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Production Recommendations and Information Source Utilization of Rapeseed Mustard Growers in Sub-tropics of Kathua District in Jammu Division.

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ABSTRACT

Oilseed plays an important role in agriculture economy in many regions of the world. Oilseed is a major source of protein and contributes considerably to the export earnings. Major oilseed producing countries in the world are USA, Brazil, Argentina, China and India and account for 82 per cent of oilseed production in the world. In the category of oilseed crops, rapeseed mustard is grown in both the regions of J&K state. In Jammu division, rapeseed mustard is grown in Sub-tropical and temperate agro-climatic zones. The present investigation was carried out to study the adoption of production recommendations of rapeseed mustard in the subtropical zone of Kathua district. A list of 522 mustard growers was procured from Department of Agriculture of Kathua district and 95 respondents were selected randomly with the help of random number generator. A comprehensive data collection tool was devised for collection of data. After pretesting and needful modifications the data was collected from selected 95 respondents. It has been concluded from the study that toria is the main rapeseed mustard crop grown by the farmers of the study area and all the respondents were using their own seed and they were of the view that toria crop raised by using own seed attains early maturity which does not hamper the timely sowing of wheat crop. It has been observed that farmers of the study area are not adopting the recommended seed rate and none of the farmers are adopting seed treatment. Regarding chemical fertilizers, farmers are not using potassic fertilizer for growing rapeseed mustard crops. Department of agriculture and co-farmers are the main sources of agri-input information.

Key words: Adoption, rapeseed, mustard, Information source

INTRODUCTION

Rape seed mustard is an important edible oilseed crop among nine major oilseed crops *i.e.* Soybean, Groundnut, Sun-flower Safflower, Castor, Sesame, Linseed, Rapeseed mustard& Niger. Rapeseed-mustard group of crops has diversified domestic and industrial uses. Rapeseed mustard is the third most important source of vegetable oil in the world and is grown in more than 50 countries across the globe. The world production of rapeseed mustard has been increasing at a rapid rate in several countries largely in response to the continuing increase in demand for edible oils and its products.The production of rapeseed mustard at global level is about 63.09mt (million ton) from an area of 34.1mha and world productivity is about 18.50qts/ha (Directorate of Rapeseed Mustard Research,2012-13). Rapeseed mustard comprises of two words rapeseed and mustard. Rapeseed comprises of mainly *Brassica rapa* (Toria) & *Brassica napus* (Gobhisarson) and mustard comprises of *Brassica juncea* (Indian Mustard). *Brassica rapa*, *B. napus* and *B. juncea* are grown predominantly for oil and seed meal. In India, *Brassica juncea* (Indian Mustard) covers about 85 per cent area of the total rapeseed mustard area,(Yadav,2012). It is an important source of edible oil, condiment and vegetable in the Indian diets. These crops play an important role in Indian oil economy. India is one of the largest rapeseed-mustard growing countries in the world, occupying the first position in area and third position in production. The rapeseed-mustard, which contributes nearly 80 percent of the total rabi oil seed production, is a vital component in edible oil sector in India. Indian contribution to the world acreage and production is 19.29 per cent and 11.12 percent respectively, area under rapeseed mustard crop in India is 6.3mha with production of 7.4mt and productivity is 11.76 qts/ha. (Directorate of Rapeseed Mustard Research, 2012-13).In terms of rapeseed mustard productivity global ranking of India is 28th (Bhardwaj,2013).The leading rapeseed mustard growing states in India are Rajasthan,U.P, Haryana and West Bengal. The projected demand for oilseeds in India is around 34 million tonnes by 2020, of which about 14 million tonnes (41%) is to be met by rapeseed mustard. Rapeseed-mustard is the second most important edible oilseed crop in India after groundnut. In Jammu & Kashmir rapeseed mustard is mainly grown as rabi oilseed crop both as sole crop as well as mixed crop with wheat & berseem. In J&K, productivity of rapeseed mustard is about 6.98qts/ha

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which is about 37.72 per cent of global productivity and 67.85 per cent of national productivity. Lack of knowledge about production recommendations may be the reason for low productivity of rapeseed mustard in J&K as compared to national productivity. In Jammu province, the total area under rapeseed mustard crop is about 11751 ha which comprises of both temperate and sub-tropical area with maximum area under district Kathua followed by Doda. (Directorate of Agriculture, Jammu 2012-13).The researchable problem is "why rapeseed productivity is low in the state?" The presumed reasons could be : i) low or no use of chemical fertilizers, iii) lack of adoption of recommended rapeseed mustard cultivation practices, iv) resource poor farmers, and v) small land holdings. Thus, to empirically test these the research pursuit was carried out to study the"Production recommendations and information source utilization pattern of rapeseed mustard growers in sub-tropics of Kathua district in Jammu Division" with the following objectives: to study the adoption of production recommendations of rape seed mustard by the farmers and to study the utilization pattern of information sources by the farmers regarding rape seed mustard crop

METHODOLOGY

A list of rapeseed mustard growers in sub-tropical belt of Kathua district was obtained from Department of Agriculture. Ninety five rapeseed mustard growers were selected randomly by using Random Number Generator. The selected respondents were from the villages of Merath, Thanon, Naryanpur, Budhi, Chapaki, Rehni, Koungani, Manglore, Nanan, Jhakhol, Dhani, Bakhta, of the Kathua district. Data collecting tool was devised and pre-testing was exercised on 15 non-sampled respondents. On the basis of pre-testing, the data collection tool was refined and administered to the selected respondents. Data so collected was analyzed using SPSS software.

RESULTS AND DISCUSSION

Table 1: Distribution of respondents growing different rape seed mustard crops

n=95

Crop	*f*	Percent
Toria	91.00*	96.80
Raya	6.00*	6.38
Gobi sarson	20.00*	21.27
Toria only	68	72.34
Raya only	2	2.13
Toria and Gobi sarson	19	20.22
Toria and raya	3	3.19
Toria, raya and gobisarson	1	1.06
Not grown any rapeseed crop this time	1	1.06

(multiple response)

Analysis of table 1 reveals that among different rapeseed mustard crops, toria was grown by the maximum farmers (96.80 %) followed by gobi sarson (20.00 %) and raya (6.00 %). These were those farmers who were growing more than one rapeseed mustard crops. The table further revealed that 72.34 per cent farmers were growing toria as a sole crop and rest were growing mixed rapeseed crop.

Table 2: Adoption of recommended practices of rapeseed mustard

Crop	Sowing time		Seed rate		Source of seed		Method of sowing		Seed treatment		Irrigation	
	recomm.	Other than recom	As per recomm.	Other than recom	Own	DoA/ pvt dealer	Broad casting	Line sowing	Yes	No	Irrigated	Un irrigated
Toria n= 91	69.24	30.76	25.28	74.72	100.00	0.00	100.00	0.00	0.00	100.00	5.49	94.51
Raya n = 6	16.66	83.34	33.33	66.67	33.33	66.67	100.00	0.00	0.00	100.00	100.00	0.00
Gobi Sarson n = 20	65.00	35.00	55.00	45.00	65.00	35.00	100.00	0.00	0.00	100.00	5.00	95.00

The analysis of table 2 reveals that 69.24 per cent of the farmers in the study area adopted the recommemnded sowing time for toria followed by gobhi sarson (65.00 %) and raya (16.66). As a seed rate is concerned, maximum farmers were using recommended seed rate in gobhi sarson (55.00 %) followed by raya (33.33 %) and toria (25.28 %) respectively. The study further revealed that all farmers were using their own seeds for sowing toria followed by gobhi sarson (65.00 %) and raya (33.33). Further, 100 per cent of the farmers were adopting broadcasting method of sowing for all the three main rapeseed crops *i.e* toria, raya and gobhi sarson. None of the farmers was using seed treatment. The study further revealed that 100 per cent of the farmers were growing raya under irrigated conditions and gobhi sarson and toria under un-irrigated conditions in the study area. The findings of this table is also supported by findings of Dutta (2014).

Table 3: Adoption of chemical fertilizers by the rapeseed mustard growers

Crop	Urea		DAP		MOP	
	Applied	Not applied	Applied	Not applied	Applied	Not applied
Toria	48.00	43.00	75.00	16.00	1.00	90.00
n = 91	(52.74)	(47.26)	(82.42)	(17.58)	(1.09)	(98.91)
Raya	3.00	3.00	6.00	0.00	0.00	6.00
n = 6	(50.00)	(50.00)	(100.00)	(0.00)	(0.00)	(100.00)
Gobi sarson	10.00	10.00	10.00	10.00	0.00	20.00
n = 20	(50.00)	(50.00)	(50.00)	(50.00)	(0.00)	(100.00)

The analysis of table 3 reveals that 52.74 per cent of the farmers in study area were using urea for growing toria followed by gobhi sarson & raya (50 %). As for DAP fertilizer is concerned, 100 per cent of the respondent farmers were using it for growing raya followed by toria (82.42 %) and gobhi sarson (50.00 %).The study further revealed that only 1.09 per cent of the farmers were using

MOP in toria and none of the farmer was using MOP for growing raya and gobhi sarson.

Table 4: Mean application of fertilizers by the respondents in rape seed mustard crop

Time of application	UREA (kg/ha)	DAP (kg/ha)	MOP (kg/ha)
Toria (n = 91)			
Basal dose	60.91 ± 39.00	93.16±40.58	-
After sowing	53.80 ± 15.70	-	-
Top dressing	55.43± 16.52	-	-
Raya (n = 6)			
Basal dose	65.00 ± 49.50	72.83 ± 21.73	-
After sowing	-	-	-
Top dressing	70.00 ± 42.43	-	-
Gobi sarson (n = 20)			
Basal dose	40.00 ± 8.16	89.33 ± 27.43	-
After sowing	44.50 ± 13.70	-	-
Top dressing	60.00 ± 28.28	-	-

Analysis of the table shows that farmers were using average 60.91, 65.00 and 40.00 kg/ha urea as basal dose in toria, raya and gobhi sarson, respectively while 53.80 and 44.50 kg/ha average urea after sowing in Toria and gobhi sarson and 55.43,70.00 7 60.00 kg/ha urea as top dressing in toria, raya and gobhi sarson, respectively. Regarding DAP, farmers in the study area are using average 93.16,72.83&89.33 kg/ha as basal dose in all the three main rapeseed mustard crops.

Table 4: Distribution of respondents on the basis of use of f y m

Crop	F Y M	
	Applied	Not applied
Toria (n = 91)	21.00 (23.08)	70.00 (76.92)
Raya (n = 6)	1.00 (16.67)	5.00 (83.33)
Gobi Sarson (n = 20)	4.00 (20.00)	16.00 (80.00)
Mean dose of F Y M 10.63 mt/ha S.D.± 1.89		

Analysis of the table 4 showed that only 23.08 per cent of the farmers were applying FYM for growing toria followed by gobhi sarson (20.00 %) &raya (16.67 %) in the study area. The study further revealed that mean dose of FYM was 10.63mt/ha.

Table 5: Adoption of plant protection chemicals by the rape seed mustard growers

Crop	Insect observed		Treatment		Name of pesticides known	
	f	%	*F*	%	*f*	%
Toria n =91	8.00	8.79	6.00	6.59	1.00	1.10
Raya n= 6	1.00	16.67	1.00	16.67	1.00	16.67
Gobi sarson n =20	6.00	30.00	5.00	25.00	2.00	10.00

Figures in the table 5 depicts that 30 per cent of the farmers observed insect in gobhi sarson followed by raya (16.67 %) &8.79 (percent) in toria crop in the study area. The study further revealed that only 25 per cent of the gobhi sarson growers applied pesticide for insect treatment followed by raya (16.67 %) and toria (6.59 %). Further only 16.67 per cent of the raya growers were knowing the name of the pesticide used followed by gobhisarson growers (10.00 %) and toria growers (1.10 %).

Table 6: Sources of information utilized by the rape seed mustard growers for purchase of inputs

Sourceof information	Seed		Fertilisers		Pesticides	
	f	%	*f*	%	*f*	%
Deptt.of Agriculture	42.00	44.68	8.00	8.51	1.00	1.06
Co farmer	32.00	34.04	19.00	20.21	1.00	1.06
Private dealers	6.00	6.38	10.00	10.64	4.00	4.25
Self experience	12.00	12.77	16.00	17.02	2.00	2.13
Mass media	2.00	2.13	1.00	1.06	0.00	0.00
Family members	2.00	2.13	1.00	1.06	0.00	0.00
Krishivigyankendra	0.00	0.00	1.00	1.06	1.00	1.06

Analysis of the table 6 shows that field functionaries of agriculture department were the main source of information of rapeseed growers regarding seed followed by co-farmers. Regarding the information about fertilizers, co-farmers and input dealers were the main sources. So a as pesticide is concerned, private dealers were the main source of information utilized by the farmers of the study area. These findings are also supported by Sharma *et.al* (2008).

CONCLUSION

It has been concluded from the study that toria is the main rapeseed mustard crop grown by the farmers of the study area and all the respondents were using their own seed and they were of the view that toria crop raised by using own seed attained early maturity which did not hamper the timely sowing of wheat crop. It has been observed that farmers of the study area are not adopting the recommended seed rate. Regarding chemical fertilizers, farmers are not using potassic fertilizer for growing rapeseed mustard crops. From the conclusions it has been suggested that: early maturing Toria varieties should be developed, farmers' traditional wisdom needs attention, literature in vernacular language should be developed, timely supply of inputs should be ensured, farmers training programmes on regular basis should be conducted in remote areas, and frequent mobility of extension functionaries should be ensured.

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