

## **Impact of OFT and FLD to increase the area and productivity of major crops in Morena district of Madhya Pradesh**

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### **Abstract**

*The demonstration and awareness about the use of seeds of improved variety was found to be effective to improve the crop yield. To improve crop productivity in terms of cropping intensity and optimum utilization of natural resources, crops and cropping pattern were evaluated. After the intervention of Krishi Vigyan Kendra (K.V.K.) in the village, the area and production under crops has been increased. The study impact of OFT and FLD in the major crops of Morena district of Madhya Pradesh for the year 2012-13 to 2016-17 (five years) was carried out at Krishi Vigyan Kendra, Morena. To demonstrate the technology through OFT & FLD, 20 OFT and 15 FLD in cereals, 26 OFT & 30 FLD in Pulses and 15 OFT & 11 FLD in oilseed were organized by K.V.K., Morena (M.P.) at different selected villages in the district. The cultivated area and production of the crops recorded were found to be increase from 2012-13 to 2016-17 in the district before and after the dissemination and adoption of technology. Thus, K.V.K. OFT and FLD proven technologies are helpful to increase the cropping intensity and yield potential (area) per ha to a great extent with increase in the income level of the farming community.*

Keywords: OFT; FLD; Production; Yield; K.V.K.

### **Introduction**

Agriculture in the district is rain fed and the farmers adopt Pearl millet-Mustard/Wheat cropping system which is less profitable and decreased soil fertility. Crop diversification plays an important role in increasing the income of farmers thus providing food and nutritional security to farm family. Most of the farmers in the district belong to small and medium land holding. The cost of cultivation in agriculture increasing day by day, so increase in farmer's income is urgently needed. The sincere efforts of Krishi Vigyan Kendra (K.V.K.), Morena the introduction of short duration Pigeon pea, Chick pea, Green gram, Barley, Vegetables, the agriculture in the district diversified. The Centre has been motivated the farmers to adopt resource conservation technology such as raised bed technology, zero tillage and crop rotation. The diversification of agriculture with pulse crop provided Rs 15,000/- additional income per annum. The K.V.K.

has also helped in enhancement of productivity, profitability and income of farmers as well as their improved livelihood security in the adopted villages of the Krishi Vigyan Kendra, Morena through on farm trials and front line demonstrations of the proven technology, training programs and various types of extension programs like kisan mela, kisan ghothi, awareness camps, scientist visit to the farmer's field and skill development training programs for rural youth, farmers and farm women.

The important mandate of Krishi Vigyan Kendra is to plan and carry out On Farm Trials (OFTs) and Front Line Demonstrations (FLDs) organized in the operational areas for the enhancement of production and productivity. In view of this mandate, OFTs and FLDs were organized in the selected villages after identifying important thematic areas in crop production. The present study was designed to see the impact of OFTs & FLDs to increase the area and productivity of crops in Morena district of Madhya Pradesh.

### **Materials and Methods**

The present study was carried out the On Farm

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Trials (OFTs) and Front Line Demonstrations (FLDs) organizes by the Krishi Vigyan Kendra, Morena (M.P.) under R.V.S.K.V.V., Gwalior (M. P.). This study was conducted during 2012-13 to 2016-17 (five years period) at the farmer's fields in different location of selected village of Morena district of M.P. In cereals, 20 OFT & 15 FLD were carried out whereas in Pulses 26 OFT & 30 FLD and in oilseed 15 OFT & 11 FLD were conducted. Year wise details for the OFT and FLD were given in Table 1.

The OFT and FLD were conducted to changing the performance of cultivated area under crops (in ha) and productivity (yield) of the crops (kg/ha) before and after dissemination and adoption of technology. In OFT and FLD plots, a few critical inputs in the form of quality seed, balanced fertilizers, agro-chemicals etc. were provided and non-monetary inputs like timely sowing in lines and timely weeding were performed. Under the demonstration, farmers were facilitated by K.V.K. Scientist in performing field operation like sowing; spraying, weeding, harvesting etc. of respective villages was imparted with respect to envisaged technological interventions. Visits of the farmers and extension functionaries were organized at demonstration and field days to disseminate the technology message at large all over the district.

### Results and Discussion

The data (Table-2) indicated that the On Farm Trails (OFTs) and Front Line Demonstration (FLDs) has given a good impact over the farming community of Morena district as they were motivated by the new agriculture technologies applied in the demonstrations. The data reveal that under OFT and FLD, we have found the increasing cultivated area (in ha) under crops-during 2012-13 to 2016-17 like in pigeon pea 14153 to 29000 (51.20%), pearl millet 98569 to 142500 (30.83%), sesame 4143 to 19000 (78.20%), soybean

285 to 2200 (87.04%), cluster bean 3500 to 21000 (83.33%), Wheat 104100 to 119900 (13.20%), Chick pea 5300 to 12000 (55.83%), paddy 400 to 1000 (60%) and summer green gram 800 to 3200 (75%) before and after dissemination of technology. The percentage of area mustard and barley crops in the district 2012-13 to 2016-17 were found to be decrease due to these crops area shifted another crops.

The augmentation of crops under OFT and FLD performance during 2012-13 to 2016-17 is also presented in table 2. The yield increase (kg/ha) were recorded indifferent crops such as in case of pigeon pea from 565 to 2150 (73.72%), in pearl millet 2446 to 2900 (15.65%), sesame 481 to 725 (33.65%), soybean 1224 to 1550 (21.03%), cluster bean 1514 to 1950 (22.36%), Wheat 3959 to 4200 (5.74%), mustard 1726 to 1950 (11.50%), chick pea 985 to 1900 (48.20%), paddy 4000 to 4200 (4.76%), Green gram 1000 to 1050 (4.76%) and barley 1944 to 2900 (32.96%).

The yield increment of more in pigeon pea (73.72%) and chick pea (48.20%) in comparison to others are due to the various technological interventions like improve high yielding variety, balance fertilizer, weed management and timely sowing, other technologies should also be apply. The K.V.K. also introduces short duration variety of pigeon pea 142-145 days of maturity like; ICPL- 88039, Pusa- 991, 992, 2001 and 2002 through OFT trials and FLD demonstration. Hence, great impact in this technology intervention to replace long duration variety into short duration variety of pigeon pea in the district.

The possible explanation for pulses crops, pulses are the part of a healthy, balanced diet and have been shown to have an important role in preventing illnesses such as cancer, diabetes, heart disease and more and more. Pulses are a low fat source of protein, with a high fiber content and low glycolic index.

Table 1: Year wise details of OFT and FLD

OFT and FLD carried on		Conducted total number of OFT and FLD					Total
		2012-13	2013-14	2014-15	2015-16	2016-17	
Cereals	OFT	05	03	04	05	03	20
	FLD	03	02	03	03	04	15
Pulses	OFT	05	05	05	06	05	26
	FLD	06	03	10	06	05	30
Oilseed	OFT	01	06	03	03	02	15
	FLD	02	02	02	04	01	11

Table 2: Changing performance of crops area and productivity through OFTs and FLDs

Crops	No. of OFT	No. of FLD	Cultivable area under crops (in ha)			Productivity/Yield of the crops (kg/ha)		
			Before Dissemination of technology	After Dissemination of technology	%Increase/decrease	Before Adoption of new technology	After Adoption of new technology	%Increase
Pigeon pea	07	11	14153	29000	51.20	565	2150	73.72
Pearl millet	06	01	98569	142500	30.83	2446	2900	15.65
Sesame	01	-	4143	19000	78.20	481	725	33.65
Soybean	07	07	285	2200	87.04	1224	1550	21.03
Cluster been	04	08	3500	21000	83.33	1514	1950	22.36
Wheat	09	12	104100	119900	13.20	3959	4200	5.74
Mustard	14	11	134100	128000	(-) 4.76	1726	1950	11.50
Gram	07	03	5300	12000	55.83	985	1900	48.20
Paddy	05	01	400	1000	60.00	4000	4200	4.76
Green Gram	01	01	800	3200	75.00	1000	1050	4.76
Barley	-	01	1700	1400	(-) 21.43	1944	2900	32.96

Pulses provide important amounts of vitamins and mineral. Over 60 percent of total utilization of pulses is for human consumption. The average global yield for pulses in 2010 was estimated as 819 kg/ha. The productivity of Pigeon pea in Morena district was estimated as 2150 Kg/ha. So, we can say that K.V.K., Morena promote pulses crop like pigeon pea, green gram, black gram, cow pea and chick pea by OFTs, FLDs, Cluster Front Line Demonstration (CFLD) and various training programs. Yield enhancement in different crop in front line demonstration has documentation by Tiwari and Sexena (2001), Tomar et al. (2003), Singh and Singh (2011) and Ganwar and Katiyar (2017).

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