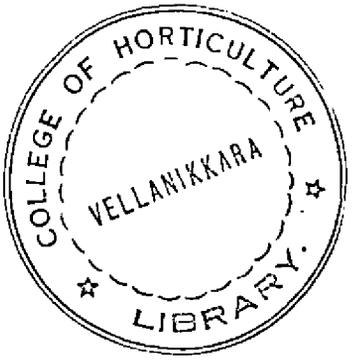
AN ENQUIRY INTO THE BUYER BEHAVIOUR TOWARDS SELECTED TYPES AND BRANDS OF FERTILISERS



By

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THESIS

Submitted in partial fulfilment of the
requirement for the degree

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(RURAL MARKETING MANAGEMENT)

Faculty of Agriculture
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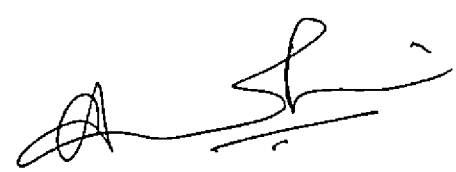
COLLEGE OF CO-OPERATION AND BANKING
Mannuthy, Thrissur

1990

DECLARATION

I hereby declare that this thesis entitled "An Enquiry Into the Buyer Behaviour Towards Selected types and brands of Fertilisers" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title of any other University or Society.



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CERTIFICATE

Certified that this thesis entitled "An Enquiry Into the Buyer Behaviour Towards Selected types and brands of Fertilisers" is a record of research work done independently by Shri. Anilkumar V.P. under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

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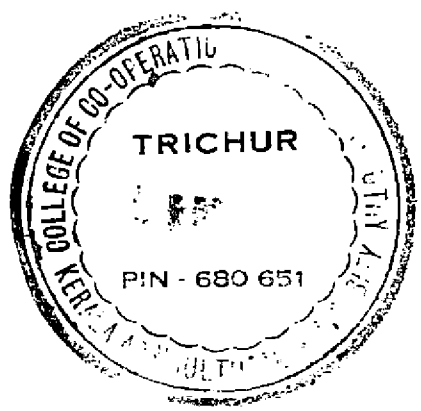

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Introduction

CHAPTER I

INTRODUCTION

1.1. Introduction

Management have started realising the importance of modern marketing concept in their operations. This is a concept crystalised during the 1950's and is an improvement over the selling concept. It is of great importance to understand that in selling, the focus is on needs of the seller and in marketing, the focus is on the needs of buyer. Marketing is preoccupied with the idea of satisfying the needs of the consumer by means of the product and the whole cluster of things associated with creating, delivering and finally consuming it. Thus any organisation aiming at perpetual existence and profitable future cannot ignore consumer behaviour and their attitudes in the market place. So the marketers would like to understand how consumers will react to a particular product and will take buying decisions. Thus the prerequisite of market creation is consumer analysis.

It is very pertinent to realise that the individual consumers vary greatly in their wants and desires. But it is insensible to offer different products to each

consumer (which suit their wants and desires) or to consider all the consumers alike. Hence the study of the behaviour of consumers become inevitable to provide an "average behaviour" of the consumers so as to shape appropriate marketing strategies.

Consumer behaviour analysis is a scientific approach for analysing the consumer, using concepts and techniques drawn from different disciplines. Such analytical results would contribute for designing appropriate marketing strategies and techniques. But the process of analysis has become difficult as the mechanism of flow of goods from producer to consumer is dynamic and complex in nature. The importance of such analysis can be gauged from the fact that the success or failure of a product in the market often depends on the ability of the marketer to correctly perceive and predict the dynamic nature of the consumers.

The Molony Committee Report (1962) on Consumer Protection defines a consumer as "one who purchases or repurchases goods for private use or consumption". Lovelock and Weinberg (1986) identify consumer as "individuals or households or organisations that are current or prospective purchasers or users of goods and services". In this

study, the term "Buyer" is used as the ultimate user of the fertiliser and that the terms buyer and consumer are used synonymously.

The analysis of consumer behaviour can be explained as a process of researching the relationship between marketing stimuli and consumer response. Nair (1988) defined it as "that behaviour exhibited by people in planning, purchasing and using economic goods and services". Consumer behaviour is a complex phenomenon in which the consumer consciously and/or unconsciously is involved in the marketing activities of an enterprise by accepting or rejecting any product offered to him. For the purpose of the study, the term buyer behaviour refers to the behavioural pattern of buyer of products before and after exposing them to a stimuli and the response thereupon.

It may also be noted that the consumer is to be understood according to the attitude he maintains towards the stimuli viz. the product and the supportive promotional measures. Thus, the most decisive factor in consumer behaviour analysis is the attitude development of the consumer. The other areas of concern, viz., brand

awarenesss, brand consciousness, brand loyalty and stimuli effectiveness are only the succeeding results of attitude development. Hence a discussion on attitude is sought for.

1.2. Attitude of buyers

Attitudes are basic to opinion, beliefs and similar aspects of behaviour. Kolasa (1970) says attitude is a predisposition to act or react, positively or negatively to a person, place or circumstance. Thus attitude has two key elements like predisposition and direction of that predisposition. The psychologists, Murphy and Gardner (1964) say attitude is the way in which the body is set or made ready for an oncoming situation. They further add that the psychology of attitude begins with the psychology of set, the readiness to move in one direction or another. Thus it may be inferred that attitude is a psychological phenomenon to act in a particular direction.

For the purpose of study, it is important to understand the concept of attitude from the marketing angle as well. Schiffman and Kanuk (1978) opined that attitudes

are learned tendencies to perceive and act in some consistently favourable or unfavourable manner with regard to a given object/idea like product, service, brand, company, dealer etc. where the term 'learned' is used in the sense that they are derived from past experiences which usually direct the future behaviour.

As the discussion on attitude has gone so far, it is pertinent to understand the origin of attitude in human beings. Attitudes develop as a result of an arousal of the need and they are shaped specifically through a process of learning. In the present case, it is quest for productivity which developed a favourable attitude towards fertilisers. Moreover, attitudes are susceptible to the changes taking place within and without the human psyche. Such a nature of attitude, call for more of a continuous and dynamic nature of analysis. It is generally accepted that attitudes are understood from the feeling tone or verbal expressions or from the individual's overt behaviour.

Robertson (1970) has examined the development of attitude from a marketer's angle. He says that attitude is developed towards each of the product's attributes like price, flavour, package, appearance, colour and performance.

Each of them should be analysed separately and then should be integrated into a macro concept. In other words, it may be noted that if the product attributes are integrated into a macro concept, the resultant concept can be called as the brand. Different brands give importance to different attributes of the product. Thus they possess certain unique selling features. The consumers also view each brand differently from others. The success or failure of a brand depends largely on the attitude the consumer has developed towards each of its attributes.

1.3. Brand and related issues

The concept of brand is defined and explained extensively by many authors. Newmann (1951) has defined a brand in very general terms. He viewed a brand as "a composite image of everything people associate with it". A particular brand of a product assume different roles to different people. Thus they can have functional, economic, social and psychological dimensions to different people. According to the Committee on Definitions of American Marketing Association a brand is "a name, term, symbol, design or a combination of them which is intended to identify the goods or services of one seller or group of

sellers and to differentiate them from those of competitions". Thus the term brand is having multiple number of dimensions and it possesses different attributes as well.

The important aspect of marketing is projecting the most crucial dimension of the brand, that could be easily perceived by the target consumers and act upon it. Thus the task of marketers is to carve a niche in the minds of consumers for their brand, which is possible through developing a favourable image for the brand. Analysis should be conducted so as to decide which are the major variables of the brand need to be highlighted. Such an approach will earn the brand a favourable image and thus in turn get a central place in consumers' psyche.

The job of marketers become easy when the buyers are favourably inclined towards the seller and his brand. Brand image is what buyers see and feel when brand name is called to their attention. In simple terms, brand image is the buyers' view of how a specific brand differs from other brands. This is happening due to the concerted efforts of marketers in projecting their brand as unique and distinct in several respects.

A positive image of a brand, thus, is not an overnight development taking place in one's mind, but it calls for careful and sustained efforts from the marketers' part. There is an overall agreement as to the fact that the ultimate objective of all marketers is building up of an undisputed loyalty of consumers for their brand. So, all of the marketing strategies are geared towards developing such undisputed loyalty. It is pertinent here to examine the concept of loyalty. Jacoby and Orson define brand loyalty as "a simple ratio between the latitudes of acceptance and rejection, ignoring the latitude of non commitment". In essence, the marketing people strive for creating a 'commitment' by consumers towards their brand.

It is also important to understand brand awareness and brand consciousness, which are the preceding stages of development in brand loyalty. The brand awareness explains whether and, if so, how much the consumer is involved in understanding the various brands of a product and their related attributes. This can help in determining whether the consumer is rational in his decision making. The concept of brand consciousness examine and explain the extent of knowledge of the

consumers with respect to the various attributes of all brands available in the market place. This will also help to understand whether the consumer is scientifically analysing all the available brands or he is making impulse buying decisions.

Normally, a rational consumer will move along these different stages before committing fully to anyone particular brand. It is to be understood that the marketers have to follow a logical order of action in developing brand loyalty. General consensus on such a nature of order is that brand non recognition is followed by brand recognition. These are followed by brand preference, brand insistance and brand loyalty. In order to make the consumers "brand preferrers", the task is to persuade them to buy, "out of habit", a particular brand. Similarly, the consumer is said to be brand insisting when he does not accept any substitute product. Consumers become brand loyal, when they make repeated purchases of the same brand. This is the ultimate aim of all marketers and it is with this objective that the marketers strive hard to project the brand image relating it to easily identifiable and acceptable attributes of products.

So far an attempt has been made to cover the theoretical and conceptional issues relating to consumer behaviour. The central issue of the present study is to understand the branding problems involved in fertiliser marketing and the farmer behaviour in purchase decision making process.

An analysis of the evolution and growth of fertiliser marketing in India reveals that fertiliser marketing has been the first large scale effort in rural marketing and rural communication in India. This involved an incessant process of education and a fundamental conversion of the attitudes and practices of the user. The important aspect of marketing of fertiliser is that in this case both consumer and product are unique. Farmers, who are the consumers, are generally illiterate, poverty striken and tradition bound. They suffer from a combination of economic, educational and social backwardness. Similarly, fertiliser is quite different from other consumer goods or producer goods. It is a mere input with which the farmer can increase his farm income. Besides, fertilisers, unlike other products, give only an indirect satisfaction, that too, only if it was used as a part of a total package of scientific farming practices.

Thus it may be understood that the important aspect in fertiliser marketing is communication of message to the farmer. Any communication, especially rural communication, can be made effective only by understanding the behaviour of the audience, viz. the farmers. It is equally an agreed fact that the core concern of marketing a particular product to a farmer consist of understanding his attitude towards that product. Earlier in this chapter, it was stated that attitude developed by the consumer influences his decision making in buying. These decisions relate largely to the choice of brand of the product. Thus the farmer's choice of a brand is only a resultant of the attitude he holds towards that particular brand. So it is desired to study the choice of the brand of fertiliser by the farmer. But it will not be enough if we study the brand choice alone. It is all the more important to know if the farmer, before choosing any brand, consider all the available brands in the market. Normally, it was felt that farmers are not rational in their decision. This can be understood by examining whether they are aware of other brands in the market. Higher the number of brands the farmers are aware, greater are they rational in purchase decision. But the

scenario will not be fully unleashed by studying about brand awareness only. It is to be seen whether the farmers analyse each available brand of fertiliser from various dimensions. This particular aspect is studied by probing the farmers regarding their knowledge of different attributes possessed by each brand. It is also presumed that a farmer will study each and every brand available in the market about their functional and non functional attributes. This may naturally make the brand choice more systematic and scientific.

It is also pertinent here to add that brand choice may be vitiated by the activities of dealers and/or by restrictions imposed by the agency involved in the selling process. For instance, a farmer depending on co-operative society for credit may have to accept the brand that is made available to him. This kind of linking with credit hampers the development of brand preferences among farmers.

It should also be remembered that creation of brand awareness is the ultimate result of activities undertaken by the marketer himself. He has to adopt all promotional

strategies in developing brand consciousness. Effective communication link should be established with the farmers through all possible channels. Unlike other consumer products, brand choice could be inculcated among farmers only through definite results. Thus, as far as fertilisers are concerned, a different strategy for creating brand loyalty may be needed.

1.4. Objectives of the study

The study has been undertaken with the following objectives.

1. To analyse the buyer's attitude towards selected types and brands of fertilisers.

2. To examine the type and brand consciousness, types and brand awareness and types and brand loyalty of the buyers.

3. To assess the effectiveness of promotional measures undertaken by the producers in creating type and brand preferences.

1.5. Scope of the study

Through an inter disciplinary approach, the study tries to understand the purchase decision making and purchasing process of buyers of fertilisers. The study will give details of buyers' attitude towards the different types and brands of fertiliser. Throughout the study analysis was undertaken in all three types of fertilisers viz., straight, mixed and complex. It will also reveal the degree of brand awareness, brand consciousness and brand loyalty based on which the producers can realise the positioning of their brands in the market. It also strives to bring out effectiveness of promotional measures in creating type and brand preferences.

1.6. Limitations of the study

The study is limited to Palghat District only. In the analysis, Likert technique was used only for selection of statements. Since the fertiliser industry only recently started adopting consumer orientation, the study is lacking clarity with respect to farmer behaviour.

Throughout the study a definite bias of farmers was found towards brand A in the survey area and this is expected to be there throughout the state due to its locational advantages.

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

In this chapter, an attempt has been made to cover the literature relating to the area of buyer behaviour. They include the literature relating to buyer behaviour towards the goods in general and towards fertilizer in particular. The design of the chapter is such that the studies and papers are classified under the following heads.

i. Buyer Behaviour (in general)

ii. Buyer attitudes

iii. Brand preferences

iv. Promotional effectiveness

2.1. Buyer behaviour

Gardner and Levy (1955) opined that social status differentiation has a role to play in evaluation of two brands because of the desire of people to emulate the people of higher class. In order to create, develop or modify a brand image, the marketer should appreciate the brand image as it already exists in the market. For this, media credibility, product positioning in the minds of

consumer, reasons for the selection of certain brands and ultimately, product quality should be analysed.

Levy (1959) said that marketers should go deeper into the psyche of consumer, without limiting themselves to the peripheral reasons they express in every purchase. A variety of logics are shown by people in explaining why they buy and what they buy with many. This logic consists of convenience, inadvertence, family pressures, social pressures, complex economic reasonings, advertising and pretty colours.

Philip Kotler (1965) opined that all the models so far developed by various scientists should be used in an integrated manner to understand the consumer in general. In his opinion, buying pattern are being influenced by price, quality, availability, service, style, options and images. Depending on the product involved, different variables and behavioural mechanisms assume different degree of importance in influencing the purchase decision process.

Tambad (1973) says that the farmer has to take decisions with respect to product, brand, quantity, quality, place, dealer, time, price and mode of payment.

He opined that a farmer will not buy fertilisers unless he feels "the need to step up his yield" and thereby improve the standard of living. The farmers' behaviour should be analysed throughout the different stages of buying process, viz. felt need, pre-purchase activity, purchase decision, use behaviour and post purchase feeling.

Ganapathy (1990) viewed that agro inputs, in general show, similarities to industrial products in terms of usage or need while they are more akin to consumer durables in terms of buyer behaviour, purchase process etc.

2.2. Buyer attitudes

Gaur and Tiwari (1982) studied the impact of factors like caste, age, education and size of the holding on the attitude formation towards the technological changes. The survey was conducted in twenty villages from Reva district of Uttar Pradesh. Five farmers from each village were randomly selected. Analysis revealed that farmers have shown favourable attitude towards specific aspects of technological change. The farmers on an average showed a favourable attitude towards chemical fertilisers.

The fertiliser marketing process was extensively dealt by Ramaswamy (1985). He opined that the rural markets which are scattered, diverse and heterogenous in nature, is characterised by cultural religious and linguistic diversities. The rural consumers are tradition bound and conservative. Farmers, who are consumers of fertilisers, express varied behavioural patterns as they are generally poverty striken, illiterate and economically and socially under-developed. Similarly the media for promotion available were limited in number, reach, coverage and cost effectiveness.

Ali (1988) analysed the problems of fertiliser marketers and the attitude of the consumer regarding the usage of fertilisers. The study made use of primary and secondary data which was conducted in Ahmednagar district of Maharashtra. The study revealed that farmers are only less aware of the fertilisers and during the peak demand period, the market showed shortage in supply.

Subbu (1989) has analysed the purchase behaviour of consumers and concluded that quality, price, colour, acceptability, nature of usage, relative competence, availability of varieties of products were the important variables involved in the purchase decision process.

Biswas (1990) while explaining about qualitative research in Agricultural Marketing stated that it used to provide detailed description of soil and environmental conditions, cropping behaviour, product usage, brand perceptions, selection processes and the factors or influences governing the purchase of products. He further explained the importance of problems/questions like how brand images can be created, the values held by the farmers, the similarity and distinction in the purchase behaviour of farmers, the media habits of the farmers and the credibility enjoyed by each medium.

2.3. Brand preferences

Alfred Politz (1956) stated that if product is well known to get consumer acceptance and is conveniently located the consumer will buy it in preference to a better known product. Besides, the least bit of inconvenience wipes out the impressiveness of even the best known brands.

Martineau (1958) concluded that the manufacturing organisations have a distinct personality in the consumer decision making. The channels of communication should be

judiciously made use of in moulding the functional and rational dimensions of the corporate image. The responsibility of the public relations is to propagate the "feeling tone and emotive meanings" of the corporate.

The study conducted by FACT (1968) analysed fertiliser consciousness, reasons for use and non-use of fertilisers and impact of promotion activities of the fertiliser agencies. The survey covered 1200 households in 60 villages spread over 55 taluks of all the 9 erst-while districts of Kerala. The analysis revealed that 21 per cent of the respondents have no preference for any particular brand or company. FACT, Shaw Wallace and Parry were the companies about which they know better. Proximity of suppliers better quality and availability were the important reasons for brand switching.

Heredia (1972) when commenting on the strategies for expanding markets for fertiliser listed out that important variables in brand choice. According to him experience in developed countries shows that amongst the factors which influence farmers to buy fertilisers of a particular brand, service ranked two-to-one over the next

most important factor price, then came quality, honesty, reliability, convenience, availability and personality in that order.

Singh and Singh (1981) has undertaken a study on the measurement of brand loyalty among Indian consumers. Brand loyalty was studied using proportion-of-purchase method. For the purpose of study 102 educated middle and upper income families were selected through convenience sampling. They concluded that quality of the product, habit of use and ready and regular availability were the variables influencing and strengthening the brand loyalty of the consumers. The interesting point is that relationship was established between brand loyalty and store loyalty.

Singh and Ahmed (1985) to study brand preference of farmers towards fertilisers has surveyed ninety farmers from ten randomly selected villages of the Meerut Division in Uttar Pradesh. The farmers were categorised into heavy users (large and medium farmers), average users (small farmers) and light users (marginal farmers). The variables analysed include price, availability, quality, packing and fertiliser effect on soil structure.

Shri Ram fertiliser was the mostly preferred brand, the reasons being easy availability, better quality, good packaging and good impact on soil. Many farmers opted for certain brands because of the non-availability of the other preferred brands.

2.4. Promotional effectiveness

Indrani (1983) explains at length about the advertisement attributes for creating a favourable selling climate. The advertising effectiveness is to be analysed taking into consideration certain variables like noticeability, interest value, comprehensibility, perceived information value, effective impact and believability. This also consists of memorability, sociability, ability to stimulate imagination and need creation ability.

Kaundinya (1990) opined that the narrow capital base of the farmer makes him buy the inputs almost on the day of their use in the field. He buys the input in smaller lots as well. This makes timely availability and close accessibility to the farmer as the important criteria for promotion.

Kumar and Desai (1990) worked on the marketing environment of fertilisers at micro level. The study covered 3179 respondents of 162 villages located in 54 districts of 14 major states, who were classified as marginal, small, medium and large farmers. The important sources of information about fertilisers were found to be fellow farmers, dealers, village level worker, Radio, TV and Agricultural University. Analysis of the place of purchase revealed that own villages, nearby villages, block head quarters were the most important places of purchase.

Gupta (1990) expressed that the product as well as its price should be within the farmers' reach and remunerative to them. The input pricing should be related to the prices of agricultural output.

2.5. Definition of terms and concepts

Attitude is a predisposition to act or react, favourably or unfavourably to a person, place or circumstance.

Brand is a composite image of everything people associate with it.

Consumer is one who purchases or repurchases goods for private use or consumption.

Complex fertiliser is a type of fertiliser which consists of two or more nutrients in chemical composition.

Mixed fertiliser is a type of fertiliser which is a mixture of two or more nutrients.

Straight fertiliser is a type of fertiliser which contain single nutrient only.

Profile of Industry

CHAPTER III

FERTILISER INDUSTRY AND MARKETING SYSTEM IN INDIA

3.1. Introduction

The organic manures, which were used in plenty, were not having sufficient impact in augmenting the agricultural production. But the ever increasing demand for food production has accentuated the need for higher productivity. This made it necessary to go for better methods of production utilising more efficient inputs in the cultivation operations. It is this felt need along with technological improvements which had paved the way for the use of chemical fertilisers in agricultural operations. It may also be noted that the new technological ingredients were found to be more effective only in the company of chemical fertilisers. Thus as a national policy, the Central Government, State Governments and Fertiliser manufacturers had sponsored many programmes to popularise the importance of chemical fertilisers.

The growth of demand for fertilisers was slow but steady. As of now, the industry has grown by leaps and

bounds. Such a growth has attracted many organisations and entrepreneurs into this area of manufacturing. Naturally, it resulted into a market situation which was characterised by multiplicity of brands.

It is to be remembered here that the manufacturers initially started their operations with straight fertilisers which contain only single nutrient. Later it was realised that the farmers were not using sufficient combinations of straight fertilisers in their operations. Thus on the request of agricultural researchers and extension people, the manufacturers introduced mixed fertilisers, which consist of two or more nutrients, in prescribed combinations. Mixed fertilisers also failed in overcoming the problems of application. As they were mixed using certain filling agents the cost was not favourable and also the nutrients were found not completely mixed. Thus it was thought to introduce complex fertilisers, which consisted of two or more nutrients chemically combined, into the market. It may be worthwhile to pinpoint the fact that the above mentioned types of fertilisers are still used, as they are suitable to different soil types, crops, climate, stage of cultivation etc.

3.2. Fertiliser industry - A profile

The first fertiliser plant was opened (1906) at Rampet in Tamilnadu followed by plants at Belagula (1941), Fertilisers and Chemicals Travancore Ltd. (1947) and Fertilisers Corporation of India (1951).

During the initial years, the fertiliser use was confined to plantation sector. But the severe and soaring effects of Bengal famine of 1940's, impelled the government to adopt such measures as to spread the use of fertilisers to other crops also, especially cereals. In those years, fertiliser marketing was not troublesome as there was, sufficient scope in the agricultural sector to absorb the fertiliser. These years can be referred to as "distribution era" rather than marketing, as making of sales was easy due to high demand. The industry's wheel took momentum particularly during 1960's with the introduction of Green Revolution. It has become so huge as the nitrogenous fertiliser production of the country indicate, which is ranked fourth and the leaders are China and USSR in that order.

3.3. Fertiliser consumption

The scenario of the consumption of fertilisers can be explained as slow but steady always. Looking at the figures it can be seen that the increase was around 167 fold, ie. from 66,000 tonnes in 1951-52 to 110 lakh tonnes in 1988-89 (Table 3.1).

Table 3.1. Consumption of Fertilisers in India

Year	Total consumption in '000 tonnes	Consumption/hectare in tonnes
1951-52	66	0.6
1955-56	131	0.9
1960-61	294	1.9
1965-66	785	5.1
1970-71	2256	13.6
1975-76	2894	16.9
1980-81	5516	31.5
1985-86	8737	48.2
1988-89(Est)	11000	61.0

Source: Fertiliser Association of India

There are certain factors responsible for the increase in consumption of fertilisers such as spread of intensive cultivation practices, increased use of high yielding varieties of seeds, effects of farmer education programmes, overall improvement in infrastructural support and implementation of special programmes to motivate small farmers to participate in increased agricultural production. Another dimension of the indicator ie., per hectare consumption can also be examined to understand the fertiliser consumption level in our country. During 1988-89, it was only 61 kg which is one of the lowest in the world. But even during 1986-87 Hollend was the world leader in fertiliser consumption with 770 kg per hectare and Japan consumed 427 kg per hectare and the figure for India for the same period was a paltry 57 kg per hectare. Other developing countries like Bengladesh (67 kg/ha), China (176 kg/ha) and Pakisthan (86 kg/ha) are way ahead of India. This indicates that fertiliser consumption vis-a-vis cultivated area is lagging behind and there exists still more potential in augmenting consumption.

Table 3.2. Consumption of fertilisers in Kerala

(figures in tonnes)

Year	Total consumption
1980-81	97,546
1981-82	94,761
1982-83	1,09,853
1983-84	1,29,477
1984-85	1,27,645
1985-86	1,41,330
1986-87	1,51,363
1987-88	1,82,490

Source: Government of Kerala (1988) Economic Review, State Planning Board, Trivandrum.

In spite of our great efforts in developing indigenous availability, it is not enough to meet the requirements. Thus the industry depends on imports to fill the gap between supply and demand.

Fertiliser consumption by Kerala present a good picture of cultivation activities of the state. Farmers of Kerala were well receptive to the concept of fertiliser. The commissioning of Fertilisers and Chemicals Travancore Ltd. (1947) and their intensive promotional efforts have greatly contributed to the increase in fertiliser consumption among the farmers in Kerala. So far 'FACT' has led the promotional compaign for fertilisers in union with agricultural department and Kerala Agricultural University. The table 3.2 speaks of the growth of fertiliser consumption.

But at the same time, the figures do not suggest one to rest on this laurels. The plantation sector in Kerala has tremendous potential in augmenting consumption. Recently the Government of Kerala has launched intensive agricultural development programmes which will definitely improve the demand for fertilisers.

3.4. Fertiliser production

It is already stated that the country is demanding more quantities of fertiliser year after year. Thus it is of great importance to augment production indigenously.

Table 3.3. Capacity, production and consumption of fertilisers in India

(figures in '000 tonnes)

	1986-87	1987-88	1988-89	1989-90 (Est)
Installed capacity	11,081	11,426	12,116	12,461
Production	7,583	8,086	8,559	8,887
Consumption	10,959	11,899	12,855	13,909
Imports	3,376	3,813	4,326	5,022

Source: Fertiliser Statistics (Various Issues), FAI.

Normally, a glut situation, ie. a situation in which availability is more than the demand, are seen only during the off season period when the agricultural activities are in low tone. But against such a normal trend, during the last few years, the excess availability is the case for all seasons. The major reason attributed for this trend is the over optimistic demand forecast based on which import was planned. This resulted in the building up of a sizeable stock with the fertiliser industry, with less scope for reduction in near future. The imported material was sold in place

of indigenously produced material, thus reversing the role of imported fertiliser which is supposed to be the residual source of supply.

The way to get out of this glut trap is to boost consumption by farmers who will be ready to use them only if they are ensured of better returns. Thus the task of manufacturers and concerned authorities is to improve the fertiliser use efficiency. It will build confidence in the minds of farmers which might result in the increase in the fertiliser consumption. The single step in augmenting the consumption is through better marketing of fertilisers. This involves reaching the farmers and communicate to him the concept in an effective way. It can be mentioned that the coming era is one of marketing rather than mere distribution or allocation.

The growth of fertiliser marketing has commercial, economic and sociological ramifications. Commercially, the fertiliser has become one of the largest businesses in the country. Economically, the process has triggered of a cycle of wealth generation and sociologically, made an effort in the transformation of rural society.

Thus fertiliser marketing may be referred to as a socio-economic phenomenon that could create a tremendous and unparallelled impact on the economy of the region and life of the rural folk.

Marketing of fertilisers differs in many respects from marketing of other products. Till the fifties, "marketing" in India meant "urban marketing". But the tools and techniques that were applied in the marketing of consumer products in the urban setting could not be applied, as they were, for marketing agro inputs to the farmers of rural India.

In our case, the market, the consumer and the product are unique compared to urban marketing. The market is scattered and is extremely diverse and heterogenous. The majority of consumers are illiterate, poverty striken and tradition bound. The product is only an input, the satisfaction for the consumer is only indirect. Besides, the product should only be used along with other inputs.

The aforesaid special characteristics have generated a set of special problems in the marketing of fertilisers. Physical distribution was the important

problem faced by the marketers. The problem was of designing a distribution system with a guaranteed minimum level of consumer service, keeping the costs of distribution at a reasonable level. This is aggravated by the non availability of transport and storage facilities in rural India.

Promotion and mass communication was yet another area that posed a number of problems in fertiliser marketing. The problem is that the media that was available was not effective and the media that would have proved effective was not available. Besides, many media are handicapped in rural area due to limitations as to its reach, cost, coverage and effectiveness. The marketers were also faced with the problem of selling not only a product but a whole new concept to the farmer. Thus the marketers had to perform two distinct tasks, the task of generic promotion of fertiliser use and the task of promoting the individual products and brands.

3.5. Evolution of the fertiliser marketing system

Marketing of fertilisers in India dates back to the beginning of the twentieth century. A scrutiny of

the history of fertiliser marketing will reveal that the process has evolved to its position through three distinct phases of development.

3.5.1. First phase

The first phase may be fixed as preindependence period. During this phase, the process took only slow momentum and could not boast of any significant strides in the marketing. But it is to be mentioned that steps were being taken to augment fertiliser consumption. The one example is that of Grow More Food Campaign (1943) through which the fertilisers were popularised among food crops as well. Previously they were limited to cash crops. Another important feature of this phase is the setting up of central Fertiliser Pool (1944), by the government, through which all the fertilisers, domestic as well as imported, were distributed all over the country at controlled prices in all provinces of the country (Heredia, 1980).

3.5.2. Second phase

This is a period starting from 1947 extending until the 1960's. In fact, it was after our independence and launching of the first five year plan, the fertiliser

consumption went up. During this period many programmes, viz., National Extension Scheme, Community Development Programme, Intensive Agricultural Development Programme etc. were introduced and they have facilitated in augmenting fertiliser consumption. But it is the advent of the Green Revolution that really triggered off a new era in fertiliser marketing in India.

The most characteristic feature of this phase was the active intervention of the government in the fertiliser business. The declaration of fertilisers as an essential commodity under the Essential Commodities Act, 1956 was a major landmark in this phase. The Fertiliser Control Order of 1957 regulated the quality, price and trading of fertilisers. It necessitated the licensing of fertiliser outlets, both wholesale and retail. Appointment of Sivaraman Committee to examine the long term and short term problems connected with distribution of chemical fertilisers is another feature of this phase. The Sivaraman Committee Report (1965) recommended to allow the manufacturing units in the country to distribute a part of their production of fertilisers through their own distribution system in order to keep alive a little degree of competition among distribution channels.

It was equally well realised that increasing the domestic capacity of fertiliser production without merely depending on imports is the surest way of increasing the availability of fertilisers to the farmers. Thus the new fertiliser policy opened up the industry to the private sector including foreign sector. This decision was soon followed by the grant of partial freedom of marketing to the manufacturers. But it shall be noted that there was a reversal of policy with respect to marketing at a later stage.

3.5.3. Third phase

This is the current phase wherein fertiliser is no more a new product. There exists a variety of fertiliser products manufactured by different firms. This phase is characterised by transitions - from generic promotion to brand promotion, from distribution to creative selling, from shortage to surplus, and from coexistence to price war. But at the same time, government regulations were also existing in the marketing system.

3.6. Fertiliser marketing structure

In India, three distinct marketing models are in operation. They are:

a) Imported non potassic fertilisers marketed by the central fertiliser pool which operates through Food Corporation of India and other selected "pool handling agencies".

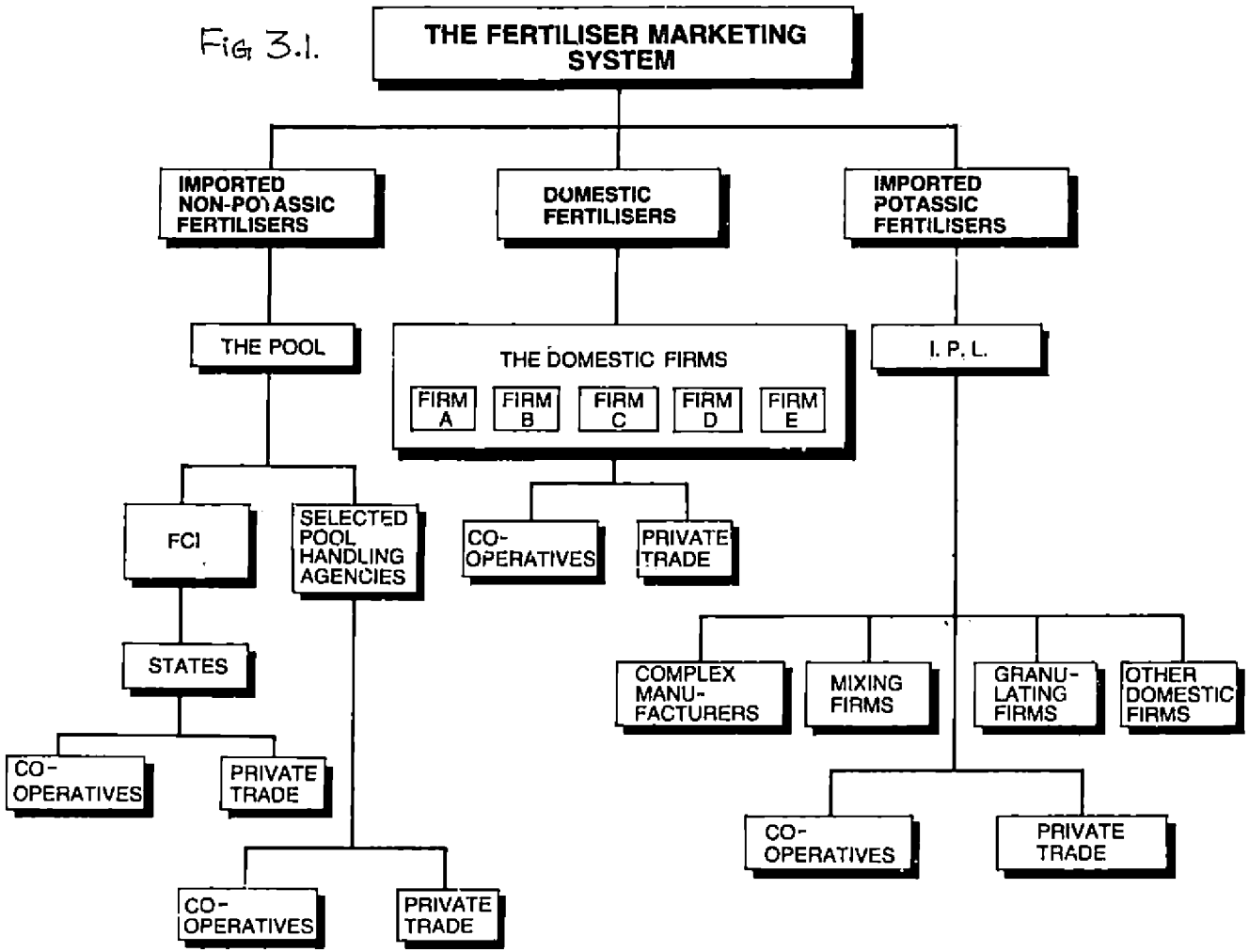
b) Potassic fertilisers marketed on an exclusive basis by the Indian Potash Ltd.

c) Domestic Fertilisers marketed independently by the respective manufacturers through their own channels. It seems that at the apex level, three distinct levels are existing for marketing. But at the market level, the channels are common to all fertilisers, viz., co-operatives and private trade who act as the common channel for the entire business. Fig. 3.1 gives the details of channels of marketing for the three components of the system.

3.7. The co-ordinated fertiliser supply system

A statewise and sourcewise fertiliser supply plans are prepared for each of the agricultural seasons,

Fig 3.1.


THE FERTILISER MARKETING SYSTEM
IMPORTED NON-POTASSIC FERTILISERS
DOMESTIC FERTILISERS
IMPORTED POTASSIC FERTILISERS
THE POOL
THE DOMESTIC FIRMS
FIRM A
FIRM B
FIRM C
FIRM D
FIRM E
I. P. L.
FCI
SELECTED POOL HANDLING AGENCIES
CO-OPERATIVES
PRIVATE TRADE
STATES
COMPLEX MANU-FACTURERS
MIXING FIRMS
GRANU-LATING FIRMS
OTHER DOMESTIC FIRMS
CO-OPERATIVES
PRIVATE TRADE
CO-OPERATIVES
PRIVATE TRADE
CO-OPERATIVES
PRIVATE TRADE

Kharif and Rabi, which are finalised in biannual zonal conferences convened by the government of India. These conferences are being held just prior to the commencement of the crop season. Representatives of the Central Government, the State Governments, the fertiliser firms, import handling agencies, railways, warehousing corporations, Fertiliser Association of India and other concerned agencies participate in these conferences. These conferences finalise the demand projections for the season and also assess the availability of fertilisers for the season from indegenous sources. Then the decisions on supply are made in the conferences.

3.8. Government policies on fertiliser marketing

It was accepted that the government policies have greatly influenced the course of fertiliser marketing in India. It appears that the government policies had greatly influenced in shaping fertiliser marketing system in our country.

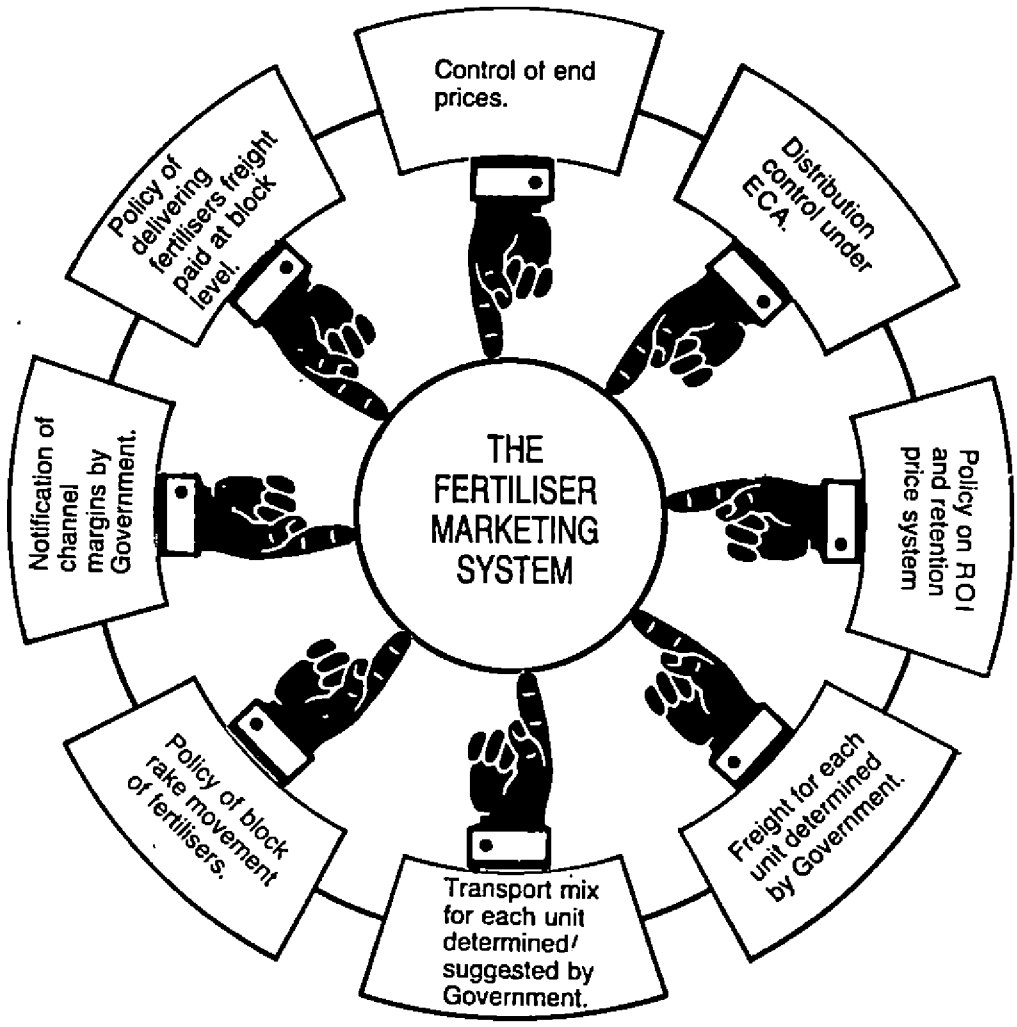
The most important policy is that fertilisers shall be marketed at a uniform price throughout the country and that maximum selling price shall be controlled by the government and statutorily notified.

As fertiliser is listed in Essential Commodities Act, it is stipulated that specified fertiliser products will have to be made available by the manufacturer to specified states during each crop season. This may limit the marketers freedom within certain regions/states.

The government normally fixes and reimburses the transport cost/equated freight spent by the producers in moving their product. The reimbursement is allowed only upto the fixed targets. This naturally prevents the free movement of the product to the far off regions from the place of production.

The above mentioned policies are not exhaustive. They include still more like specific margins for the distributor etc. Fig. 3.2 gives the details of government interventions in fertiliser marketing. The total effect of such policies naturally will make the fertiliser marketing under the strong grips of the government. But the case is not so.The marketing system is having a sufficient degree of competitions as the competitors are fighting for a

Fig 3.2 Impact of Government Policies on Fertiliser Marketing



share of the market. This is seen mostly in the case of domestic fertiliser units of our country. It should be noted that our marketing system has features both of a free enterprise as well as a state run and controlled enterprise.

Materials and Methods

CHAPTER IV

MATERIALS AND METHODS

This chapter consists of materials used and methods followed in this study. They are presented under the following heads.

1. Location of the study
2. Selection of the sample
3. Selection of variables and their measurement
4. Techniques used in data collection and analysis.

4.1. Location of the study

The primary survey for the study was conducted in Palghat District. Palghat district has an area of 4480 sq km with a population of 20.44 lakh (1981 census). The agricultural labourers and cultivators are the important classes of workers representing 44.95 and 14.42 per cent respectively in total main worker population. The main rationale for selecting Palghat District was the high order of fertiliser consumption. For instance, in 1988 of the total consumption of fertilisers in Kerala, 12.86 per cent was made by Palghat District alone.

A dealer level survey was conducted to locate the most important fertiliser consumption centres within Palghat district and also to locate those centres where fertilisers of different companies were available. Majority of the dealers opined that peripheries of Mannarghat, Vadakkenchery and Chittoor conform to the above requirements. Those centres were selected for the farmer level survey.

4.2. Selection of the sample

The sample for the survey consisted of 120 farmers. The basic data books of the Panchayat Krishi Bhavan of the survey areas provided the addresses of farmers in their respective area of operation. Thus out of the total farmers population, 120 farmers were randomly selected giving the representation to each strata namely, marginal, small and medium and large segments.

4.3. Selection of variables and their measurement

An investigation of the literature, available in the area of consumer behaviour in general and consumer behaviour pattern towards fertilisers in particular, has armed both the process of selection of variables for study and the methods for their measurement.

The first objective, in the order of the study, is the analysis of attitudes of farmers towards different types and brands of fertilisers ie. to study the pattern of responses of farmers towards fertilisers. The perception of the farmers towards them is measured with the method of summated ratings. Different approaches are available under this method such as Likert (1932), Likert, Roslow and Murphy (1934), Likert and Murphy (1937), Suchman and Katz (1944), Kenney (1946), Guttman and Suchman (1947), Eysenek and Crown (1949) and among those, the most popular and widely used is Likert. First of all universe of content was defined which include statements relating to different aspects of various brands and types of fertilisers. These statements have been constructed carefully so as to include the universe of content about the psychological object. Later, it was presented to a panel of judges, which included farmers, agricultural officers, agronomists, extention researchers, for relevance testing. Thus out of 52 statements, the panel endorsed 25 statements as a greater relevance for further analysis. Out of those selected statements, 10 statements were concerned with brands of fertilisers and 15 statements were concerned with different types of

fertilisers. The responses were elicited from farmers on each statement and were rated on a three point continnum vis. agree, undecided and disagree giving weights 1, 0 and -1 respectively.

For each subject we obtain a total score by summating his scores for the individual items because each response to a statement may be considered a rating and because these are summated over all statements (Bird, 1940).

As basis for accepting statements (thumb rule) t value* is computed (Computer run) and the statements are ranked in order, according to the magnitude of t values.

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* $$t = \frac{\bar{X}H - \bar{X}L}{\sqrt{\frac{SH^2}{nH} + \frac{SL^2}{nL}}}$$

wherein,

$\bar{X}L$ = the mean score on the same statement for the low group.

$\bar{X}H$ = the mean score on a given statement for the high group

SH^2 = the variance of the distribution of responses of the high group to the statement.

SL^2 = the variance of the distribution of responses of the low group to the statement.

nH = the number of subjects in the high group

nL = the number of subjects in the low group.

Jimenez, et al. (1988) was of the view that higher t values indicate favourable attitude towards the given statments. Green and Tull (1986) opined that statements which exhibit great differences in mean values can be selected. However, Edwards (1969) says the interpretation of scores falling between the maximum and minimum possible scores is difficult, if our interest is in describing an individual as having either a favourable or an unfavourable attitude towards the object under consideration.

The study also examined types and brand awareness, types and brand consciousness and types and brand loyalty. The awareness was examined through unaided recall method by which the farmers were persuaded to spell out the brands they knew under the three different heads viz. mixed, complex and straight fertilisers. Analysis was done in two ways. An awareness index was constructed in a similar way suggested by Kerlinger (1970) to study the level of awareness. Awareness was also analysed according to the number of brands known by each farmer. An attempt was also made to examine the awareness brandwise as well. Types and brand consciousness were analysed in two dimensions. In one method,

consciousness index was made in a similar way as was done in the case of awareness analysis. In the other method, analysis was done with respect to attributes, like manufacturer, ingredients, price, colour, odour, dosage, crop and stage of application, separately for each brand. The next task was analysing brand loyalty for which brandwise proportion of quantity of fertiliser (for each type of fertiliser) was collected for 3 years viz. for the reference year, for the past year and for the future year. Analysis was done by finding out the per cent of farmers who had never bought each brand. An attempt was also made to analyse the nature of change (viz. increasing, decreasing or constant) throughout the period under consideration.

The study also encompasses assessing the effectiveness of promotional measures in creating type and brand preferences. The examination was conducted through probing various aspects like reasons for use of chemical fertilisers, sources of information about fertilisers, promotional media influenced the farmers most, and reasons for dealer preference. While analysing data relating to source of information about fertilisers, care was given to include source which provided

information for the first time and source which provided brand wise information etc. Similarly, the most influenced media was also measured from two analyses viz. those media which the farmers had seen or heard and those whose message was well attracted by farmers. The aforesaid two aspects were analysed using simple percentages. The reason for dealer preference as studied in two ways viz. reasons for preferring co-operatives and reasons for prefering private traders. In the above case and in earlier stated aspects of promotional effectiveness, the analysis was undertaken employing the Kendall's coefficient of concordance (W) using the following equation.

$$W = \frac{\leq D}{\frac{1}{12} K^2(N^3-N) - K \leq T}$$

wherein,

D = R - $\bar{R}$(R is the sum total of the ranks and $\bar{R}$ is the mean rank

K = number of judges

N = number of characteristics

T = correcttion factor

Correction factor is calculated as follows:

$$T = \frac{(t^3 - t)}{12}$$

wherein,

t = the number of times each t is occurring in a row

4.4. Techniques used in data collection and analysis

For the data only primary source was utilised. The personal interview method was employed for the data collection. The draft schedule have been pretested in Chittoor taluk of Palghat District. On the basis of pilot study, suitable changes were made on the schedule.

The schedule for survey was prepared in English and they are given as appendix.

Results and Discussion

CHAPTER V

RESULTS AND DISCUSSION

The chapter is divided into three parts. The first part deals with the analysis of buyer's attitude towards selected types and brands of fertilisers. The second part deals with examination of type and brand awareness, type and brand consciousness and type and brand loyalty of farmers towards fertilisers. The final part deals with the promotional effectiveness of the manufacturers in creating type and brand preferences. The analysis was done on the basis of primary data collected at the farmer level.

5.1. Buyers' attitude towards selected types and brands of fertilisers

The analysis was done so as to understand the opinion of the buyers with respect to the brands and types of fertilisers. Attitude on brands and attitude on types of fertilisers was studied separately. Attitude on different types of fertiliser is divided into four ie, attitude on types of fertiliser in general, attitude on mixed fertiliser, attitude on complex fertiliser and attitude on straight fertiliser.

The set of statements presented to the farmers for their response worked as the basis of analysis, which is done employing the method of summating ratings (Likert). A set of ten statements were provided to measure attitude on brands, eight statements were given on attitude towards types of fertilisers in general, three statements on complex fertilisers and two each on straight and complex fertilisers.

5.1.1. Attitude on brands of fertilisers

The statements given in this part have covered related and relevant aspects only. Ten statements were given to farmers for opinion. The statements and corresponding ranks are given in table 5.1.

Table 5.1 gives the rankings based on the magnitude of 't' values. Statements with higher t values have greater discriminatory power, ie. the farmers are having concrete but varying opinion about the statement. To put in other words, the statements with higher t values are 'active' with respect to farmers. Hence the statements I, II, IV, IX and VII are relevant with respect to the marginal farmers. Similarly the statements relevant for small farmers are I, III, IV, V and VI. The relevant

Table 5.1. Ranking of the statements with respect to the brands of fertilisers

Statement No.	Statement	Marginal	Small	Medium & large
I.	Brand multiplicity encourages fertiliser consumption	1	1	1
II.	Higher the number of brands better will be the brand choice	3	3	2
III.	Qualitative improvement of the product is possible through different brands	9	2	3
IV.	The brand which I use maintain quality	2	10	10
V.	All brands are not readily available in the market	6	4	4
VI.	I think certain brands are sold easily	10	5	5
VII.	Brand multiplicity generates confusion in brand choice.	5	6	9
VIII.	The brand which I use is sufficient to cater the needs of the crops I grow	4	7	8
IX.	The productivity varies when different brands are used for same crop	7	9	7
X.	Some brands are suitable for certain stage of cultivation only	8	8	6

statements for medium and large farmers are I, II, III, V and VI. Hence considering the entire group which consists of marginal, small, medium and large farmers, the first two statements which have concrete opinion (favourable or unfavourable are I and II).

5.1.2. Attitude on types of fertilisers (in general)

Table 5.2 provides rankings of statements with respect to types of fertilisers in general. For the marginal farmers, relevant statements are I, II, III and VIII. When the relevant statements for small farmers are found to be I, II, III and IV, the relevant statements for medium and large farmers are the same as in the case of small farmers. Thus the entire group, consisting all the three segments, have endorsed the statements I, II, and III as having concrete opinion.

5.1.3. Attitude on mixed fertilisers

In the case of mixed fertilisers (Table 5.3), I, II and III statements are relevant for all the three segments and farmers also show concrete opinion on those statements. Hence, as a group, all the statements are relevant.

Table 5.2. The Rankings of the statements relating to the types of fertilisers (in general)

Statement No.	Statements	Marginal	Small	Medium & large
I.	The type of fertiliser used depends on the stage of crop	3	1	2
II.	I use a particular type, as it is more convenient	1	4	4
III.	The efficiency of the types vary according to water availability	2	2	1
IV.	I use a particular type since other types are not available.	7	3	3
V.	The improvement in productivity vary according to the type of fertiliser applied	8	6	8
VI.	The crop quality vary according to the type of fertiliser applied	6	7	7
VII.	The type of fertiliser I use is more economical than other types	5	5	5
VIII.	The speed in release of nutrients vary among the different types of fertiliser.	4	8	6

Table 5.3. Ranking of statements relating to mixed fertilisers

Statement No.	Statement	Marginal	Small	Medium & large
I.	I use mixed fertilisers as they ensure better returns per unit applied	1	1	3
II.	Mixed fertilisers make available all the right nutrients in required quantity	2	2	1
III.	I think mixed fertilisers are more water responsive	3	3	2

5.1.4. Attitude on straight fertilisers

Table 5.4. Ranking of statements relating to straight fertilisers

Statement No.	Statement	Marginal	Small	Medium & large
I.	Physical mixing of straight fertiliser is more economical than buying mixed fertiliser directly	2	1	2
II.	Straight fertiliser ensure speedy release of nutrients	1	2	1

Similar is the case with straight fertilisers (Table 5.4) wherein I and II statements are relevant for all the segments viz. marginal, small and medium and large farmers.

5.1.5. Attitude on complex fertilisers

Table 5.5. Ranking of statements relating to complex fertilisers

Statement no.	Statement	Marginal	Small	Medium & large
I.	By using complex fertilisers the multiple dosage of straight fertiliser can be overcome	2	2	2
II.	Complex fertilisers ensure greater economy	1	1	1

Table 5.5 gives rankings with respect to complex fertilisers which reveal that I and II statements are relevant for all the groups and have a concrete opinion (favourable or unfavourable) about both the statements.

5.2. Type and brand awareness, type and brand consciousness and types and brand loyalty

5.2.1. Type and brand awareness

Through the unaided recall method, the farmers were requested to list out the names of brands they knew which existed in the market. Survey revealed the fact that a maximum of five brands were known to the farmers. An awareness index was defined for our study assuming that the maximum number of characters came only to five. Thus awareness index was defined as follows:

$$AI_i = \frac{S_i}{\text{Max. } S_j} \times 100$$

wherein,

AI =Awareness Index

i = respondent

j = character

s = score

Kerlinger (1970) had also used a formula very much same to above to study the level of satisfaction. Prameela (1990) has used the technique of satisfaction index to study the attitude of doctors and nurses towards the hospital.

In our analysis, the awareness is classified into different levels giving equal weight to each level (ie. twenty per cent) as given below:

Awareness per cent <20 - least aware
" 20 - 40 just aware
" 40 - 60 aware
" 60 - 80 Very much aware
" >80 most aware

Table 5.6. Percentage distribution of farmers according to the awareness of Mixed Fertiliser

(in per cent)

Levels of awareness	Marginal	Small	Medium & large
Least aware	15.39	2.38	3.85
Just aware	3.85	19.05	11.54
Aware	46.15	33.33	19.23
Very much aware	26.92	42.86	42.30
Most aware	7.69	2.38	23.08
Total	100.00	100.00	100.00

Table 5.6 accounts the percentage distribution of farmers according to the awareness of mixed fertilisers. In all the segments, the distribution was maximum in the two levels viz. aware and very much aware. In the case of medium and large segment, the case was different whereby the distribution was also loaded in Most Aware Level, but only succeeded by very much aware, with 23.08 per cent. This is something better comparing to the percentage distribution of all other segments viz. 7.69 per cent and 2.38 per cent respectively in marginal and small segments. Similarly in the case of least aware level, marginal farmers have the maximum percentage distribution with 15.39 per cent and they are followed by 3.85 per cent and 2.38 per cent respectively by the medium and large and small farmer segments. Thus the indication is that among medium and large segment, the awareness is at higher levels. A visible trend is present if we move from marginal to medium and large segment.

The table 5.7 explains the awareness segmentwise towards complex fertilisers. Except in the case of medium and large segment, the percentage distribution is maximum in the Just Aware and Aware levels of awareness.

Table 5.7. Percentage distribution of farmers according to the awareness of complex fertiliser.

(In per cent)

Levels of Awareness	Marginal	Small	Medium & large
Least aware	-	3.08	-
Just aware	26.92	23.10	19.23
Aware	51.92	47.62	26.92
Very much aware	17.31	21.43	34.62
Most aware	3.85	4.77	19.23
Total	100.00	100.00	100.00

Table 5.8. Percentage distribution of farmers according to the awareness of straight fertiliser

(In per cent)

Levels of Awareness	Marginal	Small	Medium & large
Least aware	-	-	7.68
Just aware	21.15	19.05	11.54
Aware	50.00	38.10	34.62
Very much aware	19.23	35.71	34.62
Most aware	9.62	7.14	11.54
Total	100.00	100.00	100.00

In medium and large segment, the awareness is better with 34.62 per cent and 19.23 per cent respectively in very much aware and most aware levels of awareness. It may be noted that in the case of least aware level, the small segment has 3.08 per cent only.

Table 5.8 which elaborated the segmentwise awareness towards straight fertilisers showed that there were no marked difference among the three segments. Percentage distribution was found greater in aware and very much aware levels.

An attempt was made to analyse the brand awareness according to the number of brands known to each farmer. Earlier it was stated that the maximum number of brands known by farmer was only five. Thus classification was done in such a way that the highest class consisted of five brands known.

Table 5.9 shows that in the case of mixed fertilisers, in all the three segments awareness was found maximum about three and two number of brands. It is worth noting that 15.38 per cent of farmers in Marginal segment are not aware of even one brand whereas for the small segment and medium and large segment, it was only

Table 5.9. Percentage distribution of farmers according to brand awareness

Classification	Straight			Mixed			Complex		
	Marginal	Small	Medium & large	Marginal	Small	Medium & large	Marginal	Small	Medium & large
Aware of all brands	-	2.38	7.69	-	2.38	7.69	3.85	2.38	3.85
Aware of 4 brands	9.62	4.76	11.54	7.69	-	11.54	7.69	2.38	7.69
Aware of 3 brands	19.23	35.71	34.62	26.92	42.85	46.15	17.31	21.43	34.62
Aware of 2 brands	50.00	38.10	26.92	46.15	33.33	19.23	51.92	47.62	34.62
Aware of 1 brand	21.15	19.05	19.23	3.85	19.05	11.54	19.23	23.80	11.54
Aware of no brand	-	-	-	15.38	2.38	3.85	-	2.39	7.69

2.38 and 3.85 per cent respectively. It is also important to see that no one from marginal segment was aware of all brands whereas 7.69 and 2.38 per cent expressed awareness about all brands in Medium and Large segment and small segment respectively.

In the case of complex fertilisers as well, brand awareness is found maximum in the classification viz. aware of 3 brands and aware of 2 brands for all segments. Only 2.39 per cent of farmers were not aware of any brand among small segments. No one was found in the no brand aware level from among marginal and medium and large segments. The nature of awareness of all brands are such that all the three segments are abysmally poor, but medium and large segment performing a little better than the other two.

Awareness about 2 brands was found as the highest in the case of straight fertilisers with 50 per cent 38.10 per cent and 34.62 per cent respectively in marginal, small and medium and large segments. But awareness level about 3 brands were not bad also, and were very closer to the level of 2 brands especially in the case of medium and large segment. In the case of marginal segment, both extreme levels of awareness, viz.

awareness of all brands and awareness of no brand, were zero. It may also be noted that medium and large segment were leading in the category of no brand awareness level with a scoring of 7.69 per cent.

Table 5.10 shows the percentage of farmers who expressed awareness about each brand of fertiliser. In the category of mixed fertilisers A and B brand of fertilisers were ranked top as the most aware brand. The marginal farmers have shown only less awareness about C (28.85 per cent) and D (15.38 per cent) brands of fertilisers. But awareness about D was more in the case of small segment (30.95 per cent) and medium and large segment (50 per cent). It may be noted that 34 per cent of medium and large segment expressed awareness about C brand which is the highest comparing to marginal (28.85 per cent) and small (19.05 per cent) segments. It was only medium and large farmers who had expressed a satisfactory level of awareness about four brands.

Similar is the case with complex fertilisers wherein A fertilisers is the most aware brand among marginal (92.31 per cent) small (97.62 per cent) and medium and large segments (96 per cent). This is followed by B fertilisers with 90.38, 93.80 and 84.00 per cent

Table 5.10. Percentage distribution of farmers according to brand awareness

Brand name	Straight			Mixed			Complex		
	Marginal	Small	Medium & large	Marginal	Small	Medium & Large	Marginal	Small	Medium & large
A	92.31	100.00	92	82.69	97.62	96	92.31	97.62	96
B	84.62	73.80	73	82.69	76.19	84	90.38	73.80	84
C	17.31	16.67	34	28.85	19.05	34	17.31	11.90	34
D	17.31	30.95	30	15.38	30.95	50	13.46	26.19	38
E	5.77	7.14	4	-	7.14	7	13.46	2.38	7

respectively of 3 segments. Awareness level was highest in the case of C and D in medium and large segment (38 per cent and 34 per cent respectively) followed by small segment (26.19 per cent and 11.90 per cent respectively) and marginal segment (13.40 per cent and 17.31 per cent) respectively.

The results were similar in the case of straight fertiliser as well, wherein A and B brands ranked highest in awareness level followed by C and D. Among the three segments, medium and large had greater awareness about C and D brands and in the case of A and B, they are closer to and/or greater than the other segments.

5.2.2. Type and brand consciousness

In the brand consciousness, the farmers were asked to respond as to whether they know the details like manufacturer, ingredients, price, colour, odour, dosage, crop and stage of application of each brand they are aware about. Thus consciousness is analysed according to the knowledge of farmer about the listed attributes of brands. Brand consciousness is studied using a Consciousness Index similar to the procedure followed in awareness index, as given below:

$$CI_i = \frac{Si}{Max\ S_j} \times 100$$

where

CI = Consciousness Index

i = Respondent

j = Character

s = Score

Then consciousness is classified into five levels as given below.

Consciousness per cent	<20	Least conscious
	20-40	Just conscious
	40-60	Conscious
	60-80	Very much conscious
	>80	Most conscious

Table 5.11 explains the consciousness of the farmers towards mixed fertilisers. The marginal farmers were very much conscious (36.54 per cent) of A brand fertilisers and 23.08 per cent of them were least conscious about the same brand as well. In the small segment, 59.52 per cent and 19.05 per cent farmers were very much conscious and most conscious about A brand respectively. This is 38.46 per cent each in the case of medium and large segment. Only 9.61 per cent of marginal farmers are most conscious of A.

Table 5.11. Percentage distribution of farmers according to brand consciousness of mixed fertilisers

Level of consciousness	Marginal				Small				Medium & large			
	A	B	C	D	A	B	C	D	A	B	C	D
Least conscious	23.08	38.46	78.85	100	11.90	35.71	88.00	78.57	7.69	34.62	73.08	65.38
Just conscious	13.46	11.54	9.62	-	2.38	9.52	4.76	9.52	3.85	-	7.69	11.54
Conscious	17.31	21.15	1.92	-	7.14	16.66	-	7.14	11.54	11.54	11.54	11.54
Very much conscious	36.54	19.23	7.69	-	59.52	30.95	-	4.76	38.46	38.46	7.69	11.54
Most conscious	9.61	9.62	1.92	-	19.05	7.14	7.14	-	38.46	15.38	-	-

In the case of B brand, 38.46 per cent, 35.71 per cent, 34.62 per cent of farmers from marginal, small and medium and large segments are least conscious. But 38.46 per cent, 30.95 per cent and 19.23 per cent of farmers in medium and large, small and marginal segments are very much conscious about B. It was medium and large farmers who are most conscious (15.38 per cent) about B followed by marginal farmers (9.62 per cent) and small farmers (7.14 per cent).

In the case of C and D brands of fertilisers, lion's share (more than 60 per cent in all segments) of farmers are in least conscious level.

Table 5.12 clearly explains that in all the segments under consideration in the case of A, more farmers are in the very much conscious stage with 32.69 per cent, 64.28 per cent and 61.54 per cent respectively in marginal, small and medium and large segments. It is to be noted that 26.92 per cent of medium and large farmers are in most conscious stage followed by 23.08 per cent and 11.90 per cent in marginal and small segments. The important aspect which is to be considered is that nobody was least conscious among medium and large farmers, whereas it was 15.39 per cent and 4.76 per cent in marginal and small farmers respectively.

Table 5.12. Percentage distribution of farmers according to brand consciousness relating to complex fertilisers

Levels of consciousness	Marginal				Small				Medium & large			
	A	B	C	D	A	B	C	D	A	B	C	D
Least conscious	15.39	32.69	76.92	100	4.76	33.33	88.00	85.71	-	34.92	80.77	57.69
Just conscious	7.69	13.46	3.85	-	7.14	16.67	2.38	7.14	7.69	3.85	3.85	7.69
Conscious	21.15	9.62	5.77	-	11.90	4.76	-	4.76	3.85	15.38	7.69	11.54
Very much conscious	32.69	23.08	9.62	-	64.28	28.57	7.14	2.38	61.54	34.62	7.69	7.69
Most conscious	23.08	21.15	3.85	-	11.90	14.29	2.38	-	26.92	11.54	-	-

Maximum number of farmers are in least conscious stage for B brand in both cases of marginal and small farmers (32.69 per cent in marginal farmers and 33.33 per cent in small farmers), but in the case of medium and large farmers, the share was almost equal for least conscious stage and very much conscious stage (with 34.92 per cent in not conscious stage and 34.02 per cent in very much conscious stage).

But in the case of C and D brands of fertilisers, least conscious level was the only important stage with very less and almost negligible number of farmers representing other levels. This is so with all the segments. At times the entire farmers are least conscious as in the case of marginal farmers (100 per cent) with respect to D fertilisers.

Table 5.13 shows the details of consciousness about straight fertilisers in which it can be seen that all the segments are in very much conscious stage with respect to A brand fertiliser (the share of that stage being 46.15 per cent, 59.52 per cent and 50.00 per cent respectively for marginal, small and medium and large farmers. The next notable case is that of most conscious stage in which the share of marginal, small and medium and large

Table 5.13. Percentage distribution of farmers according to consciousness of straight fertilisers

Levels of consciousness	Marginal				Small				Medium and Large			
	A	B	C	D	A	B	C	D	A	B	C	D
Least conscious	13.46	34.15	86.54	98.08	2.38	35.71	88.00	76.19	11.54	34.62	76.92	65.38
Just conscious	5.76	17.31	1.92	1.92	14.28	11.90	4.76	4.76	7.69	11.54	15.38	15.38
Conscious	11.54	17.31	5.77	-	7.14	11.90	4.76	4.76	11.54	11.54	-	7.69
Very much conscious	46.15	17.31	5.77	-	59.52	30.95	2.38	7.14	50.00	38.46	7.69	11.54
Most conscious	23.08	13.46	-	-	16.62	9.52	-	7.14	19.23	3.85	-	-

farmers are 23.08 per cent, 16.62 per cent 19.23 per cent respectively. The case of B brand fertiliser is such that all the segments have almost equal importance in the least conscious stage. But in the case of small and medium and large segments, the share of least conscious stage and very much conscious stage is somewhat equal, with 35.71 per cent and 30.95 per cent for small farmers and 34.62 per cent and 38.46 per cent for medium and large farmers. But majority of the farmers are least conscious of the attributes of brands, viz. C and D brands. The shares are found high in least conscious stage, so that other stages have only negligible importance.

The brand consciousness was also examined from the dimension of each attribute. The share of farmers in each segment who are conscious of each listed attribute of all brands are found out. The table 5.14 explains the case of mixed fertilisers.

Analysing the A brand fertilisers, among medium and large farmers, 92.30 per cent are conscious of the manufacturer. This is closely followed by ingredients and price (88.46 per cent each), stage of application (80.76 per cent), crop suited (69.23 per cent) and colour and

Table 5.14. Percentage distribution of farmers according to brand consciousness of mixed fertilisers

Attributes	Marginal				Small				Medium and large			
	A	B	C	D	A	B	C	D	A	B	C	D
Manufacturer	67.30	57.69	17.31	-	90.47	64.29	11.90	16.66	92.30	65.38	26.92	34.62
Ingredients	67.30	55.77	19.23	-	85.71	61.20	11.90	16.66	88.46	65.38	26.92	30.77
Price	61.54	46.15	11.54	-	83.33	45.23	4.76	16.66	88.46	53.85	19.23	19.23
Colour	51.92	38.46	3.85	-	40.48	17.05	4.76	2.39	57.69	19.23	7.69	11.54
Odour	11.54	17.30	3.85	-	4.76	4.76	-	-	19.23	15.38	3.85	-
Dosage	30.76	26.92	-	-	54.76	35.71	2.38	2.38	57.69	46.15	-	15.38
Crop	36.54	21.15	11.54	-	78.57	42.86	7.14	14.28	69.23	50.00	11.54	11.54
Stage of application	55.77	34.62	7.69	-	78.57	50.00	7.14	11.90	80.76	53.85	15.38	15.38

dosage (57.69 per cent each). The trend is almost same with respect to small farmers except in the case of colour and crop suited. In the case of marginal farmers, the consciousness is at lesser level for all the attributes comparing to that of other segments. It should be noted that odour consciousness is remarkably low for all segments.

In all the segments, the consciousness level of B brand is lower comparing to that of A. The analysis of consciousness of B brand fertilisers reveals that attributes like manufacturer and ingredients are ranked first (65.38 per cent each) followed by price, stage of application and crop suited. The cases of C and D brands are poor with respect to the consciousness of attributes. But the case of odour deserve mention as it is ranked as the lowest in all brands and in all segments.

Table 5.15 points out that the consciousness of attributes of A brand, in the case of medium and large segment, shows that cent per cent of farmers are conscious about manufacturer and price. This is followed by ingredients (88.46 per cent) stage of application (76.92 per cent), dosage and crop (69.23 per cent each)

Table 5.15. Brand consciousness of complex fertilisers

(in percentage)

Attributes	Marginal				Small				Medium and large			
	A	B	C	D	A	B	C	D	A	B	C	D
Manufacturer	80.77	63.46	21.15	-	95.23	66.67	11.90	11.90	100	65.38	19.23	42.31
Ingredients	69.23	61.54	21.15	-	88.10	66.67	11.90	9.52	88.46	65.38	19.23	42.31
Price	73.07	50.00	21.15	-	80.95	54.76	7.14	4.76	100	53.85	15.38	30.76
Colour	59.62	44.23	7.69	-	40.48	33.33	7.14	4.76	61.54	23.08	3.85	19.23
Odour	28.85	21.54	1.92	-	11.91	7.14	2.38	-	26.92	23.08	-	-
Dosage	44.23	30.77	7.9	-	40.48	21.43	7.14	7.14	69.23	34.62	3.85	15.39
Crop	51.92	30.77	9.62	-	73.81	35.71	4.76	4.76	69.23	38.46	11.54	19.23
Stage of application	57.69	38.46	13.46	-	78.57	50.00	9.52	7.14	76.92	46.15	11.54	30.77

and colour of the product (61.54 per cent). The trend is also same in the case of small farmers except in the case of colour and dosage. The case of odour is better than mixed fertilisers, but still poor. In the case of marginal farmers, the important attributes are manufacturer (100 per cent), price (73.07 per cent), ingredients (69.23 per cent), colour (59 per cent), stage of application (57.69 per cent) and crop suited (51 per cent).

The analysis of B brand of fertilisers reveal that consciousness is little lesser than A in all segments. For the medium and large farmers, the attributes in the order of importance are manufacturer, ingredients, price and stage of application. The case is same with marginal as well as small segment. Similar is the case of mixed fertilisers, attributes of C and D brands does not deserve any special mention as their consciousness is relatively poor.

Table 5.16 which explains the consciousness of straight fertiliser shows that the important attributes of brand A as opined by medium and large farmers are (in order of importance) manufacturer, ingredients (88.46 per

Table 5.16. Brand consciousness of straight fertilisers

(in percentage)

Attributes	Marginal				Small				Medium and large			
	A	B	C	D	A	B	C	D	A	B	C	D
Manufacturer	86.54	63.46	13.46	1.92	95.23	64.29	11.90	21.42	88.46	65.38	23.10	34.62
Ingredients	82.69	61.54	13.46	1.92	95.23	64.29	11.90	21.42	88.46	65.38	19.23	30.77
Price	76.92	50.00	5.77	-	83.33	64.29	7.14	21.42	84.61	53.85	11.54	15.38
Colour	53.85	26.92	9.62	-	40.48	21.43	4.76	14.29	50.00	30.77	7.69	7.69
Odour	13.46	5.77	5.77	-	14.29	9.52	-	4.76	19.23	7.69	3.85	-
Dosage	26.92	25.00	-	-	47.62	26.19	2.38	9.52	34.62	19.23	3.85	3.85
Crop	61.54	38.46	5.77	-	66.66	38.10	2.38	14.29	53.85	30.77	7.69	15.38
Stage of application	73.08	36.54	7.69	-	83.33	40.48	2.38	14.29	69.21	38.46	7.69	19.23

cent respectively) price (84.61 per cent), stage of application (69.21 per cent), crop suited (53.85 per cent) and colour (50.00 per cent). Dosage and odour were less ranked. If we analyse the consciousness of small farmers, with respect to brand A, it is clear that the trend is same but the share of farmers who are conscious of manufacturer, ingredients, stage of application, crop suited are greater compared to medium and large farmers. The marginal farmers say that they ascribe importance to manufacturer (86.54 per cent), ingredients (82.69 per cent), price (76.92 per cent) and stage of application (73.08 per cent).

The analysis of consciousness of B brand of fertilisers reveal that most of medium and large farmers are conscious of manufacturer, ingredients and price. The other attributes are not so important for them. Similar is the case with small and marginal farmers. The consciousness about C and D brands are not noticeable in all the segments. It should be specifically mentioned that the case of consciousness of D brand among marginal farmers is abysmally low and negligible. Except in the case of brand A, the attributes like colour, odour,

dosage, crop suited and stage of application of all other brands have been of lesser importance among all the segments of farmers.

5.2.3. Type and brand loyalty

The other aspect of brand under consideration is brand loyalty which is a direct consequence of brand awareness and brand consciousness. The brand loyalty was studied using three year purchase details of farmers. First of all analysis was done as to the percentage of farmers who have never used particular brand over the study period.

As shown by table 5.17, brand A fertiliser, among mixed type of fertiliser, 63.46 per cent of marginal farmers have not used it but this is only 35.71 per cent and 46.15 per cent in small and medium and large segments. But among complex type of fertilisers, the per cent of non users are 46.15 both in marginal and medium and large farmers, but in the case of small farmers it is only 23.81 per cent. But the level of non users are still lower in the straight fertilisers, viz. 23.08, 30.95 and 23.07 per cent respectively in marginal, small and medium and large segments. The level of non users of brand B was

Table 5.17. Percentage distribution of farmers who have never used different brands

(in percentage)

Brand name	Mixed			Complex			Straight		
	Marginal	Small	Medium & large	Marginal	Small	Medium& large	Marginal	Small	Medium& large
A	63.46	35.71	46.15	46.15	23.81	23.08	23.08	30.95	23.07
B	78.85	75.57	80.76	30.77	57.14	46.15	53.85	64.29	57.69
C	92.31	97.62	88.46	96.15	95.24	100	98.08	100	100
D	92.31	95.24	96.15	98.08	97.62	88.46	100	88.10	92.31

found lower than that of brand A only in complex type among marginal farmers, ie. only 30.77 per cent. In all the other types and segments, the level of non users are higher. For the C and D brands fertilisers, the per cent of non users are remarkably greater. It should also be noted that in all the segments, preference for mixed fertilisers are of low level, comparing to the other types of fertilisers.

Analysis was also done with respect to the nature of change (viz. increasing, decreasing and constant) over the period of consideration. The two brands, viz. C and D brands are left out considering their negligible importance making them unnoticeable. The table 5.18 gives the details.

The figures in table 5.18 clearly exemplify that the farmers are in a stage of inertia in purchase of different brands of their choice. Cutting across all the segments of farmers and all types of fertilisers, farmers show constant nature of proportion of purchase. It is only B and A brands respectively of mixed type and complex type fertilisers deserve any comment due to a slight decreasing nature, that too only in medium and

Table 5.18. Nature of change in the purchasing behaviour of farmers

Nature of change	Marginal						Small					
	Mixed		Complex		Straight		Mixed		Complex		Straight	
	A	B	A	B	A	B	A	B	A	B	A	B
Increasing	1 (5.26)	2 (18.18)	2 (7.14)	3 (8.33)	2 (5.13)	6 (25.00)	-	-	1 (5.26)	-	-	-
Decreasing	2 (10.53)	1 (9.10)	3 (10.71)	2 (5.56)	6 (15.38)	2 (8.33)	1 (3.85)	1 (11.11)	2 (10.53)	2 (11.11)	2 (6.90)	-
Constant	16 (84.21)	8 (72.72)	23 (82.14)	31 (86.11)	31 (79.49)	16 (66.67)	25 (96.15)	8 (88.89)	16 (84.21)	16 (88.89)	27 (93.10)	15 (100)

Nature of change	Medium and large					
	Mixed		Complex		Straight	
	A	B	A	B	A	B
Increasing	2 (14.28)	-	1 (5.00)	2 (14.28)	- -	3 (27.00)
Decreasing	1 (7.14)	1 (20.00)	4 (20.00)	-	3 (15.00)	-
Constant	11 (78.57)	4 (80.00)	15 (75.00)	12 (85.71)	17 (85.00)	8 (83.00)

Note: 1. Figures show number of users in each category

2. Figures in parenthesis show percentage to total users.

large farmer segment. In the case of increasing nature, it is the B brand fertiliser (in mixed type category and straight type category respectively for marginal and medium and large segments) which deserve special mentioning.

5.3. The Promotional Effectiveness of Producers in Creating type and brand preferences

Ever since the advent of The Green Revolution, the organic manures have given way for chemical fertilisers as a means of greater production. Among the farmers, there is a growing awareness about fertilisers.

5.3.1. Switching over to chemical fertilisers

The study has tried to find out reasons for switching over to chemical fertilisers since it is the stepping stone in the evolution of brand preferences. The reasons were sought in two categories, viz. complete switch over and partial switch over. It may be specially noted that no farmer, from any of the segments, has completely switched over to chemical fertilisers. The table 5.19 shows the details.

Table 5.19. Relative Importance of reasons behind switching over to chemical fertilisers

	Marginal	Small	Medium & large
Scientific cultivation	201(3)* (3)	134(2)* (3)	84(1)* (3)
Increased yield	80(2)* (1)	78(3)* (1)	62(1)* (1)
Good for soil	221(3)* (5)	146(2)* (4)	85(1)* (4)
Organic mmanures not available	122(3)* (2)	99(2)* (2)	64(1)* (2)
Less expensive	204(3)* (4)	188(2)* (5)	113(1)* (5)
Better speed of action	224(3)* (6)	209(2)* (6)	127(1)* (6)

Note: 1. The figures in the table show the sum of ranks attributed by respondents against each variable (ΣRj)

2. Figures in brackets with star indicate ranks of variable between the segments

3. Figures in brackets indicate ranks of variables within each segment.

The Kendall coefficient of concordance (W) was found out to measure the agreement among the respondents in ranking the variables.* At the same time the relative importance of the variables was arrived at by analysing the order of the sums of ranks. Kendall (1848 a.p.87) suggests that the best estimate of the true ranking of the N objects is provided, when W is significant, by the order of the various sums of ranks, Rj.

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*The W is found for each segment. For marginal farmers

K = 52

N = 6

T = 22

S = 17864.14

$$\frac{17864.14}{\frac{1}{12}\ 52^2(6^3-6)} = 0.3868$$

For small farmers,
S = 12629.34
K = 42

N = 6

T = 20

$$\frac{12629.34}{\frac{1}{12}\ 42^2\ (6^3-6)-42x20} = 0.4205$$

For medium & large farmers

S = 3414.88

K = 26

N = 6

T = 23

$$\frac{3414.88}{\frac{1}{12}\ 20^2\ (6^3-6)\ -\ 26x23} = 0.3040$$

Thus we get W which need to be tested to verify the fact that agreement among the respondents are not by chance.

The coefficient of concordance (W) can be tested using the following formula.

$$\chi^2 = K\ (N-1)\ W \text{ with df } (N-1)$$

Therefore, for marginal farmers,

$$\chi^2 = 52\ (6-1)\ 0.3868 = 100.56$$

If we refer to table value of χ^2, we can find that the calculated χ^2 value is greater than table value of one per cent level.

In the case of small farmers $\chi^2 = 42(6-1)\ 0.4205 = 88$ The χ^2 table reveal that the calculated value is greater than the table value accepting the fact that the k judgement are related to each other. The case was similar in the case of medium and large farmers wherein χ^2 value is 26(6-1) 0.3040=39 which is greater than table value which indicate the acceptance of alternative hypothesis.

Thus in all the above segments, there is agreement among the judgement. Now we have to go for the order of the sums of ranks, ie. Rj, the least value being placed as the major factor of importance and followed, in order by others.

For marginal farmers,

Increases yield > org. manures not available > scientific cultivation > less expensive > good for soil > better speed.

For small farmers,

Increase yield > org. manures not available > Scientific cultivation > Good for soil > less expensive > better speed.

For medium and large farmers

Increase yield > Org. manures not available > Scientific cultivation > Good for soil > less expensive > better speed of action.

Having analysed the reasons for switching over to chemical fertilisers, it was thought necessary to enquire about the important source(s) of information through which farmers came to know about fertilisers for the first time.

Table 5.20. First source of information about fertilisers.

(in percentages)

Source	Marginal	Small	Med. & large
Neighbours and farmers	96.15	64.29	80.77
Block Deve. Office	59.62	54.76	50.00
Krishi Bhavans	44.23	21.43	23.08
Co-operatives	23.08	33.33	15.38
Companies	42.31	52.38	53.95
Radio	96.15	100	80.77
TV	1.92	19.05	15.38
Printed Media	80.77	88.10	73.08

Note: 1. Figures are percentages to total

2. Single respondent often has chosen more than one media.

Majority of farmers in marginal segment opined that neighbours and farmers (96 per cent), radio (96 per cent) Printed media (80 per cent) and Block Development Office (59.62 per cent) are the important first source of information about the concept of fertilisers in general. In the case of small segment, the case is almost same as above

but the source like companies also finds prominence among others. The medium and large farmers have also expressed the same view point. The case of co-operatives deserve special mention as their share is to 15.38 per cent from the 33 per cent for small farmers and 23 per cent for marginal farmers. Similar is the case with Krishi Bhavan also wherein the dependence of marginal farmers on them as a source information is greater (44.23 per cent) but lesser in other cases, viz. 21.43 per cent for small farmers and 23.08 per cent for medium and large farmers. The influence of Television is just the reverse.

5.3.2. Developing brand concept in Fertiliser marketing - Role of different media.

The development of brand preferences is direct consequence of the efforts of promotional media. Thus it was decided to examine the different promotional media as to its influence on the purchase decision making of farmers. This was done in 2 steps, viz. analysis was done as to the percentage of farmers who have seen/heard of fertiliser brands vis-a-vis different promotional media and secondly per cent of farmers was found out who have been attracted by the message of the concerned media.

Table 5.21. Media through which the farmers have seen/heard of fertiliser brands

	Marginal	Small	Med. & large
News paper	86.54	97.62	76.92
Demonstration	19.23	47.62	26.92
Radio	96.15	95.23	100
Film slide/shaw	86.54	66.67	84.62
Fertiliser Festivals	9.62	14.28	19.23
Seminars/camps	78.85	35.71	42.31
Exhibitions	15.38	11.90	15.38
Pamphlets	7.69	14.28	19.23
Hoardings	65.38	69.05	84.62
Free samples	11.54	4.76	19.23
Co-operatives	48.08	45.24	30.77
Others	26.92	7.14	

Note: 1. Respondents have chosen more than single media

2. Figures show percentage to total

Majority of farmers among marginal segment reveal that newspaper advertisements, radio, film slide/shows, seminars/camps, hoardings and co-operatives are the important media of promotion which they have seen/heard. Among them, those which deserve special mention are radio, film slides/shows and newspaper advertisements. But among the small farmers, 97 per cent said news paper advertisements was the most important followed by radio (95 per cent) hoardings (69 per cent) film slides/show (66 per cent) and others. Film slides/shows (84 per cent) hoarding (84 per cent) and News paper advertisements are the important promotional media seen/heard by medium and large farmers. The case of Radio is very interesting as it is being closely watched/heard by cent per cent of the medium and large farmers.

So far we have seen the percentage of farmers who have seen/heard about fertiliser brands through different promotional media. The influence of the media can also be analysed if we examine the per cent of farmers who are getting attracted by the message from different media. An attempt was made to examine the promotional effectiveness in the table 5.22.

Table 5.22. Percentage distribution of farmers got attracted by message of media.

	Marginal	Small	Medium & large
Nows paper advertisement	69.23 (80.00)	61.90 (63.41)	73.08 (95.00)
Demonstration	1.92 (10.00)	26.13 (55.00)	7.69 (28.57)
Radio	86.53 (90.00)	69.05 (72.50)	76.92 (76.92)
Film slides/show	38.46 (44.00)	26.19 (39.29)	30.77 (36.36)
Fertiliser festivals	5.77 (60.00)	7.14 (50.00)	7.69 (40.00)
Seminars/Camps	13.46 (17.07)	16.67 (46.67)	11.54 (27.27)
Exhibitions	1.92 (12.50)	4.76 (20.00)	-
Pamphlets	1.92 (25.00)	7.14 (16.67)	11.54 (60.00)
Hoardings	38.46 (58.82)	45.24 (65.52)	73.08 (86.36)
Free samples	3.85 (33.33)	-	3.85 (20.00)
Co-operatives	15.38 (32.00)	30.95 (68.42)	11.54 37.50)
Others	3.85 (14.29)	2.38 (33.33)	-

Note: 1. Figures show percentage to total farmers of the segment
2. Figures in parentheses show the percentage of farmers who are attracted by message out of the number of farmers who have seen/heard about each promotional media.

In the marginal segment, it is the Newspaper advertisements (69.23 per cent) and radio (86 per cent) which have influenced the farmers to receive message. The effectiveness of these media is more clearly explained by the figures in parenthesis, ie. 80 per cent and 90 per cent respectively. The other important media in getting through the message are film slides/shows and hoardings with percentages of 38.46 each.

As far as the small farmers are concerned, newspaper advertisements and radio are relegated to the top as the most influencing media followed by hoardings. The other media except co-operatives are not worth mentioning due to their lesser influence in delivering the message. The co-operatives are of greater influence in this segment comparing with that of other segments.

But the farmers in the medium and large group ranks radio as the most influencing media with 76.92 per cent. Equal ranks is given to news paper advertisement and hoardings with 73.08 per cent each. Another media which have some respectable ranking is film slides/shows. Still, the figures in parenthesis indicate a different order, the

top place being occupied by newspaper advertisement (90 per cent) followed by hoardings (86.36 per cent) radio (76.92 per cent) and pamphlets (60 per cent).

An overall analysis reveal that cutting across all the segments the media ranked as capable of delivering message were almost same, viz. newspaper advertisements, radio, film slides/shows and hoardings.

5.3.3. Selection of source of purchase

The study has also analysed the reasons for selection of source of purchase. The importance of this being that it call for greater care in the logistics of the products manufactured.

Through an apriori information, it was seen that co-operatives and private traders are the most important source of distribution, handling majority quantity of fertilisers. During the survey, it was also understood that farmers were depending on private traders and co-operatives for their purchases. Thus the study also examined the reasons for the preference of co-operatives and private traders separately. For each of them, a list of attributes

was provided and farmers were asked to rank the attributes according to the importance they attribute.

Table 5.23.Relative importance of attributes in the selection of co-operatives

Attributes	Marginal	Small	Med.& large
Credit facility	27(2)* (2)	38(3)* (1)	4(1)* (1)
Accessibility	31(2)* (3)	45(3)* (2)	11(1)* (4)
Timely availability	29(2)* (1)	61(3)* (5)	10(1)* (3)
Subsidies	50(2)* (4)	53(3)* (3)	13(1)* (5)
Good relation	52(2)* (5)	57(3)* (4)	7(1)* (2)
Others	60(2)* (6)	99(3)* (6)	18(1)* (6)

Note: 1. Figures in table show sum of ranks attributed by respondents against each variable (ΣRj).

2. Figures in brackets with star indicate ranks of of variable between the segments.

3. Figures in brackets indicate ranks of variables within segment.

Coefficient of concordance is found for all segments separately.

The following give the χ^2 values and the coefficient values for each segment.

Segments	Calculated χ^2 values	Table χ^2 values at 1%
Marginal	4.81	20.52
Small	39.00	20.52
Medium & large	1.72	20.52

The analysis of above information indicate that the calculated values are significant. Therefore, it may be inferred that there exists a relationship among the K rankings by the respondents of all the segments.

Similar analysis was done with respect to the reasons in the choice of private traders as a source of purchase. The table 5.24 has the details.

The coefficient of concordance (W) was calculated for further explanation.

Table 5.24. Relative importance of attributes in the selection of private traders

Attributes	Marginal	Small	Medium & large
Store loyalty	166(3)* (4)	92(1)* (4)	97(2)* (5)
Availability	83(3)* (1)	43(1)* (1)	56(2)* (1)
Accessibility	110(3)* (2)	76(2)* (2)	(68(1)* (3)
Good relation	130(3)* (3)	83(2)* (3)	64(1)* (2)
Credit facilities	188(3)* (5)	116(2)* (5)	94(1)* (4)

Note: 1. Figures in table show the sum of ranks attributed by respondents against each variable.

2. Figures in brackets with star indicate ranks of variable between the segments.

3. Figures in brackets indicate the ranks of variables within the segment.

The coefficient of concordance was tested comparing the χ^2 values with table values. The following provide the details.

Segment	Calculated χ^2 values	Table χ^2 values at 1%
Marginal	59	18.46
Small	30	18.46
Medium & large	25	18.46

The analysis of above information reveal that in all the segments of farmers, the table values are found lower than the calculated values of χ^2. The inference is that there is a relationship in the K rankings by the judges.

Summary

CHAPTER VI

SUMMARY

The scenario of marketing have already undergone a great change by giving focus more on the consumer needs and wants. Thus the consumer has become the kingpin in any marketing programme. The marketers have even started fixing their ultimate objective as achieving "consumer satisfaction at a profit".

Because of this ever increasing importance of consumer in the activities of marketer, it has become inevitable for him to understand the consumer better. Thus the research on consumer has earned a reputable place in the realm of marketing research. This is because of the fact that the success/failure of any product in the market depends largely on the ability of the marketer to correctly perceive and predict the dynamic behaviour of the consumers.

The case is all the more true of the fertiliser marketers as well. Newer and newer enterprises, producing fertilisers, are coming up sensing the increasing demand

for the product from the Indian farms. Naturally, it resulted in the birth of multiplicity of brands in the market. The marketers have to compete among themselves, for a share of the total fertiliser demand. It may be seen that the easy but effective means for such an objective is to understand the farmer inwardly as well as outwardly. The thrust should be on the farmer as he is the final user of the product. The present study gains importance under such a background.

The study was pursued with definite objectives in mind. First of all, it was tried to analyse the attitude of buyers towards selected types and brands of fertilisers. It made an attempt to examine the type and brand awareness, type and brand consciousness and type and brand loyalty of the buyers. Finally, the study has also analysed the effectiveness of promotional measures in creating type and brand preferences.

The entire study was based on primary data collected through personal interview with the farmers. A dealer survey proved that it was in areas like Mannarghat, Wadak-kenchery and Chittoor, the farmers were using different brands of fertilisers. Thus farmers from such areas were selected randomly.

The sample frame of the survey consisted of 120 farmers. Selection was done on such a basis that sample frame consisted of farmers representing three segments, viz. marginal, small and medium and large farmers. The data for the study was collected using a pretested schedule.

The attitude of farmers was analysed using Likert Scaling method. The 't' values were found out to measure the extent to which a given statement differentiated among the segments.

The awareness of types and brands were studied through unaided recall method. It was processed by preparing an awareness index which was done in a similar way as suggested by Kerlinger (1970). An attempt was done to analyse the brand awareness according to the number of brands known and brandwise as well.

The brand consciousness was also examined using a consciousness index which was done as in the case of awareness analysis. Another method was also tried in which analysis was done attribute-wise on which consciousness details were collected from farmers.

The loyalty analysis was done by finding out the per cent of farmers who have never bought each brands. It was also analysed through studying the nature of change, in the purchase of each brand of fertilisers, throughout the period under consideration.

The promotional effectiveness was analysed employing simple percentages and Kendall's coefficient of concordance.

The attitude of farmers was studied separately on types as well as brands of fertilisers. Regarding the attitude of farmers towards brands of fertilisers it may be inferred that opinions of farmers of all segments were mostly converged for all statements. If at all there was any variations, it is not of large scale and deserve only less mentioning. It may also be noted that all the segments are of the strong view that brand multiplicity can encourage fertiliser consumption. The 't' values of all statements for all segments are found to be significant with the single exception which is mentioned below. In the case of small and medium and large segment, the 't' value for the statement, viz. the brand which they use maintain quality,is insignificant. This indicate that farmers of

those two segments were only less sure about the quality of the brand of fertiliser they use.

Regarding the attitude of farmers towards the types of fertiliser (in general), it can be seen that the level of convergence of opinion among the segments was less comparing to that of brand fertilisers. Marginal farmers were of the view that convenience is an important factor in deciding as to the type of fertiliser. It need special mentioning that all the 't' values were significant in this area. The opinions of all the segments were found converged when theyfeel that the type of fertiliser they use is more economical than other types. Similarly, farmers of all segments were of the feeling that crop quality varies according to the type of fertiliser used.

Opinions of marginal and small farmers were fully converged against all statements relating to mixed fertilisers. The medium and large farmers have intensive feeling only about the fact that mixed fertilisers make available all right nutrients in required quantity. They have insignificant 't' values against the other two statements.

Marginal and small farmers were of the view that straight fertilisers ensure speedy release of nutrients and they feel it is more wise to purchase mixed fertilisers directly than buying straight fertilisers separately. Similarly, those two segments of farmers opined that complex fertiliser ensure greater economy and is more convenient than straight fertiliser.

Awareness was examined using awareness index. In the case of mixed fertilisers, it was seen that maximum distribution was found in the aware and very much aware levels for all segments. But in the case of medium and large segment, maximum distribution was in the most aware level. This is possible since they may be using more fertiliser in their cultivation. But in the case of complex fertilisers, maximum distribution was in the just aware and aware levels for marginal and small segments. In the case of medium and large segment, as in the case of mixed fertilisers, more farmers were in very much aware and most aware levels. In the case of straight fertilisers, all the segments were in aware and very much aware levels.

The analysis done according to the number of brands known by each farmer reveal that awareness was found maximum about three and two number of brands, for all segments. It is worth mentioning that no one from marginal segment was aware of all the five brands and also no one from small and medium and large segment was aware of at least one brand. Thus it may be noted that awareness level increases as we go from marginal segment to medium and large segment. The trend was similar in the case of complex fertilisers as well. In the case of straight fertilisers, awareness about 2 brands was found highest for all segments.

Analysis done according to the individual brand name shows that, among mixed fertilisers, A and B brands are the most aware brand. When the small and medium and large segments showed significant awareness about brand D, it was negligible in the case of marginal segments. Medium and large segment expressed a satisfactory level of awareness about four brands. The case of complex fertiliser is all the more same with that of mixed fertilisers. Here as well, the medium and large segment expressed significant awareness about four brands. A and B brands ranked highest in the awareness level followed by C and D brands in the case of straight fertilisers.

The consciousness was also analysed similar to that of awareness, ie. using consciousness index. In the case of brand A of mixed fertilisers, majority of the farmers of all segments were in very much conscious and most conscious levels. It was among marginal segment, a worth mentioning share of farmers were found in least conscious level. The consciousness was lower for other brands. For all segments, an important share of farmers were found as least conscious for B brand. The share of farmers who are in very much conscious stage was lower than least conscious stage. In the case of C and D brand Fertilisers, most of the farmers of all segments were least conscious of the attributes.

For complex fertilisers, the A brand was found in the very much conscious level for all segments. This was followed by most conscious stage for all segments. Nobody was found in the least conscious stage from among medium and large segments. In the case of B brand, more of the marginal and small segments were least conscious whereas for medium and large segment, the share was equal for least conscious and very much conscious levels. The case of C and D brands is similar in the case of mixed fertilisers.

Regarding straight fertilisers, all the segments claim greater share in very much conscious stage with respect to A brand. The trend of the other brands are quite similar to other types of fertilisers, wherein least conscious stage always dominates.

Consciousness was also studied according to the attributes of each brand. It shows that, in the case of mixed fertilisers, the farmers of all segments were more conscious about the manufacturer, ingredient, price, stage of application and colour, of A and B brands. The consciousness was negligible in the case of C and D brands, but still more in the medium and large segment. Regarding the complex and straight fertilisers, the trend was not different than that of mixed fertilisers.

Then, loyalty was analysed examining the percentage of farmers who have never used different brands. For all the segments, this was found highest in the case of C and D brands followed by B. The percentage was found lowest for A brand. Analysis was also done according to the nature of change in proportion of purchase for each brand. Normally, farmers of all brands showed constant nature of purchase. A decreasing trend was found in A and B brands respectively of mixed and complex types of fertiliser. The B brand

deserve special mentioning due to its increasing nature at times which was more than happening in the case of A brand.

The type and brand preferences of farmers as explained in the above paragraphs were the result of the promotional efforts undertaken by the manufacturers. First of all, analysis was done to see the reasons for switching over to chemical fertilisers from organic manures. There was no farmer who has completely switched over to chemical fertilisers. The important reasons for partial switch over are yield increasing agent, non availability of organic manures and an important input in scientific cultivation. The other reasons were good for soil, less expensive and better speed of action. The case was same for all the segments. As a second step, analysis was conducted on the first source of information about fertilisers. The important sources pointed out by all the segments are neighbours and farmers, radio, printed media and block development office. The case of co-operatives and Krishi Bhavan deserve special mentioning as the dependence on them as a source was coming down when we go from marginal to medium and large segments.

So far efforts are done only to analyse fertiliser promotional efforts from a general plataeu. Thus analysis was done on media which have succeeded in providing brandwise information to the farmers. All the groups have a consensus opinion as to the fact that radio, film slide/ shows, newspaper advertisements, hoardings and seminars/camps have a definite role in creating brand differentiation. The case of radio was found as the most influencing source for all the segments.

In the previous paragraphs, the media of information which create brandwise awareness was studied. As a next step, it was attempted to analyse the percentage of farmers who got attracted by message of different media. In this case as well, it was radio which succeeds in communicating the message across the table. This was followed by newspaper advertisements, hoardings and film slides/shows. The role of co-operatives was less significant for medium and large segment comparing to that of marginal and small farmers.

Another important content of consumer decision making process is the choice of the source of purchase. It was

observed that co-operatives and private retail traders were the major sources of purchases for fertilisers. Thus analysis was also done separately for them as well. For the medium and large segment, the reasons were credit availability, good relationship with the dealer and timely availability in the selection of cooperatives as their dealer. For the other segments, the reasons (according to importance) are credit availability, timely availability and accessibility to the dealer. In the choice of private traders, availability of the product, good relation with the vendor and accessibility to the dealer were the reasons for medium and large segment. But the reasons in order of importance, for marginal and small farmers in the selection of private traders were availability of the product, accessibility of the vendor and good relation with the dealer. It was also observed that from among medium and large farmers, majority have opted for private traders only.

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Appendices

APPENDIX I

Consumption of Fertilisers in India

(Fig. in 1000 tonnes)

Year	Total consumption	Consumption/hectare
1951-52	66	0.6
1955-56	131	0.9
1960-61	294	1.9
1965-66	785	5.1
1970-71	2256	13.6
1975-76	2894	16.9
1980-81	5516	31.5
1985-86	8737	48.2
1988-89 (Est.)	11000	61.0

Source: Various Issues of Fertiliser Statistics, FAI

APPENDIX II

Consumption of Fertilisers in Kerala

(Figures in tonnes)

Year	Total consumption
1980-81	97,546
1981-82	94,761
1982-83	1,09,853
1983-84	1,29,477
1984-85	1,27,645
1985-86	1,41,330
1986-87	1,51,363
1987-88	1,82,490

Source: Economic Review, 1988, State Planning Board.

APPENDIX III

Districtwise consumption of Fertilisers 1986-87

(Figures in tonnes)

District	Quantity
Palghat	19,477
Kottayam	17,855
Ernakulam	15,353
Alleppey	12,241
Trichur	13,435
Malappuram	10,686
Kerala	1,51,363

Source: Statistics for Planning, 1988, State Planning Board Government of Kerala, Trivandrum.

APPENDIX IV

SCHEDULE

A schedule to study the brand preference and promotional effectiveness in fertiliser marketing.

The survey is conducted in partial fulfilment of the course M.Sc.(C&B) (Rural Marketing Management), College of Co-operation and Banking, Kerala Agricultural University.

PART I

1. Reasons for switching over to the chemical fertilisers (Please rankthe variables given)

   a. Scientific cultivation

   b. Increases yield

   c. Good for soil

   d. Non availability of organic manures

   e. Less expensive

   f. Others

2. List out the various brands known under the different types viz. mixed, complex and straight

3. Tick those attributes of different brands (separately for each type) on which you are conscious about

   a. Manufacturer

   b. Ingredient

   c. Price

   d. Colour of the product

   e. Odour

   f. Dosage

g. Crop

h. Stage of application

4. Specify the shares of each brand of fertiliser you have bought during: (for all three types separately)

   a. Present year

   b. Last year

   c. Future (next) year

5. First source of information about fertiliser (Tick against those applicable)

   a. Printed media

   b. Neighbours and farmers

   c. Krishi Bhavan

   d. Co-operatives

   e. Companies

   f. Radio

   g. Television

6. The media from which you have seen/heard about fertiliser brands

   a. News paper ads

   b. Demonstration

   c. Radio

   d. Film slide/show

   e. Fertiliser festival

   f. Seminars/camps

g. Exhibitions

h. Pamphlets

i. Hoardings

j. Free samples

k. Co-operatives

7. Specify media which have succeeded in delivering their message

(media list same as in question 6)

8. Reasons for prefering co-operatives

a. Credit facility

b. Accessibility

c. Timely availability

d. Subsidies

e. Good relation

f. Others

9. Reasons for preferring private traders

a. Store loyalty

b. Availability

c. Accessibility

d. Good relation

e. Others

PART II

Rank the following Statements.

(Put a tick mark against the choice which you feel as correct)

Brand

1. Brand multiplicity encourages fertiliser consumption

   a. Agree b. Undecided c. Disagree

2. Higher the number of brands, better will be the brandchoice

   a. Agree b. Undecided c. Disagree

3. Qualitative improvement of the crop is possible through different brands

   a. Agree b. Undecided c. Disagree

4. The brand which I use maintain quality

   a. Agree b. Undecided c. Disagree

5. All brands are not readily available in the market

   a. Agree b. Undecided c. Disagree

6. I think certain brands are sold easily

   a. Agree b. Undecided c. Disagree

7. Brand multiplicity encourages fertiliser consumption

   a. Agree b. Undecided c. Disagree

8. The brand which I use is sufficient to cater the needs of the crops I grow

   a. Agree b. Undecided c. Disagree

9. The productivity varies when different brands are used for same crop

a. Agree b. Undecided c. Disagree

10. Some brands are suitable for certain stages of cultivation only.

a. Agree b. Undecided c. Disagree

Types (in General)

1. The type of fertiliser used depends on the stage of the crop

a. Agree b. Undecided c. Disagree

2. I use a particular type, as it is more convenient

a. Agree b. Undecided c. Disagree

3. The efficiency of the types vary according to water availability

a. Agree b. Undecided c. Disagree

4. I use a particular type since other types are not readily available

a. Agree b. Undecided c. Disagree

5. The improvement in productivity vary according to the type of fertiliser applied

a. Agree b. Undecided c. Disagree

6. The crop quality varies according to the type of fertiliser applied

a. Agree b. Undecided c. Disagree

7. The type of fertiliser I use is more economical than other types

   a. Agree b. Undecided c. Disagree

8. The speed in release of nutrients vary among the different type of fertiliser

   a. Agree b. Undecided c. Disagree

Mixed fertiliser

1. I use mixed fertiliser, as they ensure better returns per unit applied

   a. Agree b. Undecided c. Disagree

2. Mixed fertilisers make available all the right nutrients in required quantity

   a. Agree b. Undecided c. Disagree

3. I think mixed fertilisers are more water responsive

   a. Agree b. Undecided c. Disagree

Straight fertiliser

1. Physical mixing of straight fertiliser is economical than buying mixed fertilisers directly

   a. Agree b. Undecided c. Disagree

2. Straight fertilisers ensure speedy release of nutrients

   a. Agree b. Undecided c. Disagree

Complex fertiliser

1. By using complex fertilisers, the multiple dosage of straight fertiliser can be overcome

   a. Agree b. Undecided c. Disagree

2. Complex fertiliser ensure greater economy

   a. Agree b. Undecided c. Disagree

APPENDIX V

Legends used in the study

1.	A	-	FACT brand
2.	B	-	VIJAY brand
3.	C	-	SHAW WALLACE brand
4.	D	-	SPIC brand
5.	E	-	MANGALORE FERT brand

AN ENQUIRY INTO THE BUYER BEHAVIOUR TOWARDS SELECTED TYPES AND BRANDS OF FERTILISERS

By

ANIL KUMAR V. P.

ABSTRACT OF A THESIS

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Mannuthy, Thrissur

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ABSTRACT

The study of enquiry into buyer behaviour towards types and brands of fertilisers analysed attitudes, awareness, consciousness loyalty and promotional effectiveness.

The primary data collected from Palghat District covered three segments viz. marginal, small and medium and large. Likert technique, awareness and consciousness index, Kendall's coefficient, percentages were used.

Farmers' opinions were converged for statements relating to brands of fertilisers. It was found less for types of fertilisers. Opinions were significant for mixed complex and straight fertilisers.

Prominent levels of awareness were aware, very much aware and just aware levels. Awareness was maximum for three and two number of brands. Brand A and B were most aware brands for all segments.

The brand A of mixed complex and straight fertilisers was placed in very much conscious and most conscious levels. The consciousness was poor for other brands. The attributes like manufacturer, ingredient and price have

led table with respect to all segments and all brands. Consciousness was more for brand A and less in other cases and brand A was the one most of farmers bought. Farmers of all brands, on an average, showed constant nature of purchase. The trend of brand A and B showed that B often increased its share in consumer purchase.

The important reasons for partial switching over to chemical fertilisers are yield increasing agents, non availability of organic manures and input in scientific cultivation. Along with radio, neighbours, farmers, printed media, were the first source of information about fertilisers. Besides continuous availability and nearness, credit availability, timely availability and accessibility to the dealer were important reasons for selection of purchase for cooperatives. For private traders, reasons were availability of product, relationship with vendor and accessibility to dealer which were found same for all segments in above given cases.