



Research Paper

Pesticide purchasing behaviour of farmers in Dharwad district

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ABSTRACT : The study on pesticide purchasing behaviour of farmers was undertaken in all the taluks of Dharwad district and from each taluk 24 farmers were selected randomly. Tabular analysis was used for analysing purchase pattern of pesticides, farmer preferences for purchasing of pesticides and promotional measures for the purchase of pesticides by the farmers. The results found that all 120 samples farmers quoted that their source of purchase was from agro service centre. With regard to mode of purchase for pesticides majority 70 per cent of the farmers used to purchase on cash basis. Regarding time of purchase, as many as 87.5 per cent of farmers were used to purchase one day before spraying. As for the season of purchase the result revealed that most of the farmers (94.16 %) made purchases pesticides during *Kharif* season. The analysis of farmer preferences for purchasing of pesticides revealed that majority of the farmers 86.66 per cent opined that brand image was the preference for purchasing of pesticides and Kisan Call Centre guidance (5 %) was the least factor as opined by the total respondents in the study area. The results of the promotional measures for the purchase of pesticides by the farmers shows that among 120 sample farmers, 110 farmers opined that field demonstration was the most influential promotional measures for the purchase of pesticides by the farmers which accounts for 91.66 per cent and fairs was the least promotional measures for the purchase of pesticides as opined by 12.50 per cent of the total surveyed respondents in Dharwad district.

KEY WORDS: Purchase pattern, Farmer preference, Kisan Call Centre, Promotional measures, Pesticides

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INTRODUCTION :

Agriculture is the mainstay of the Indian economy. It is a formidable task to ensure food security for 1.34 billion Indian people with shrinking cultivable land resources and this necessitates the use of high yielding variety of seeds, balanced use of fertilizers and judicious application of quality pesticides along with education to farmers for the implementation of modern farming

techniques. For each acre of land there are 50 to 300 million buried weeds. Crop or plants have to compete with 30,000 species of weeds, 3,000 species of nematodes and 100,000 species of plant eating insects. 25 to 40 per cent of crop output is lost due to the attack of pests and diseases during 2015-16. To minimize these losses and to enhance yield, it is essential to use crop protection chemicals (www.ficci.com).

The role of pesticides in crop production is important

as it is a protective umbrella for other inputs. A crop could be attacked by a number of pests, which appear at different stages of growth of crop but their virulence varies widely. The loss sustained by the crop depends upon the extent and pest attack. If the attack is of epidemic nature, the crop loss may be total in spite of all other inputs being optimal. Timely and judicious use of pesticides can save the crop from such disasters. Hence, pesticides play a crucial part in the agribusiness input industry and progressive efforts are made to improve pesticides marketing management in agriculture sector.

India is the fourth largest global producer of pesticides after US, Japan and China. This segment generated a value of US\$ 4.4 billion in 2015 and is expected to grow at 7.5 per cent per annum to reach US\$ 6.3 billion by 2020. While the domestic demand is expected to grow at 6.5 per cent per annum, exports are estimated to grow at 9 per cent per annum during the same period. The production of pesticides in India is 1,86,830 million tonnes during 2014-15. Approximately 50 per cent of the demand comes from domestic consumers while the rest goes towards exports (Anonymous, 2016).

Globally, India shared around 3.75 per cent of the pesticides. The usage of pesticide in India is 0.6 kg/ha. The total pesticide consumption in India is around 54,532 metric tonnes, in which 65 per cent are in the form of insecticides, 16 per cent are herbicides, 15 per cent are fungicides, 4 per cent are others. The highest consumption of pesticide in India was found in Maharashtra *viz.*, 11,665 metric tonnes and lowest consumption was found in Andaman and Nicobar Islands *viz.*, 13.5 metric tonnes. The consumption of pesticide in Karnataka *viz.*, 1,283 metric tonnes in 2015-16 (www.indiastat.com).

Marketing management of pesticides is a system of interacting activities of agencies which moves the pesticides from place of production to the ultimate buyer. Hence, distribution system is the nucleus of marketing system. Marketing wing of any pesticide company has a greater responsibility to make availability of pesticides to farmers at right time, right place and right price. The distribution system involves a number of channels, marketing functionaries and interaction between them. Hence, the choice of right distribution channel is of paramount importance to the manufactures. Distribution channel plays a strategic role in the effective performance of pesticide marketing system. The pesticide distribution channel take possession of goods on certain specified

terms and conditions like issue price, distribution margin, credit period, discount if any etc. the strategies and the policies followed by the pesticides distribution channel have to be in consonance with the marketing operations of the manufactures. Hence, the study concentrated on purchase behaviour of farmers in pesticides in the study area.

MATERIALS AND METHODS :

Dharwad district was purposively selected for the study, since it has multiple cropping situation. Primary data were collected from selected farmers with pertaining to their purchase pattern of pesticides, farmers preference for purchasing of pesticides and promotional measures for the purchase of pesticides by the farmers. For the study, all the taluks of Dharwad district such as Dharwad, Hubli, Navalgund, Kalghatgi and Kundgol were selected and from each taluk 24 farmers were selected randomly. Thus, the total sample size for the study was 120 farmers for fulfilling the objective of the study.

The data collected were presented in tabular form to facilitate easy comparisons. The tabular presentation was followed to study the purchase pattern of pesticides, farmers preference for purchasing of pesticides and promotional measures for purchasing pesticides by the farmers were worked out in terms of percentages.

RESULTS AND DATA ANALYSIS :

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Purchase pattern of pesticides by the farmers :

Table 1 presents the purchase pattern of pesticides by the farmers. The results revealed that all 120 sample farmers quoted that, their source of purchase was from private agro service centre which accounts for 100 per cent followed by Raita Samparka Kendra (72.5%), as availability of all different types of pesticide brand in the market and farmers were also purchased from Raita Samparka Kendra (RSK) on subsidy basis.

With regards to mode of purchase for pesticides, majority 84 sample farmers used to purchase on cash payments that accounts for 70 per cent as farmers were not getting credit facility from pesticide dealers, followed

by 20 per cent of the farmers made purchase of pesticides both on cash and credit terms and only 10 per cent of the farmers made purchases on credit basis as farmers had good relationship with dealers, permanent and regular customer to purchase pesticide on credit basis.

Regarding time of purchase for pesticides as many as 80.83 per cent of farmers were used to purchase one day before spraying, this was due to the fact that pesticides get leaked and exposed to air during storage if they purchase early. While 12.50 per cent of the respondents purchased the pesticides two to three days before spraying and 6.66 per cent of the farmers purchased on the day of spray as looking into the crop stage and pest infestation level.

The results also reveals that, as for the season of purchase most of the farmers (94.16 %) made purchases

of pesticides during *Kharif* season, followed by 73.33 per cent of the farmers who purchased in *Rabi* season and 39.16 per cent of the farmers purchased in summer season because most of the farmers grow their crops in *Kharif* season. Depending upon monsoon, land availability and irrigation, farmers growing crops in *Rabi* and summer season that leads to decrease in the purchase of pesticides. Similar results were observed in case of Gururaj (2007).

Farmers preference for purchasing of pesticides:

The result presented in Table 2 revealed that majority of the farmers 86.66 per cent opined that brand image was the preference for purchasing of pesticides because farmers purchased that brand which had good results and strong reputation in the market.

Sr. No.	Particulars	No. of respondents	Percentage
1.	Source of purchase		
	Private agro service centre	120	100
	Raita Sampark Kendra	87	72.50
2.	Mode of purchase for pesticides		
	Cash	84	70
	Credit	12	10
	Cash and credit	24	20
3.	Time of purchase		
	2-3 days before spraying	15	12.50
	One day before spraying	97	80.83
	On the day of spraying	8	6.66
4.	Season of purchase		
	<i>Kharif</i>	113	94.16
	<i>Rabi</i>	88	73.33
	Summer	47	39.16

Sr. No.	Particulars	No. of respondents	Percentage
1.	Brand image	104	86.66
2.	Dealers recommendation	95	79.16
3.	Price	79	65.83
4.	Peer group influence	64	53.33
5.	Influence of advertisement	53	44.16
6.	Pesticide company officer recommendation	42	35.00
7.	Credit availability	33	27.50
8.	Own determination of the pest infestation level	21	17.50
9.	Kisan Call Centre guidance	6	5.00

Dealers recommendation was the next factor preferred by the farmers while purchasing pesticides as opined by 79.16 per cent of the respondents, followed by price (65.83 %), due to the purchasing power of farmers. Peer group influence (53.33 %), influence of advertisement (44.16 %), pesticide company officer recommendation (35 %), credit availability (27.50 %), own determination of the pest infestation level (17.50 %) and Kisan Call Centre guidance (5%) was the least factor as opined by the total respondents in the study area. Here farmers were influenced by company advertisement for purchasing pesticides, credit facility given by the dealers and less proportion of farmers identified pest infestation level for purchasing pesticides due to lack of knowledge of pesticides. Similar observation were expressed by Sampathkumar (2014) and Shivakumar (2010).

Promotional measures for the purchase of pesticides by the farmers in Dharwad district :

The results of the promotional measures for the purchase of pesticides by the farmers in Dharwad district are presented in Table 3. The promotional measures considered were field demonstration, Field day, farmers meeting, jeep campaign, banners, distribution of literature, posters, mass media, shop hangers and fairs.

The results revealed that among 120 sample farmers, 110 farmers opined that field demonstration was the most influential promotional measures for the purchase of pesticides by the farmers which accounts for 91.66 per cent. Field day was the next important influential promotional measures for the farmers to purchase pesticides as opined by 80 per cent of the respondents. Farmers’ meeting was another factor for the farmers to purchase pesticides as opined by 70.83 per cent of the

respondents. The results inferred that field demonstration, field day and farmers meeting, were the most influential promotional measures for the purchase of pesticides by the farmers as it was attributed to the fact that seeing is believing means that farmers directly knowing the performance of the products and farmers interact with marketing personnel and get things clarified.

Factors such as jeep campaign (65%), banners (57.50 %), distribution of literature (50 %), posters (41.66 %), mass media (27.50 %), shop hangers (18.33 %) and fairs were considered to be the promotional measures for the purchase of pesticides. Here Jeep campaign, banners, distribution of literature, posters are provided relatively less effective alternative way of promotional measures for the purchase of pesticides by the farmers and campaign is usually done after the sowing season with the help of jeeps through distribution of literature, fixing posters in village area to create awareness about the brand. Mass media, shop hangers and fairs were found be least promotional measures, as farmers rarely come across these types of promotional measures for purchasing of pesticides in Dharwad district. Similar results was studied by Basavaraja (2013).

Policy implications:

During study, it was found that Kisan Call Centre (KCC) guidance was the least factor preferred by the farmers while purchasing pesticides. Hence, there is need to disseminate information about Kisan Call Centre among the farmers by Agriculture Department that respond issues raised by farmers instantly in local language and solve their issues related to farming.

It was found that field demonstration as a promotional measure were most preferred by the farmers in the study area, as it provides them with an idea of

Table 3: Promotional measures for the purchase of pesticides by the farmers in Dharwad district (n = 120)

Sr. No.	Promotional measures	No. of respondents	Percentage
1.	Field demonstration	110	91.66
2.	Field day	96	80.00
3.	Farmers meeting	85	70.83
4.	Jeep campaign	78	65.00
5.	Banners	69	57.50
6.	Distribution of literature	60	50.00
7.	Posters	50	41.66
8.	Mass media	33	27.50
9.	Shop hangers	22	18.33
10.	Fairs	15	12.50

practical performance of the crop. The pesticide supplying firms need to take into account this preference of the farmers in formulating their product promotion strategies.

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