



Research Article

Demonstration - An effective technology for increasing the productivity of cumin

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Article Chronicle :

Received :
28.01.2012;

Revised :
14.02.2012;

Accepted :
08.03.2012

SUMMARY : The present study was conducted in Gudhamalani, Panchayat Samiti, Barmer district of Rajasthan. From Panchayat Samiti was selected maximum number (70) of Front Line Demonstrations on cumin crop conducted by Krishi Vigyan Kendra, Danta, Barmer district during the last five years (2006-07 to 2010-11). The results revealed that the average yield recorded in the FLDs field and farmer's field was 5.93 and 4.35 q/ha⁻¹ during 2010-2011, respectively and FLDs field and farmer's field lowest yield was 4.22 and 3.41 q/ha⁻¹ during 2006-2007, respectively. The result showed 23 to 37 per cent yield increase in FLDs over farmers practice during 2006-07 to 2010-2011. Therefore, front line demonstration programme was an effective tool for increasing the productivity of cumin and changing knowledge, attitude and skill of farmers. This created greater awareness and motivated the other farmers to adopt improved practices of cumin.

How to cite this article : Choudhary, Madan Lal and Pagaria, Pradeep (2012). Demonstration - An effective technology for increasing the productivity of cumin. *Agric. Update*, 7(1&2): 99-101.

Key Words :

Cumin, Front line demonstration, Productivity, Production

BACKGROUND AND OBJECTIVES

Cumin (*Cuminum cyminum* L.) commonly known as Jeera is an important seed spice crop grown in western part of India. It is mainly used in flavouring foods and also used in Ayurvedic medicines. It is a tropical plant and grows well in Gujarat and Rajasthan which the major cumin growing states in the country. High humidity during flowering and fruit set, causes fungal diseases in its crop. The yield of cumin crop is adversely affected by incidence of wilt and blight diseases and attack of aphid. Cumin can be cultivated in all types of soils but well drained sandy loam and medium loam soils are suitable for the crop. Cumin is the major *Rabi* season crop of Barmer district.

The Department of Agriculture, Govt. of India had established a "Technology Mission on Seed Spices" in 1991-1992 to achieve self-sufficiency in seed spices production. Under this mission, the ICAR introduced the concept of "Front Line Demonstration" during 1990-1991. These demonstrations are conducted under the close supervision of scientists of the NARS, Krishi Vigyan Kendras and State Agricultural Universities

and of two to four hectares of land. The FLDs is an important method of transfer of latest package of practices in totality to farmers and main objective of this programme is demonstration of newly released crop production and protection technologies and management practices at the farmer's field under real farming situation at his own field under different agro-climate regions. Though, the farmers learn the latest technology that may lead to higher production or adoption. Realizing the importance of Front Line Demonstration in transfer of latest technologies through KVKs', the present study has been undertaken to study the difference between demonstration package and farmers practices of cumin and to assess effect of FLDs technology on increasing the productivity of cumin.

RESOURCES AND METHODS

The present study was conducted in Gudhamalani, Panchayat Samiti, Barmer district of Rajasthan. This Panchayat Samiti was selected maximum number (70) of Front Line Demonstrations on cumin crop were conducted

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by Krishi Vigyan Kendra, Danta, Barmer district during last five year (2006-2007 to 2010-2011).

The primary data were collected from the farmers with the help of interview schedule and interpreted and presented in terms of percentage and the qualitative data were converted into quantitative form and expressed in terms of per cent increased yield.

Thus, a total sample size comprised of 70 respondents from 7 villages where FLDs were conducted by KVK, Danta, Barmer district of Rajasthan and were included for the study.

OBSERVATIONS AND ANALYSIS

The results obtained from the present investigation has been discussed below:

Major difference between demonstration package and farmers practices of cumin:

The differences in adoption of demonstration and local farmers practices of cumin production technologies were measured as per recommended package and practices in which the major differences was observed regarding high yield variety (HYVs), seed rate, seed treatment and balance use of fertilizers. Table 1 shows that under FLDs only recommended HYVs, seed rate @ 12 kg/ha, Carbendazim @ 2 g/kg and *Trichoderma* @ 4g/kg seed with fungicide, insecticide for seed treatment given to the farmers for demonstration. Whereas, under farmers practice they generally used local self seed at high seed rate without treatment. These differences in the packages were in line with the findings of Singh and Varshney (2010), Verma *et al.* (2010), Khan and Chauhan (2005) and Veerasamy *et al.* (2003).

The production performance of cumin in FLDs programme:

The results obtained during last five years (2006-07 to

Table 1: Difference between demonstration package and farmers practices of cumin

Sr. No.	Particular practice	Demonstration package	Farmers practices
1.	Variety	RZ 223	Local
2.	Seed rate	12 kg/ha ⁻¹	15 - 20 kg/ ha ⁻¹
3.	Seed treatment	Carbendazim @ 2 g/kg seed + <i>Trichoderma</i> @ 4 g/kg seed	Not applied
4.	Sowing method	Broad casting	Local
5.	Fertilizer doses	30 : 20 : 10 (N : P : K kg/ha)	Less quantity without knowledge
6.	Plant protection measures	Need based spray of insecticide and fungicides	No use of insecticides and pesticides

2010-11) are presented in the Table 2. The results revealed that the average yield recorded in the FLDs field and farmer's field was 5.93 and 4.35 q/ha⁻¹ during 2010-2011 and in FLDs field and farmer's field lowest yield was 4.22 and 3.41 q/ha⁻¹ during 2006-2007, respectively. The result shows (Table 2) that 23 to 37 per cent yield increase in FLDs over farmers practice during 2006-07 to 2010-2011. These effects in the demonstration packages were in line with the findings of Singh and Varshney (2010), Verma *et al.* (2010) and Veerasamy *et al.* (2003).

Table 2: Production of performance cumin (RZ 223) in FLDs programme

Year	Under FLD programme		Average yield (q/ha ⁻¹)		% increase in the year over farmers practice
	No. of Demo.	Total Area (ha)	Demo. practice	Farmer practice	
2006-07	10	8	4.22	3.41	23.75
2007-08	10	5	4.61	3.72	23.92
2008-09	10	10	4.92	3.91	25.83
2009-10	20	10	5.23	3.96	32.07
2010-11	30	12	5.93	4.35	36.32
Total	80	45	--	--	--

Conclusion:

It is concluded that the front line demonstration programme was an effective tool for increasing the productivity of crops and changing knowledge, attitude and skill of farmers. The 23 to 37 per cent (2006-2007 to 2010-2011) yield increase in FLDs over farmers practice (traditional) was recorded in cumin cultivation. This created greater awareness and motivated the other farmers to adopt improved practice of cumin. These demonstrations also built the relationship and confidence between farmers and scientists. The beneficiary farmers of FLDs also play an important role as source of information and pure seeds for wider dissemination of the HYV of cumin for other nearby farmers.

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