

Front line demonstration : An effective technology for increasing productivity of chickpea in Ratlam district

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ABSTRACT

The productivity of pulse crops continues to be quite low due to technological gap in adoption pulses of technology. The yield of pulses can be increased by demonstrating their cultivation technologies at farmers field under the supervision of scientist working in operational area. Keeping the above fact front line demonstration were under taken by the Krishi Vigyan Kendra Jaora, District Ratlam (M.P.). The improved package of practices of chickpea in the district for five consecutive years wise 2002-03 to 2006-07. The highest seed yield (1725 kg/ha) was recorded in year 2004-05 and it was 43.75 per cent more over the farmers practice (1200 kg/ha). However, the lowest yield (1313 kg/ha) was recorded in FLD in the year 2002-03 and 880 kg/ha in farmers practice. The variation in the per cent increase in yield was found due to variation in agro-climatic parameters under rainfed condition. The demonstrated farmers act also as source of information and pure seeds for wider dissemination of the HYV of chickpea for other farmers.

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INTRODUCTION

Chickpea is an important food legume widely consumed in India. It also plays an important role in human consumption and sustainable agriculture enriching the soil through nitrogen fixation. Therefore, it is very essential to demonstrate the HYV, resistant biotic and a biotic stresses and other pulse production technologies which the farmers generally do not adopt.

The Ministry of Agriculture, Govt. of India has taken the innovative methodology to increase the production of pulse crop. Keeping the importance of FLDs, the KVK Jaora, District Ratlam conducted demonstration of Chickpea crop at farmers field under rainfed situation in *Rabi* season during the year 2002-03 to 2006-07.

METHODOLOGY

Farmers of operational area of KVK, Jaora district Ratlam laid out the front line demonstration on chickpea during the year of 2002-03 to 2006-07 in the six villages (Bilandpur, Talidana, Mamatkhedda, Kalukhedda, Semaliya and Chicklana) of two blocks (Piploda and Jaora). The total numbers of 65 farmers were associated under the programme. The demonstration of improved technology was taken in area 0.22 to 0.50 ha of each farmer. Total 24 ha area was covered in five years for demonstration of

recommended improved practice of chickpea (Variety, JG-218 and JG-130) in the demonstrations and one control plot was also kept where farmers practice was carried out. The result was compared with the full package of practice and co-related with rainfall. The primary data were collected from the selected FLD farmers with the help of interview schedules and interpreted and presented in term of percentage and qualitative data were converted into quantitative form and per cent increased yield was calculated by using formula:

$$\% \text{increased yield} = \frac{\text{Demonstration yield} - \text{Farmers yields}}{\text{Farmers yield}} \times 100$$

RESULTS AND DISCUSSION

During the period under study (2002-03 to 2006-07), it was observed that yield of demonstration was significantly higher (1551 kg/ha) than local check plots (1126 kg/ha) as shown in Table 2 and Fig. 1. However, the fluctuations in yield were observed mainly on account of variation in rainfall and mid season dry spells. Average yield level varied from 1313 kg/ha and 1725 kg/ha in demonstration plots and 880 to 1270 kg/ha in local check plots in term of percentage. Yield improvement in demonstration was recorded from 29.84 to 43.75 per cent over local check.

Due to combined high yielding and short

Key words :

Chickpea,
Demonstration,
FLD programme,
Sustainable
Agriculture

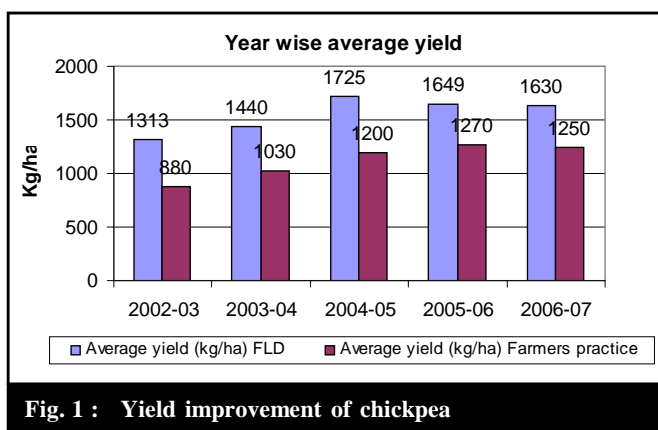
Accepted :
September, 2009

Table 1 : Difference between demonstration package and farmers practice under FLD on chickpea

Particulars	Demonstration	Farmers practices
Variety	JG-218 and JG-130	Local
Seed rates	80 kg/ha	120 kg/ha
Seed treatment	Bavistine @ 3g/kg seed	No seed treatment
Culture treatment	Rizhobhium culture and PSB culture @ 10 g/kg seed	No culture treatment
Situation	Rain-fed	Rain-fed
Fertilizer dose	20:40:20 (N:P:K) kg/ha	Nil
Plant protection	Need based insecticide and fungicide spray	Insecticide spray after heavy infestation of pest

Table 2 : Increasing the productivity of chickpea through front line demonstration

Years	Under FLD programme		Average yield (kg/ha)		% yield increase over farmers practice	Extension gap (kg/ha)	C:B Ratio
	No. of demons.	Total area (ha)	FLD	Farmers practice			
2002-03	13	05	1313	880	32.97	433	1:2.34
2003-04	15	05	1440	1030	39.87	410	1:2.82
2004-05	08	04	1725	1200	43.75	525	1:2.89
2005-06	14	05	1649	1270	29.84	379	1:3.61
2006-07	15	05	1630	1250	30.40	380	1:5.59
Total / Average	65	24	1551	1126	35.36	425	1:3.45

**Fig. 1 : Yield improvement of chickpea**

duration variety (JG-218 and JG-130), appropriate sowing time seed treatment and method, fertilizer application and insect pest control practices adopted under the demonstration. It was observed that low productivity of chickpea under local check plots was mainly due to use of low yielding, long duration maturity, local genotypes without application of fertilizers practices. Economic analysis of data revealed that cost benefit (C.B.) ratio ranged from 2.34 to 5.59 with a mean value of 3.45 in the form of increased yield. Hence, favourable cost benefit ratio proved the economic viability of the demonstration in convinced farmers of the area easily.

During the study the co-relation of yield with the

average rainfall of the district revealed that the yield was directly affected by the precipitation during that year.

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