

## Impact Analysis of Front Line Demonstrations on Rapeseed & Mustard (*Brassica species*)

<sup>1</sup>Mahak Singh, <sup>2</sup>Amit Tomar and <sup>3</sup>D.K. Singh

<sup>1,3</sup>(Section of Oilseeds), College of Agriculture,

Chandra Shekhar Azad University of Agriculture & Technology, Kanpur-208002, U.P.,  
India.

Department of Genetics & Plant Breeding, College of Agriculture,  
Rani Lakshmi Bai Central Agricultural University, Jhansi-284003, U.P., India.

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### Abstract:

the present study was undertaken to assess the performance of front line demonstrations on rapeseed & mustard was conducted at ten villages of eastern Uttar Pradesh during *Kharif*-2020. A total of 50 farmers were selected based on their socio-economic conditions. Front line demonstrations on rapeseed & mustard were conducted from seasons *Kharif*-2020 at various farmers' fields locations under front line demonstration during this period 50 demonstrations were organized of 1 ha /each using short-duration improved varieties *i.e.* Rh-725, giriraj (ij-31), azadmahak & pitambari. The main objective of the FLDs is to improve the socio-economic condition of the farmers in the eastern Uttar Pradesh region, increasing the rapeseed & mustard cultivated area during *rabi* season in the eastern Uttar Pradesh region. Looking to the better performance of front line demonstration, farmers of the region were highly benefitted and satisfied with improved practice in comparison to their traditional practices. The average yield of rapeseed & mustard was recorded at 1600 kg per hectare and 2400 kg per hectare from farmers practices and improved practices, respectively. The average gross monetary return from farmers & improved practices was 12540 & 76900 rs/ha, respectively. The significant

average cost: benefit ratio of *rabi* rapeseed & mustard variety RH-725 were recorded at 1.49 & 3.30 from both farmers & improved practices, respectively. The significant average cost: benefit ratio of *rabi* rapeseed & mustard variety giriraj were recorded at 2.63 & 3.30 from both farmers & improved practices, respectively. The significant average cost: benefit ratio of *rabi* rapeseed & mustard variety azadmahak were recorded at 2.81 & 2.24 from both farmers & improved practices, respectively. The significant average cost: benefit ratio of *rabi* rapeseed & mustard variety pitambari were recorded 2.34 & 1.82 from both farmers & improved practices, respectively.

### **Introduction:**

rapeseed and mustard are the major *rabi* oilseed crops of India. They occupy a prominent place being next in importance to groundnut both in area and production, meeting the fat requirement of about 50 % of populations of Uttar Pradesh, Punjab, Rajasthan, Madhya Pradesh, Bihar, Orissa, West Bengal and Assam. It constitutes a group of oil seeds comprising 2 distinct types 1) autogamous: yellow sarson and brown sarson (toria) and indian mustard and 2) allogamous: brown sarson and lotnitype and toria and taramira (rocket salad). Rapeseed contains about 42 % oil and mustard contain about 38-40 % oil. The seed and oil are used as condiments in the preparation of pickles and for flavouring curries and vegetables. The estimated area, production and yield of rapeseed-mustard in the world was 36.59 million hectares (mha), 72.37 million tones (mt) and 1980 kh/ha, respectively, during 2019-20. Globally, India accounts for 19.8 % and 9.8 % of the total acreage and production (USDA).

**Source:** food & agriculture organization statistical databases (faostat, 2020).

### **Resources & methodology:**

In the present study performance of improved technologies of sesame against local check was evaluated through front-line demonstrations conducted at farmer's fields during *rabi* season-2020. A total of 50 demonstrations were laid on 50 ha area in 30 villages namely; Himattpur, Kashipur, Sujour, Naugoan, Mawaya, Prempur, Devbrandpur, Ambedkar Nagar, Hathigaon, Shivajpur, Gujela, Gajipur, Tirwa, Saha (Kundni), Tons, Baripal (Koharce), Kurmikhera, Tendula, Bindki, Shivrajpur, Benikhera, Apsheri, BhawanideenKhera, Gangoly, Pansaria, Arjhoramahu, Lalpur, Mohamdabad, Gorhidhrami Of 06 District Namely; Unnao, Fatehpur,

Kanpur Dehat, Kanpur Nagar, Kannuj, Firojabad of eastern Uttar Pradesh during *Kharif*-2020. The soils of the study area are mostly sandy loam to clay loam in texture with low nitrogen, medium phosphorus and high in available potassium. The improved technologies include improved varieties viz. Rh-725, giriraj (ij-31), azad mahak & pitambari recommended doses of fertilizer and plant protection chemicals were supplied free of cost to the farmers. The crop was sown from 22-09-2020 to 29-09-2020 with a crop geometry of 30 x 20 cm and seed rate of 4-5 kg/ha. The total amount of phosphorus and potassium was applied as basal dose along with half the dose of nitrogen and the remaining dose of nitrogen was top-dressed in two equal splits at 30 and 60 days after sowing. Hand weeding was done once at 20-30 days after sowing. The total number of 50 beneficiary farmers were associated under this FLDs programme for maximizing the production and double your income as per the suggestions of our hon'ble prime minister Shri Narendra Modi Ji. The FLDs techniques were used as ***"improved practices vs. Farmers practices (local check)"***. The demonstrations of improved technologies were taken in an area of 1 ha of each farmer. In each demonstration, one control plot was kept where farmers practices were carried out. The critical inputs such as seed, fertilizers and pesticides were supplied to the farmers free of cost for demonstration purposes. Adoption of improved technology by the farmers and guidance was ensured through regular visits by the ChandraShekhar Azad University of agriculture & technology, Kanpur scientists to the demonstrations field. Field days and group meetings/ farmers training/ Kisan gosthi were organized at the site of demonstrations to provide opportunities for other farmers to see the benefit of demonstrated technologies. The feedback from the farmers was utilized for further improvement in the research and extension programme. The crop was harvested between 16-02-21 to 12-03-21. Data were collected from the FLDs farmers and analyzed with statistical tools to compare the performance of farmer's field and FLDs field. Total 50 farmers were selected based on their socio-economic conditions and also based on their own choice for conducted front line demonstrations on rapeseed & mustard during *rabi*-2020 in eastern Uttar Pradesh.

### **Results & discussion:**

the results were revealed that the performance of the crop stand was good with healthy crops. The average yield production of *rabi* rapeseed & mustard variety giriraj were recorded 1900 kg per hectare and 2750 per hectare, respectively from farmers and improved

practices, the yield of variety rh-725 was recorded 1600 kg/hectare & 2400 kg/ha, respectively from farmer's and improved practices, the yield of variety azad mahak was recorded 1600 kg/ha and 2250 kg/ha, respectively from farmers and improved practices and the yield of variety pitambari were recorded 1200 kg/ha and 1700 kg/ha, respectively from farmers and improved practices. The average gross monetary returns of *rabi* rapeseed & mustard variety giriraj were recorded at 34,680 Rs. per hectare and 1,31,875 Rs. per hectare, respectively from farmers and improved practices, the average gross returns of variety rh-725 have recorded 34,680 Rs. per hectare & 1,19,000 Rs. per ha, respectively from farmer's and improved practices, the average gross returns of variety azad mahak were recorded 34,516 Rs. per hectare & 1,11,825 Rs. per ha, respectively from farmer's and improved practices and the average gross returns of variety pitambari were recorded 32,504 Rs per hectare & 8,1050 Rs. per ha, respectively from farmers and improved practices. The significant average cost: benefit ratio of *rabi* rapeseed & mustard variety giriraj were recorded 2.26 and 3.98, respectively from farmers and improved practices, the average gross returns of variety rh-725 were recorded 2.63 & 3.30, respectively from farmer's and improved practices, the average gross returns of variety azad mahak were recorded 2.27 & 2.81, respectively from farmer's and improved practices and the average gross returns of variety pitambari were recorded 1.76 & 2.17, respectively from farmers and improved practices. The significant differences were recorded from farmers practices and improved practices in several points such as variety, seed rate, seed treatment, time of sowing, method of sowing, fertilizers management, water management, plant protection, threshing, harvesting & marketing, etc. The details of the results are given below in table-1.

**Table-1: details of the results of FLDs on rapeseed & mustard in *rabi*-2020.**

Sn	Varieties used in ip	Situation Irrigated/ rainfed	Varieties used in fp	Mean yield (kg /ha)		Gmr (rs/ha)		B: c ratio	
				Ip	Fp	Fp	Ip	Fp	Ip
1.	Rh-725	Irrigated	Local	2400	1600	34680	119000	2.26	2.98
2.	Giriraj	Irrigated	Local	2750	1900	34680	131875	2.63	3.30
3.	Azad mahak	Irrigated	Local	2250	1600	34516	111825	2.27	2.81



4.	Pitambari	Irrigated	Local	1700	1200	32504	81050	1.76	2.17
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**Fig.-1: monitoring of the FLDs on rapeseed & mustard during rabi-2021.**

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