

## Marketing management of plant nutrients in Dharwad district

Market is a sphere within which price determining forces like demand and supply are applied to the particular market situation. Plant nutrients are essential for producing sufficient and healthy food for the world's expanding population. Plant nutrients are therefore a vital component of any system of sustainable agriculture. The plant nutrients consumption has increased from less than 1kg per hectare in 1951-52 to 143.13 kg per hectare in 2011-12. (Acharya and Agarwal, 2014) Consumption of plant nutrients over a period has shown increasing trend. In Dharwad district, the total geographical area is 4260 sq.km, gross irrigated area is 63.2 thousand hectares and net irrigated area is 51.3 thousand hectares. Major crops in Dharwad district cereals crop like sorghum, wheat and maize; pulse crops like green gram, black gram and chick pea; oilseeds like ground nut, sunflower and safflower; commercial crops like cotton and chilly. The present research aims to understand the marketing management of major plant nutrients, their pricing, promotion and place of sale which are important things to have better insight in the marketing process of these plant nutrients in Dharwad district.

This study considered plant nutrients for the present analysis. Random sampling procedure was followed to select samples in the Dharwad district in the year 2015-16. Tabular analysis was followed to analyse marketing management, logistics management and the share of different channels in the distribution of plant nutrients in the Dharwad district.

Secondary data were collected from four Raitha Samparka Kendras (RSKs) and two Taluka Agricultural Produce Co-operative Marketing Societies (TAPCMS) of Dharwad district for a period of five years from 2010-11 to 2014-15. Primary data were collected with the help of pre-tested and well-structured questionnaire, from wholesalers, retailers and wholesalers cum retailers.

Marketing efficiency was calculated by using the formula:

$$E = (O/I) \times 100 \text{ (Acharya and Agarwal, 2014)}$$

Where,

E=Marketing efficiency

O=Value added by Marketing system

I=Cost of Market intermediary

The results of the fertilizers and manures procurement practices adopted by cooperative, public and private channels are presented in Table 1. The results indicate that the size of procurement of manures for public channels (Raitha Samparka Kendras), cooperative channels (Taluka Agricultural Produce Co-operative Marketing Societies) and private channels was determined by different criterion. In the case of public channel the size of procurement was determined by the quota allocated by the government to the district. The district level allotments were made based on the fertilizers requirement estimates made

Table 1. Procurement management of fertilizers and manures in Dharwad district

Sl. No.	Particulars	Co-operative channel (TAPCMS)	Public channel (RSK)	Private channel		
				Wholesalers	Retailer	Wholesaler cum retailer
1	Size of procurement	Determined by manufacturer based on their quantity allotted to the district and also cultivated area in taluks and villages	Depends on government allotted to the district	Determined by number of farmers in the surrounding area	Determined by number of farmers in the surrounding area	Determined by number of farmers in the surrounding area
2	Sources of supply	Co-operative, Private and Public fertilizer manufacturing units	Private fertilizer company	Co-operative, private and public fertilizer manufacturing units	Co-operative, private and public fertilizer manufacturing units	Co-operative, private and public fertilizer manufacturing units
3	Arrangement for transportation	Own responsibility	The responsibility of transporting fertilizer to target from fertilizer companies.	Own responsibility	Own responsibility	Own responsibility
4	Frequency of procurement	Once in a fortnight	Once in a month or depended on allotment	Once in ten days	Once in a week	Once in eight days
5	Average quantity procured per batch	60 tonnes	40 to 50 tonnes	70 tonnes	20 tonnes	80 tonnes
6	Lead time in procurement	Seven days	Five days	Fifteen days	Seven days	Fifteen days

TAPCMS: Taluka Agricultural Produce Co-operative Marketing Societies.

RSK: Raitha Samparka Kendra

by the Agricultural Department of the Dharwad district, while manufacture would determine quantity allocation to each TAPCMS in the case of cooperative channel, based on cultivated area in each taluka. In the case private channel the size of procurement is determined by the number of farmers in the surrounding area. (Dilip Kumar, 2011)

Arrangement for transportation of procured fertilizer was the responsibility of the respective procuring agencies particularly for (TAPCMS) and private channels (wholesaler, retailers and wholesaler cum retailer). However, consignments of public channel (Raita Samparka Kendra) were transported by the supplying fertilizer companies to the target with their own cost and responsibility. (Soumya, 2015)

The frequency of procurement of fertilizers by retailers from rake points was on weekly basis. Wholesalers and wholesaler cum retailers procure these fertilizers from wholesalers once in ten days and once in eight days respectively. Cooperatives procure them once in fortnight, while public channel get the nutrients either once in month or depending upon allotment. It was seen that the size of operations of the retailers was very less therefore, they have to procure more frequently as compared to others.

The average quantity of fertilizers procured per batch varied across the channels from 20 tonnes to 80 tonnes. For instance, the quantity were 60 tonnes, 40-50 tonnes, 70 tonnes, 20 tonnes and 80 tonnes in the case of co-operative channel (TAPCMS), public channel (Raita Samparka Kendras), private wholesalers, private retailers and private wholesalers cum retailers, respectively. As the quantity of procurement increases, the

frequency of procurement will be less in general, but this analogy will not hold good for cooperative and public channels where their size of operation will be very large. As government agencies were the most regular bulk purchaser of the fertilizers and there for they had to maintain timelines in supplying them. While in the case of private and cooperative channels, the lead time was higher because they procure the fertilizers in the small quantities as and when they require it.

The distribution management practices relating to the fertilizers and manures distribution by co-operative, public and private channels are presented in Table 2. Dharwad district has five taluks and for each taluk there would be one TAPCMS and hence these are five TAPCMS catering to the distribution of fertilizers under cooperative channel in the district. Dharwad district has ten RSKs, each one situated at hobli levels, which constitute the manures distribution network under public channel. The private channel had a combination of large number of wholesalers, retailers and wholesalers cum retailers. Thus there was adequate distribution network of fertilizers in the district. Both public and cooperative channels had their own godowns for stocking of fertilizers before distribution, while wholesalers and wholesaler cum retailers had either owned or rented godowns. But, retailers usually had only rented godowns in the district. Since, the size of procurement of retailers was very small, it would be uneconomical for them to have their own godowns. Moreover, fertilizer distribution is always seasonal, they had to keep godown idle during remaining period of the years. (Soumya, 2015)

On an average, there was one godown for each distribution outlet for cooperatives, public, wholesaler, retailer and wholesaler

Table 2. Distribution management of fertilizers and manures in Dharwad district

Sl. No.	Particulars	Co-operative channel (TAPCMS)	Public channels (RSK)	Private channel		
				Wholesalers	Retailer	Wholesaler cum retailer
1	Number of distribution outlets	Five (TAPCMS)	Ten (RSK)	12	230	180
2	Ownership of godowns	Owned	Owned	Owned and rented	Rented	Owned and rented
3	Average number of godowns per outlet	1	1	1	1	1
4	Average size of godowns (Sq. ft.)	2,250	500	1,200	600	1,000
5	Size of stock keeping unit	50 kg bag	5 kgs, 30 kg and 50 kg	50 kgs	5 kg and 50 kg	5 kg and 50 kg
6	Factors considered in sales forecasting	Depend on rainfall and area under cultivation of respective crop in the previous year, government policy regarding subsidy and price of fertilizers	Depend on rainfall and area under cultivation of respective crop in the previous season, a Government policy regarding subsidy, farmer preference and price of Manures	Depend on rainfall and area under cultivation of respective crop in the previous year, government policy regarding subsidy, farmer preference and price of fertilizers	Depend on rainfall and area under cultivation of respective crop in the previous year, government policy regarding subsidy, farmer preference and price of fertilizers	Depend on rainfall and area under cultivation of respective crop in the previous year, government policy regarding subsidy, farmer preference and price of fertilizers

TAPCMS: Taluka Agricultural Produce Co-operative Marketing Societies,

cum retailers channels, with an average size of 2,250 sq.ft, 500 sq.ft, 1,200 sq.ft, 600 sq.ft and 1,000 sq.ft, respectively. The size of godowns was large in the cases of cooperatives and wholesalers as they handled large quantities of fertilizers which necessitated for a larger storage space. TAPCMS and wholesalers kept 50 kg bags as stock keeping units, because both the distribution units handle large quantities of fertilizers only. To some extent RSKs also maintain 50 kg stock keeping units, but they had to maintain 5 kg and 30 kg units also to facilitate for distribution of odd quantity fertilizers to the farmers, because the RSKs had to distribute the fertilizers on prorata basis to the farmers depending on their land holdings. Retailers and wholesalers also maintained varied sized stock keeping units cater to the needs of varied requirements by the farmers.

The different distribution units operating in the district under different channels considered various factors for forecasting the sales and accordingly they put up their purchase plans. Amount of rainfall prior to sowing was an important determinant of the acreage allocated to different crops by the farmers and consequently a determinant of varieties of seeds that is preferred for crops, which would decide the fertilizers requirement during the season. The quantum of government subsidy determines the relative cost of various fertilizers and as such provides a clue regarding approximate quantity of fertilizers that would be bought by the farmers, based on the previous experience.

Table 3 reveals that in the cases of urea and DAP (Di-ammonium phosphate), marketing margins earned by the retailers in private channel were the highest followed by wholesalers in private channel and cooperative channel. Cooperatives performed the business of distribution of fertilizers

on almost no profit no loss basis and take a margin only for maintenance of their establishment. But, wholesalers and retailers perform the business to earn profit. Therefore, the margin was higher in private channels as compared to cooperative channels. Among the private and cooperative channels the profit margins for each tonne of fertilizer distributed was found to be higher among the retailers as compared to wholesalers and cooperatives. The marketing efficiency of retailers in private channels was found to be very high compared to cooperative channels and wholesaler in private channels. The marketing costs were almost on par with other channels, but marketing margins were less in cooperative channels reflecting lower marketing efficiency.

While, in case of MOP (Muriate of potash) the marketing efficiency was the highest with retailers in private channel, followed by wholesalers in private channels and cooperative channels. Though the wholesalers had higher marketing margins (₹ 1,920 per ton) compared to retailers (₹ 1,880 per ton), the marketing cost was more with wholesalers (₹ 590 per ton) than retailers (₹ 490 per ton) which resulted in higher marketing efficiency with the retailers. The profit margin of retailers was the highest with the retailers in private channel compared to wholesalers and cooperatives.

Marketing margin and marketing efficiency were more in private channels than in cooperative channels in distribution of fertilizers in the district. The fertilizer distribution in Dharwad district is dominated by private sector as indicated by their higher share over years (2004-05 to 2014-15). Hence, there is a need to revitalize the co-operative sector in terms of capacity handling. Also, the cooperative sector has to be revitalized in terms of its competitiveness, thus enabling them to venture into distribution of other complementary inputs also.

Table 3. Marketing margin and marketing efficiency for fertilizers in different channels in Dharwad district (₹/ton)

Sl. No.	Particulars	Urea			Di-ammonium phosphate			Muriate of potash		
		Co-operative channel	Private channel		Co-operative channel	Private channel		Co-operative channel	Private channel	
			Wholesalers	Retailers		Wholesalers	Retailers		Wholesalers	Retailers
A	Sale price	5,510	5,860	6,380	21,760	23,750	25,580	13,200	13,820	16,820
B	Procurement price	4,265	4,560	5,010	19,300	20,790	22,510	11,500	11,900	14,940
C	Marketing cost	570	590	490	570	590	490	570	590	490
D	Market margin (D=A-B)	1,245	1,300	1,370	2,460	2,960	3,070	1,700	1,920	1,880
E	Profit margin (E=D-C)	675	710	880	1,890	2,370	2,580	1,130	1,330	1,390
F	Marketing efficiency (%) (D/C*100)	218.42	220.33	279.59	431.50	501.69	626.53	298.23	325.40	383.67

Department of Agri Business Management  
College of Agriculture  
University of Agricultural Sciences, Dharwad - 580 005  
E-mail: sangeetapatil2005@gmail.com

SANGEETA PATIL  
BALACHANDRA K. NAIK

(Received: September, 2016 ; Accepted: December, 2016)

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