997 reported increased yields upto 150% in oilseeds due to adoption of recommended practices in FLD's. The additional returns by improved practices ranged from Rs.4327 ha⁻¹ (2008) to Rs.10247 ha⁻¹ (2010) with a mean of Rs.6865/ha compared to farmers' practice. Pramila Rani *et al.*, 2000 reported increased additional returns with improved technology in soybean conducted at RARS, Lam, Guntur.

LITERATURE CITED

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