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Impact of front line demonstration on chickpea yield improvement in kota district of Rajasthan

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The concept of front line demonstration was introduced with the purpose of improving adoption behaviour of the farmers related to improved chickpea production technologies and to harvest the maximum yield potential of chickpeain real farm conditions. Supply of critical input, guidance by the experts to avoid partial and non-adoption of recommended technologies, monitoring crop performance at critical stages to obtain quality and disease free seed are important parameters. Farmers were inspired to exchange seed within and neighbouring villages and share their experience with fellow farmers. The study was carried out to study the effect of FLDs on chickpea in Kota district od Rajasthan.

METHODOLOGY

The study was carried out by Krishi Vigyan Kendra, Kota (Rajasthan) during *rabi* 2019-20 to 2020-21 at farmers' fieldsat Chomakot villageunder National Initiative on Climate Resilient Agriculture (NICRA) of Kota district tounderstand the gaps between improve package (IP) and farmers practice (FP) of chickpea cv. GNG 1958, line sowing, seed treatment and timely weed control as well as recommended dose of fertilizers were followed as per zonal package (Zone V). The technology gap, extension gap and technology index were calculated using following equations (Samui *et al*., 2000). Technology gap = Potential Yield – Demonstration yield; Extension gap = Demonstration yield – Farmers yield; Technology index (%) = Technology gap x 100/ Potential Yield

RESULTS

Perusal of data (Table 1) indicated the seed yield of chickpea in IP under irrigated conditions rangedbetween 23.10 and 23.59 q/ha (25.40 % higher over farmers practice). The extension gap in improved practices were recorded 4.2 and 5.26 q/ha during *rabi*2019-20 and 2020-21emphasizes the need to educate the farmers to reverse the trend.The technology gap was 3.45 q/ha reflects the farmer's cooperation in carrying out such demonstrations with encouraging results in subsequent years. The technology gap might be due tovaried soil fertility and weather condition (Mukharjee, 2003). Technology index was 12.87 % showed the feasibility of evolved technology at farmer's field and lower the value of technology index more is the feasibility of the technology (Jeengar *et al*. 2006).

Data (Table 2) revealed that on an averageRs 29789/ha was incurred for cost of cultivation which was Rs 926/ha higher over the FP.Farmers using improved practices of chickpea cultivation received an average net return Rs 80686/ ha.Farmers also got an addition net return (Rs/ha) of 19120 and 24714 by expenditure of an addition cost (Rs/ha) of 925 and 928 during *rabi*2019-20 and 2020-21, respectively.

The results also revealed that cost benefit ratio under IP and FP were 3.45 to 2.87 and 3.98 to 3.21 during *rabi* 2019-20 and 2020-21, respectively. This may be due to

Table 1. Technology gap, extension gap and technology index of Chickpea FLDs

Year and season	Area (ha)	No. of farmers	Seed yield (q/ha)			% increase over FP	Technology gap (q/ha)	Extension gap (q/ha)	Technology Index (%)
			Potential	IP	FP				
Rabi 2019-20	12	30	26.8	23.1	18.9	22.2	3.70	4.2	13.81
Rabi 2021-22	12.8	32	26.8	23.5	18.3	28.6	3.21	5.26	11.97
Average/Total	**24.8**	**62**	**26.8**	**23.3**	**18.6**	**25.4**	**3.45**	**4.73**	**12.87**

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higher yields obtained under improved technologies compared to farmers practice. This finding is in collaboration with the findings of Mokidue *et al.* (2011)

CONCLUSION

From the above findings, it can be concluded that use of scientific method of chickpea cultivation can reduce the technology gap to a considerable extent thus leading to increased productivity of chickpeain the NICRA adopted village of the Kota district of Rajsthan.

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Relative grain yield and nitrogen use efficiency of basmati rice as affected by the graded doses of nitrogen supplied through neem coated urea

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Basmati rice has special value in Indian culture and civilization. The basmati rice cultivation is quite popular in Punjab, Haryana, Delhi, Uttarakhand and Western Uttar Pradesh. The indiscriminate use of nitrogenous fertilizers in basmati rice cultivation leads to environmental pollution, higher incidence of insect-pests and diseases, reduced profits and lodging of crop. Furthermore, a significant amount of nitrogen is lost by ammonia volatilization, leaching and denitrification in transplanted lowland rice (Kumar *et al.*, 2011). Hence, efforts are required to increase the nitrogen use efficiency in transplanted lowland rice (Kumar *et al.*, 2010). All these losses could be minimized if appropriate amounts of nitrogen with neem coated urea are applied in the basmati varieties. 'Pusa Basmati-1509' is a very popular variety in Bijnor district of Uttar Pradesh, but its optimum N requirement is yet to be worked out to optimize the nitrogen requirement in the light of the use of neem coated urea. The objective of the study was to assess the effect of nitrogen fertilization through neem coated urea on grain yield and nitrogen use efficiency of basmati rice variety 'Pusa Basmati-1509'.

METHODOLOGY

A field experiment was conducted during *kharif* seasons of 2018 and 2019 at the Department of Agronomy, R.S.M. P.G. College, Dhampur , Distt.-Bijnor (U.P.). The treatments