MARKET POTENTIAL AND CONSUMER DEMAND OF
MICRO NUTRIENT AND NPK SOLUBLE IN
HANUMANGARH DISTRICT OF RAJASTHAN

BY

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JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH-362 001

JUNE - 2012
(Registration No. J4 - 00719- 2010)
MARKET POTENTIAL AND CONSUMER DEMAND OF MICRO NUTRIENT AND NPK SOLUBLE IN HANUMANGARH DISTRICT OF RAJASTHAN

A
PROJECT WORK

SUBMITTED TO THE

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IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE

DEGREE

OF

MASTER OF BUSINESS ADMINISTRATION

IN

AGRI-BUSINESS

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ABSTRACT
MARKET POTENTIAL AND CONSUMER DEMAND OF MICRO NUTRIENT AND NPK SOLUBLE IN HANUMANGARH DISTRICT OF RAJASTHAN

Name of the student  Major advisor
Anil Kumar  Prof. C. R. Bharodia

POST GRADUATE INSTITUTE OF AGRI-BUSINESS MANAGEMENT
JUNAGADH AGRICULTURAL UNIVERSITY,
JUNAGADH-362001

ABSTRACT

In India agriculture has a long history dating back to ten thousand years. Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and logging accounted for 13.9 per cent of the GDP in 2011, employed 60 per cent of the total workforce and despite a steady decline of its share in the GDP, is still the largest economic sector and plays a significant role in the overall socio-economic development of India.

Fertilizers have played a vital role in the success of India’s green revolution and consequent self-reliance in food grains production. The increase in fertilizer consumption has contributed significantly to sustainable production in food grains in the country. India is the third largest fertilizer producer in the world. Fertilizer is a crucial input contributing to about 40 per cent of the productivity of the crop.

The N is for nitrogen, the P is for phosphorus and the K is for potassium or potash. Of the 16(12 of which are contained in water soluble fertilizers) known elements necessary for plant life, N-P-K, are the three that are of the most importance and always listed on water soluble fertilizers, in that order (except Eco-Grow, which lists N-K-P). Following N-P-K, calcium (Ca) and magnesium (Mg) are the two, second most important nutrients listed on the label. The rest, iron (Fe), sulfur(S), manganese (Mn), boron (B), molybdenum (Mb), zinc (Zn) and copper (Cu) are trace elements or micro-nutrients.

The project will be beneficial to farmers as well as HKB also. Before implementations of the project row information are needed this will provides basic strength to future business. Based on the requirement of project following objectives
of the study were formulated. 1) To find out major players’ in micro nutrients and NPK soluble business. 3) To find out market potential of micro nutrient and NPK soluble. 4) To find out the consumer demand and HKB’s portfolio. 4) To find out the gap filling in existing portfolio of HKB and consumer demand. Multi stage sampling technique will be adopted as per the objectives of the study. Two levels of multi sampling at taluka level and village level are being taken. In the first stage of sampling 12 distributors and 20 retailers will be selected at taluka level. At the village level 10 farmers each village level will be selected at the last stage of sampling. The primary data was collected through survey. The information was collected through personal interview with the distributor using well structured questionnaires. The interview was regarding information on agricultural activities, cropping pattern and about the fertilizer companies working in that area. Secondary data was collected from company database, Government departments, web portals and literature available from other sources.

Wheat is a main crop contributing 49 per cent area and gram contributes 30 per cent of total area which is at second place, other crops, mustard and barley are other rabbi crops having 18 and 3 percent of total rabbi cultivated area respectively in Hanumangarh district of Rajasthan. The use of micro nutrients in which maximum farmers are used 20 per cent Taxas, 15 per cent of SFC, 10 per cent of Utam, 10 per cent of CFCL, 10 per cent of T. Stone, 5 per cent of Agri Agrowieght and remaining 30 per cent by other company’s products. The use of NPK Soluble in which maximum farmers are used 50 per cent SFC, 10 per cent of IFFCO, 10 per cent of RCF, 10 per cent of CFCL, and remaining 20 per cent by other company’s products.

In the study area many purchasing point of micro-nutrients and NPK soluble are available in Taluka (Mandi), like HKB, Retailer/ Dealers. During the survey, I am noted that farmers are purchasing micro nutrients and NPK soluble from retailers and HKB, in which 75 per cent farmers are purchase micro nutrients, from retailers/dealers and only 25 per cent farmers are purchase micro nutrients from hariyali kisaan bazaar (HKB). 85 per cent farmers are purchase NPK soluble from retailers/dealers and only 15 per cent farmers are purchase NPK soluble from hariyali kisaan bazaar (HKB).

In the study area of survey there are several factors are noted which responsible for less purchasing from HKB by consumers. The major factors are like cash based business of HKB, the prices of the products sold at HKB are not uniform.
and keep on changing, sometimes more than twice a day, a major portion of the customer base of HKB does not even know about HKB, and the location of the store is not proper.

For gap filling in existence portfolio of HKB and consumer demand, some suggestions are like to increase the marketing activities at frequently basis e.g. Road show, trade show, free distribution of leaflets, advertisement in local newspaper, TV, field demonstration, farmer meeting etc., HKB should also provide the promotional offer to the farmers in different season like free coupon, free sampling, gifts etc., HKB should motivate the channel member by giving them incentives to dealers and promotion to sales executives, HKB should continue focus on the strategy, strength and weakness of its competitor other micro-nutrients and NPK soluble companies, HKB should also enhance the cash discount, rate of advance booking, liberal credit policy and profit margin to their distributors, HKB should improve their supply chain system by providing timely delivery to their dealers, and HKB should arrange the field expert’s visit at farmer’s field at regular interval.
Mr. C. R. Bharodia
Assistant Professor
PG Institute of Agri-Business Management
Junagadh Agricultural University
Junagadh (Gujarat)-362001

CERTIFICATE

This is to certify that the project work report entitled “MARKET POTENTIAL AND CONSUMER DEMAND OF MICRO NUTRIENT AND NPK SOLUBLE IN HANUMANGARH DISTRICT OF RAJASTHAN” submitted by ANIL KUMAR in the partial fulfillment of the requirements for the award of the degree of MBA (AB) at Junagadh Agricultural University, is a record of bonafide research work carried out by her under my guidance and supervision and the final project work has not previously formed the basis for the award of any degree, diploma or other similar title.

Place: Junagadh
Date: 06/06/2012

(C. R. Bharodia)
Major Guide
This is to certify that MR. ANIL KUMAR has successfully completed the comprehensive/preliminary examination held on 18/03/2012 as required under the regulation for Post Graduate studies.

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Junagadh Agricultural University
Junagadh

(K. A. Khunt)
Principal
PG Institute of ABM
Junagadh Agricultural University
Junagadh
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JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH

CERTIFICATE – II

Date: 19/06/2012

This is to certify that the project work report entitled “MARKET POTENTIAL AND CONSUMER DEMAND OF MICRO NUTRIENT AND NPK SOLUBLE IN HANUMANGARH DISTRICT OF RAJASTHAN” submitted for the degree of MBA IN AGRI-BUSINESS in the subject of AGRIBUSINESS MANAGEMENT embodies bonafide research work carried-out by MR. ANIL KUMAR under my guidance and supervision and that no part of this project work report has been submitted for any other degree. The assistance and help received during the course of investigation have been fully acknowledged.

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JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH

CERTIFICATE – III

Date: 19/06/2012

This is to certify that the project work report “MARKET POTENTIAL AND CONSUMER DEMAND OF MICRO NUTRIENT AND NPK SOLUBLE IN HANUMANGARH DISTRICT OF RAJASTHAN” submitted by MR. ANIL KUMAR to Junagadh Agricultural University, Junagadh in the partial fulfillment of the requirements for the degree of MBA IN AGRI-BUSINESS in the subject of AGRIBUSINESS MANAGEMENT after recommendation by the external examiner was defended by the candidate before the following members of examinations committee. The performance of the candidate in the oral examination was satisfactory; we therefore, recommended that the project work report is approved.

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Approved by

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JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH
CERTIFICATE – IV

Date: 04/7/2012

This is to certify that MR. ANIL KUMAR student of MBA IN AGRI-
BUSINESS in AGRIBUSINESS MANAGEMENT has made all
corrections/modifications in the project work report ENTITLED “MARKET
POTENTIAL AND CONSUMER DEMAND OF MICRO NUTRIENT AND NPK
SOLUBLE IN HANUMANGARH DISTRICT OF RAJASTHAN” as suggested by
the external examiner and the advisory committee in the oral examination held on
19/06/2012. The final copies of the project work report duly bound and corrected
have been submitted on 04/7/2012.

(C.R.Bharodia)
Major Guide
Assistant Professor
PG Institute of ABM
Junagadh Agricultural University
Junagadh

Best Regards.
Ravile Desai
Head-Human
We wish him all the success in his future endeavors.
March 27, 2012

CERTIFICATE – V

This is to certify that Mr. Anil Kumar has successfully completed his project with us. The project was conducted over a period of 7 weeks, starting from Jan 16, 2012 to March 05, 2012. He has completed his project on “Market Potential and Consumer Demand of Micro Nutrient and NPK soluble in Hanumangarh District of Rajasthan”

During the course of project, we found him to be hardworking, sincere and committed; lie has completed the project to our satisfaction.

Best Regards.

Kavita Dasan
Head-Human
We wish him all the success in his future endeavors.
ACKNOWLEDGEMENT

An individual cannot do project of this scale. I take this opportunity to express my acknowledgement and deep sense of gratitude to the individuals for rendering valuable assistance and gratitude to me. Their inputs have played a vital role in success of this project.

I express my sincere thanks to our Principal, Dr. K. A. Khunt and my project guide, Mr. C. R. Bharodia, Assistant Professor (PGIABM, JAU, Junagadh) for his generous support, constant direction and mentoring at all stages of the project work.

I am record my gratitude to Dr. N.C. Patel, Hon’able Vice Chancellor, Dr. C. J. Dangaria, Director of Research and Dean of P. G. Studies, JAU, Junagadh for providing me necessary facilities for conducting my project work.

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I am thankful to Mr. Narender Joshi and Mr. Manoj Kumar Sharma of DSCL Hariyali Kisaan Bazaar for provided me an opportunity to undertake a project.

I express my special thanks to my friends and colleagues Dr. Basant Kumar Sharma, Mr. Mahesh Sharma, Mr. Birbal Ram, Mr. Hanuman Prasad, Mr. Babu Jose, Mr. Kapil, Mr. Sudip and Ms. Ekta Sharma, who have been a constant source of help and encouragement. I firmly believe that there is always a scope of improvement. I welcome any suggestions for further enriching the quality of this report.

Most humble, I owe to my beloved parents for their blessing and inspiration made me competent enough to fight the battle of life and to achieve the goal.

Place: Junagadh

Date: 06/06/2012

(Anil Kumar)
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CHAPTER 1
INTRODUCTION

1.1 Fertilizer’s Industries Overview:

The fertilizer industry is one of the most energy intensive units with an ancillary industry of particular interest in the context of basic industrial and development discussions. Increase in productivity of this good with the help of new and more efficient technologies in the manufacturing sector will be key to managing economic, environmental and social development issues. The role of agriculture in the development of human civilization is unsung. In developing countries like India, with increase in the demand for food, the need for fertilizer industry has experienced an rapid growth. The increase in the per hectare productivity can only be achieved through better management of existing facilities.

Fertilizer production in India is carried out at the Phosphates, Potash and Nitrogen (Urea) units. There are two primary types of single nutrient fertilizers, which are produced in India. The Phosphatic fertilizers include Bone Meal, SSP and Muriate of Potash (MoP) are the most commonly used fertilizers. Among these, urea and DAP are the most fertilizers that are produced indigenously. Due to the lack of viable reserves or reserves of potash in India, the central fertilizers requirements for potassic fertilizers are imported. Thus, Polish based fertilizer demand is mainly met by imports. The Phosphate fertilizer raw materials are imported and fully natural Gas and LNG is being imported for urea fertilizer production. In India, technical problems, power shortages and stringent government policies lead to problems in production expansion and high import prices is a matter of concern especially for farmers.

Fertilizers in the agricultural process is an important area of research. Fertilizer industry in India has succeeded in meeting the demand of all chemical fertilizers in the recent years. The Fertilizers Industry in India started its first manufacturing unit of Single Super Phosphate (SSP) in Ramapur near Chhindwada with a capacity of 6000 MT a
CHAPTER - I
INTRODUCTION

1.1 Fertilizer's Industries Overview:

The fertilizer industry is one of the most energy intensive sector within Indian economy and is therefore of particular interest in the context of both local and global environment discussions. Increase in productivity of this good with the use of cleaner and more efficient technologies in the manufacturing sector will be most effective immersing economic, environment and social development objectives. Being the backbone of agricultural productivity, the role of fertilizers will always remain crucial. In developing countries like India, with increase in demand for food the demand for fertilizer supply has experienced an upward shift. There is little doubt that improved productivity can only be attained through better management of inputs, including fertilizers.

Fertilizer production in India is nutrient wise. The three main nutrients-Phosphate, Potash and Nitrogen (Urea) are used for fertilizers creation. Urea, ammonium sulphate, calcium ammonium nitrate (CAN) and ammonium chloride are the nitrogenous fertilizers produced in India and single superphosphate (SSP) is the only phosphatic fertiliser that is produced in India. Additionally, nutrients are combined to produce several complex fertilizers. Production of complex fertilizers include DAP (Diammonium Phosphate), several grades of nitrophosphates and NPK complexes. Urea, DAP, SSP and Muriate of Potash (MOP) are the most commonly used fertilizers. Among these, urea and DAP are the main fertilizers that are produced indigenously. Due to the lack of viable resources or reserves of potash in India, the entire feedstock requirement for potassic fertilisers are imported. Thus, Potash based fertilizer demand is entirely met by imports, for Phosphate fertilizer raw materials are imported and lastly Natural Gas and LNG is being imported for Urea fertilizer production. In India, technical problems, power shortages and stringent government policies lead to problems in production expansion and high import prices is a matter of concern especially for farmers.

Fertilizer in the agricultural process is an important area of concern. Fertilizer industry in India has succeeded in meeting the demand of all chemical fertilizers in the recent years. The Fertilizer Industry in India started its first manufacturing unit of Single Super Phosphate (SSP) in Ranipet near Chennai with a capacity of 6000 MT a
year. The Fertilizer & Chemicals Travancore of India Ltd. (FACT) at Cochin in Kerala and The Fertilizer Corporation of India (FCI) in Sindri in Bihar were the first large sized plants set up in forties and fifties with a view to establish industrial base and attain self sufficiency in food grains. An impetus to the growth of fertilizer industry in India was given by Green revolution in Sixties. Further a significant addition to the production was witnessed in seventies and eighties. The fertilizer industry has played a pivotal role in achieving self sufficiency in food grains as well as in rapid and sustained agricultural growth. India is third largest producer and consumer in the world after China and the United States. According to Given Statistics, total capacity of the industry as on 30.01.2003 has reached a level of 121.10 lakh MT of nitrogen (inclusive of an installed capacity of 208.42 lakh MT of urea after reassessment of capacity) and 53.60 lakh MT of phosphate nutrient.

The growth of Indian fertilizer has been largely determined by the policies pursued by the government which mainly confine to controls on the pricing, distribution and movement of fertilizers. The industry is capital intensive and the production process energy intensive with the combined cost of feedstock and fuel accounting for anywhere between 55 and 80 per cent of cost of production, depending on the type of fertilizers.

1.1.2) Present Status of Fertilizer Industry:

India being the third largest producer and consumer of fertilizers in the world with an installed capacity of Nitrogen (N) and Phosphate (P) nutrients at 14 million tones p.a. Urea, a nitrogenous type of fertilizer, is most widely consumed in India. Currently the urea capacity is 20.2 million tonnes while consumption is 21.7 million tonnes.

Fertilizer production is highly energy intensive with cost of feedstock and fuel alone accounting for between 55 to 80 per cent of the cost of production. Plants in India is based primarily on three feedstock - naphtha, fuel oil and natural gas with a significant proportion of domestic capacity of urea plants based on naphtha or fuel oil which cost more than natural gas. High cost feedstock and increased production/consumption have caused a steady increase in fertilizer subsidy.
1.1.3) Growth of Fertilizer Industry

The industry made a very humble beginning in 1906, when the first manufacturing unit of Single Super Phosphate (SSP) was set up in Ranipet near Chennai with an annual capacity of 6000 MT. The Fertilizer & Chemicals Travancore of India Ltd. (FACT) at Cochin in Kerala and the Fertilizers Corporation of India (FCI) in Sindri in Bihar (now Jharkhand) were the first large sized -fertilizer plants set up in the forties and fifties with a view to establish an industrial base to achieve self-sufficiency in food-grains. Subsequently, green revolution in the late sixties gave an impetus to the growth of fertilizer industry in India and the seventies and eighties then witnessed a significant addition to the fertilizer production capacity.

The installed capacity as on 31.03.2009 has reached a level of 120.61 lakh MT of nitrogen of capacity of which the non functional capacity is estimated as 10.52 lakh MT and 56.59 lakh MT of phosphatic nutrient, making India the 3rd largest fertilizer producer in the world. The rapid build-up of fertilizer production capacity in the country has been achieved as a result of a favourable policy environment facilitating large investments in the public, co-operative and private sectors. Presently, there are 56 large size fertilizer plants in the country manufacturing a wide range of nitrogenous, phosphatic and complex fertilizers. Out of these, 30 (as on date 28 are functioning) units produce urea, 21 units produce DAP and complex fertilizers, 5 units produce low analysis straight nitrogenous fertilizers and the remaining 9 manufacture ammonium sulphate as byproduct. Besides, there are about 72 medium and small-scale units in operation producing SSP. The sector-wise installed capacity is given in the table below:

### Table 1.1 Sector-Wise, Nutrient-Wise Installed Capacity of Fertilizer Manufacturing Units as on 31.03.2009.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Sector</th>
<th>Capacity (lakh MT)</th>
<th>Percentage Share</th>
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<tr>
<td>N</td>
<td>P</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>1</td>
<td>Public Sector</td>
<td>34.98</td>
<td>4.33</td>
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<tr>
<td>2</td>
<td>Cooperative</td>
<td>31.69</td>
<td>17.13</td>
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<tr>
<td></td>
<td>Sector</td>
<td></td>
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<tr>
<td>3</td>
<td>Private</td>
<td>53.94</td>
<td>35.13</td>
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<tr>
<td>Sector</td>
<td>FY95</td>
<td>FY96</td>
<td>FY97</td>
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<tr>
<td>----------------------------</td>
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<td>------</td>
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<tr>
<td>Total:</td>
<td>120.61</td>
<td>56.59</td>
<td></td>
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</tbody>
</table>

Source: Annual Report-Department of Fertilizers 2009-2010

Fig. 1.1 Production of Fertilizers Quantity (MMT)

Source: Annual Report-Department of Fertilizers 2009-2010

1.1.4) Major Players in Fertilizer Market:

Table 1.2 Major Players in Fertilizer Market

<table>
<thead>
<tr>
<th>PUBLIC SECTOR</th>
<th>PRIVATE SECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer Corporation of India (FCIL)</td>
<td>The Scientific Fertilizer Co Pvt Ltd.</td>
</tr>
<tr>
<td>Hindustan fertilizer Corporation Limited (HFC)</td>
<td>DSCL Fertilizers</td>
</tr>
<tr>
<td>Pyrites, Phosphates &amp; Chemicals Limited</td>
<td>Deepak Fertilizers and Petrochemicals Corporation Limited</td>
</tr>
<tr>
<td>Rashtriya Chemicals and Fertilizers Limited (RCF)</td>
<td>Apratim International</td>
</tr>
<tr>
<td>National Fertilizers Limited (NFL)</td>
<td>Devidayal Agro Chemicals</td>
</tr>
<tr>
<td>Projects and Development India Limited (PDIL)</td>
<td>Aries Agro Vet</td>
</tr>
</tbody>
</table>
The Fertilizers and Chemicals Travancore Limited (FACT)
Madras Fertilizers Limited (MFL)
FCI Aravali Gypsum & Minerals India Limited, Jodhpur

Gujarat State Fertilizers & Chemicals Limited
Tata Chemicals Limited
Chambal Fertilizers
Nagarjuna Fertilizers and Chemicals Limited
Godavari Fertilizers and Chemicals Limited
Zuari industries Ltd.

1.2 About Hariyali Kisaan Bazaar

“Hariyali” means “Greenery” in Hindi. It signifies “Prosperity in Agriculture”

“Kisaan Bazaar” means “Farmer’s market”

1.2.1 Board of Directors

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Shri Ajay S. Shriram</td>
<td>Chairman &amp; Senior Managing Director</td>
</tr>
<tr>
<td>2.</td>
<td>Shri Vikram S. Shriram</td>
<td>Vice Chairman &amp; Managing Director</td>
</tr>
<tr>
<td>3.</td>
<td>Shri Rajiv Sinha</td>
<td>Deputy Managing Director</td>
</tr>
</tbody>
</table>

1.2.2 Corporate Office

DSCL Hariyali Kisaan Bazaar
5th Floor, Kanchenjunga Building,
18 Barakhamba Road,
New Delhi - 110001 (India)
1.2.3 Core Values & Beliefs of the Company

“Hariyali - committed to improving lives in Rural India. The business is designed to unlock the latent opportunity in rural markets facilitating inclusive growth. Providing approachable Agri distribution channel, this caters to multiple products and advisory service as well” (Anon, 2010).

1.2.3.1 Customer Focus

- Be sensitive to the needs of the customer; develop superior customer insight.
- Commitment to surpass expectations and deliver superior value.

1.2.3.2 Innovation and Excellence

- Think differently and promote creativity.
- Make continuous improvement a way of life; drive excellence.

1.2.3.3 People Development

- Continuously improve and upgrade the skills and competencies of our people.
- Support people to realise their potential.

1.2.3.4 Team work

- Work closely as a cohesive, well-knit team.
- Inculcate a spirit of openness and collaboration.

1.2.3.5 Relationships and Human Dignity

- Value people and partnerships.
- Nurture understanding, compassion, trust and respect in all relationships.

1.2.3.6 Social Responsibility and Ethics

- Be a socially responsible corporate, addressing the needs of the community and environment.
- Conduct business ethically.
- Maintain highest standards of personal integrity.
1.2.4 Company Profile

Set-up as a complete Agri-solution provider in July 2002 to provide the rural customer with choice, trust, dignity and thus create long-term relationships.

"Hariyali Kisaan Bazaar" - a rural business centre, is a pioneering micro level effort, which is creating a far-reaching positive impact in bringing a qualitative change and revolutionizing the farming sector in India. It is also an example of how well meaning corporates can contribute to development of agriculture by building sustainable business models.

DCM Shriram Consolidated Ltd. (DSCL), capitalising its over 35 years of experience in the agri-input markets & firsthand knowledge of Indian farmers, is setting up a chain of centres aimed at providing end-to-end ground level support to the Indian farmer & thereby improving his "profitability" & "productivity"(Anon., 2010).

1.2.4.1 The key constraints of the Indian farming sector, being addressed by "Hariyali" are:

- Lack of last mile delivery mechanism of modern agriculture know-how & practices.
- Lack of availability of critical good quality agri-inputs.
- "Middlemen" driven farmer interface.
- High cost credit.
- Lack of direct access to buyers of varied & high value crops (Anon, 2010).

1.2.4.2 Hariyali Kisaan Bazaar

The "Hariyali Kisaan Bazaar" chain, seeks to empower the farmer by setting up centres, which provide all encompassing solutions to the farmers under one roof. Each "Hariyali Kisaan Bazaar" centre operates in a catchment of about 20 kms. A typical centre caters to agricultural land of about 50000-70000 acres and impacts the life of approx. 15000 farmers (Anon., 2010).

1.2.4.3 Each centre is engaged in

- **Bridging the last mile**: Provides handholding to improve the quality of agriculture in the area. Provides 24X7 supports through a team of qualified agronomists based at the centre.
Quality Agri-Inputs: Provides a complete range of good quality, multi-brand agri inputs like fertilizers, seeds, pesticides, farm implements & tools, veterinary products, animal feed, irrigation items and other key inputs like diesel, petrol at fair prices.

Financial Services: Provides access to modern retail banking & farm credit through simplified and transparent processes as also other financial services like insurance etc.

Farm Output Services: Farm produce buyback opportunities, access to new markets & output related services.

Other Products and Services: Fuels, FMCG, Consumer Goods and Durables, Apparels etc.

These centers provide the much needed respect/dignity and freedom to the Indian farmer. In the near future, Hariyali Kisaan Bazaars plan to move beyond agri to meet the other needs of farmers as customers (Anon., 2010).

1.2.4.4 Technology as an important enabler

IT has been a critical backbone to the chain of centers. It is being used to provide online support on latest technical advancements, weather forecasts, mandi (market) prices, fair & transparent billing to farmers as well as in maintaining extensive farmer databases with micro information about the farmers' field to provide customized service to the farmers (Anon., 2010).

1.2.4.5 Farmer Response

So far over 275 Hariyali outlets have been set up across eight states- Haryana, Punjab, Uttar Pradesh, Rajasthan, Uttarakhand, Madhya Pradesh, Maharashtra and Andhra Pradesh

The ground-level agri-support is already yielding results in the farmer's fields. Whether it is adoption rate of high yielding seeds, right doses of fertilization, productivity of cattle-feed, moisture conservation measures, adoption of new crops/allied occupations or adoption of new technologies like zero tillage, the farmers in catchment of Hariyali centres are already way ahead of the national averages (Anon., 2010).
1.2.4.6 Future Plans

Hariyali Kisaan Bazaar has plans to rapidly scale up the operations & create a national footprint covering all the major agricultural markets of the country. This would mean catering to cultivable land of over 30 million acres and touching the lives of over 10 million farmers (Anon., 2010).

1.3 Practical Utility of Project Work

Scope of the study is totally relates to the objectives. HKB could benefit from the outcome of the study as this study helps understanding the behavior of the farmers and their perception for HKB. This also helps in evaluating further strategies for the surveyed locations. Under this project researcher will be come to know the level of farmers about use of micro nutrients and NPK soluble fertilizers, awareness about micro nutrients and soluble fertilizers and their consumption.

1.4 Objectives of the Study

The objective of present study is “Market Potential and Consumer Demand of Micro Nutrient and NPK soluble in Hanumangarh District of Rajasthan”.

The sub objectives of the study are:

1. To find out major players’ in micro nutrients and NPK soluble business.
2. To find out market potential of micro nutrient and NPK soluble.
3. To find out the consumer demand and HKB’s portfolio.
4. To find out the gap filling in existing portfolio of HKB and consumer demand.

1.5 Limitations

- The survey is limited mainly, one district of Rajasthan with a sample size of distributors (12), retailers (20) and farmers (200) respondents only so it will not represent whole area of district.
- The information filled in the questionnaire by the respondents may be biased.
- Another problem that I have faced is the poor response of some distributors, retailers and farmers.
CHAPTER II
REVIEW OF LITERATURE

A brief review of studies, which have a direct or indirect bearing on the
appropriateness of this current study, is attempted in this chapter. Commensurate with the
publication of the present study, the available literature was scanned and is briefly
reviewed under following heads:

[Text continues as normal]
CHAPTER - II

REVIEW OF LITERATURE

A brief review of studies, which have a direct or indirect bearing on the objectives of the present study, is attempted in this chapter. Commensurate with the objectives of the present study, the available literature was scanned and is briefly reviewed and presented under following heads.

Venkateswaralu et al. (1984) attempted to examine the reason for being brand loyal. It has been found that 50 per cent of the consumer respondents preferred a particular brand because they were convinced that its quality was better than that of other brand. Another 38 per cent of the sample consumers felt it was the test which made them go in for a particular brand, while very few consumers in the sample stated low price and easy availability as the main reason for selecting a brand.

Ramaswamy and Chandrashekaran (1990) examined factors influencing cotton seed buying behavior of farmers in Kamaraj district of Tamil Nadu, India. Sixty cotton growers were selected from four villages for agricultural year 1987-88. Factors influencing farmers' purchase of cotton seeds were source of purchase, varietal preference, seed quality, source of information about the supply of cotton by different agencies and brand preference.

Sidhu (1992) observed that in Punjab, fertilizers market was controlled by the private traders as about 80 per cent of the total fertilizers were handled by it, which indicated oligopolistic nature of the market. The cooperatives and the government handled only about 20 per cent of the total fertilizers consumed. The private distribution channel was found to be more efficient than the others.

Bhattacharya (1999) study revealed that the persistence of low quality was explained with rational, strategic behaviour of producers and consumers of experience goods in informal markets, where quality was revealed after purchase, price was determined by bargaining, and renegotiation of price does not necessarily follow after quality is improved by the seller. Starting from a given contract between a buyer and a seller at a given price that has been reached through costly bargaining, assume that after the existing quality was revealed, the seller comes across a project (possibly adoption of better technology), which will enhance existing quality. If the project is efficient, it will always be adopted by any formal market structure.
Herrmann (2001) explained theoretical aspects of pricing and consumer behaviour and to analyse them with reference to groups of breakfast products, using Indian data from September 1996 to June 1999. The results indicated major significance of special offers; on average, out of 20 groups of foods, one product in each group was offered at a discount every two weeks. Special offers had very marked effects on sales, which in some cases rose by 274 per cent. Demand was greatest for products with a long storage life, such as coffee. It appears likely that consumers bought some items only during special offer periods. There was very strong consumer reaction to price changes for jams and breakfast cereals. An active pricing policy thus represents a central marketing instrument in food retailing; this was consistent with strong consumer reaction to price changes.

Paliwal (2001) reported that calculation of market potential needs estimated area under that product, for only seed, estimated area in ha for successive years can be multiplied with their corresponding seed rate to estimate market potential, market potential = area under individual crop in ha x average seed rate applied in kg per ha.

Chaurasia et al. (2005) studied that the application of 5 foliar sprays of water soluble fertilizers significantly increased the plant height, number of branches, Number of fruits, average fruit weight, fruit length, fruit diameter, TSS, yield and the net profit of tomatoes. The maximum plant height, number of branches/plant, fruit length, yield, net profit along with maximum C:B ratio were recorded by 5 foliar sprays of water soluble liquid fertilizers 19:09:19 followed by NPK 19:19:19. The minimum values in all the parameters were recorded in the control having only recommended dose of fertilizer.

Reddy et al. (2005) studied that, a lot of factors are considered by farmers while purchasing water soluble fertilizers i.e. quality, price, dealers suggestion, advertisement, brand, own experience and availability. Thus, a company has to work upon continuous improvement of a number of characteristics if they want to strengthen their brand. So, first the company has to decide what type of image they want to create in consumer's mind, and then only they can go for promotional activities.

Banumathy and Hemameena (2006) are of the view that brand preferences among the consumers may be related to different factors like personal attributes age, educational qualifications, occupational status, monthly income etc.

Gadkari (2006) reported that the RCF is implementing various fertilizers promotional and farmer's education programmes in all the marketing states. The need
of the hour is to educate the farmers for balanced use of fertilizers with proper combination of micronutrient and organic manure in an integrated plant nutrient approach, considering the situation of the soil, water and overall in all activities for transferring right technology from lab to land. Every year RCF is providing training to 1200 farmers. RCF is organising 40 training programmes of three to four days in these institutes. So far 12,285 farmers have participated in the training programmes.

Ghatol and Bakhale (2006) reported that the Commissioning of Zuari Industries fertiliser plant in Goa, more than three decades ago was a significant milestone towards country’s self-reliance in foodgrains. Faced with the major challenge of educating farmers to enhance their yields through increased use of fertilisers and adoption of scientific methods in farming, Zuari devised its service oriented marketing strategy and organised innovative education programmes for farmers. Frontline task of extension education was undertaken through agricultural graduates. Attaching great importance to selection of right type of dealers, Zuari familiarized dealers with their role as ‘change agents.’ The company was pioneer in implementing extension programmes like soil testing services, audio-visual van, block demonstrations with soil test-based fertilizer use, farmers educational tours, crop competitions, etc., and winning the hearts of farmers. Company also implemented area specific rural development programmes such as watershed development, bore-well recharging, village adoption, horticultural development programmes, intensive fertiliser promotion campaigns, etc. “Krishi Samrat” award instituted by Zuari in 1985 is recognised as a premier award in its marketing territory. Through unrelenting efforts towards the growth of Indian agriculture the company has achieved an enviable position in its marketing territory with its strong brand equity and farmer friendly image.

Bara (2008) found that, Brand image is the perceptions and beliefs held by consumers, as reflected in the associations held in consumer's memory. Brands can signal a certain level of quality so that satisfied buyers can easily choose the product again and again. As a company's major enduring asset, a brand needs to be carefully managed so that its value does not depreciate. Brand that fails to do so find that their market leadership dwindles or even disappears, therefore need of brand strengthening and brand repositioning arises.
Das (2009) mentioned that in the study, Multiplicity of cropping systems has been one of main features of Indian agriculture and it is attributed to rainfed agriculture and prevailing socio-economic situations of farming community. It has been estimated that more than 250 double cropping systems are followed throughout the country and based on rationale of spread of crops in each district in the country, 30 important cropping systems have been identified. The statistics related to state-wise agro-ecosystems cropping pattern for 1998-99 and cropping pattern according to land utilization are provided. The major issues emerging in the irrigated cropping systems along with yield gaps of some of important cropping systems have also been provided.

Siddiqui et al. (2009) reported that the application of NPK macronutrient and Zn and B micronutrient fertility significantly enhanced yield and yield contributing parameters of sunflower. The values of all crop parameters increased as the dose of fertilizers increased and maximum response was exhibited under 90-45-45 NPK with 15 kg ha⁻¹ Zn and 1.5 kg ha⁻¹ B (with N applied as fertigation). Beyond this fertility level, non-significant responses were noted. Hence, it may be concluded that application of this treatment seems to be most beneficial for sunflower production.

Chahal and Hundal (2010) observed that the farmers were not having a very strong brand loyalty as far as pesticides are concerned, through their loyalty did increase as their association with the brands grew old. Also, the rural market was very price sensitive and this was one very important factor causing brand switching. Low prices helped in retaining old customers apart from gaining new ones. Also, good promotional schemes attracted new customers to some extent, they also made the brands being liked more by the farmers. Farmers were also found to be quality conscious, apart from being conscious about the image of the brand, through to a smaller extent and expected desired results from their preferred brands. Farmer’s purchase decisions were also found to be greatly influenced by others recommendations like friends, fellow farmers, etc. Dealers recommendation also influenced the purchase decisions of those farmers greatly, who were not associated with particular brands for a very longtime. Long time users wanted their brands to be easily available. Ease of application also helped a brand gain customers preference initially.
Lohana (2011) investigates on the topic Marketing Strategy, dealers and farmers expectation from company, pricing policy of Syngenta India Pvt. Ltd. in Punjab. The findings show that the product quality and place (easy availability) has an impact on consumer motives, and the pricing strategy (competitiveness) has a significant positive impact on consumer buying behavior. These findings suggest that consumers look for product characteristics and store location when buying Agri input products.
CHAPTER III
MATERIALS AND METHODS

The methodology adopted for and evaluation of the objective of the present
project work.

...
CHAPTER - III
MATERIALS AND METHODS

The methodology adopted for and evaluation of the objective of the present study is described under following heading:

1. Area of the study
2. Year and time of project work
3. Types of data
4. Sampling techniques
5. Sample size
6. Analytical procedure

3.1 Area of study

Fig. 3.1 Map of Hanumagarh (Rajasthan)

Hanumagarh District is depending on agriculture. Major Crops of the region are Wheat, Rice, cotton, Mustard, Guar, Grams, and Sugarcane. Horticulture also becoming popular among farmers, Kinnuw and Malta (a citrus family fruit) were popular horticultural produce, and floriculture was also dominant. Industries in Hanumangarh District were based on agriculture. Major industries were Cotton Ginning and pressing factories, Mustard oil mills, and Wheat flour mills, Sugar Mill and Cotton Spinning and Textile Factories. Most of the factories were located in and around the city (Anon, 2011).
3.2 Year and time of project work
16- January- 2012 to 05- March- 2012

3.3 Types of data
There are two type of data was available for the research purpose viz., the primary data and secondary data.

The primary data was collected by survey method through personal interview of farmer using well structured questioner. The information regarding cultural activities, per acre profit of different vegetable crops, use of pesticides, post harvest activities, selling patterns, farmers awareness about pesticides residue, business approaches of different vegetable retail and contract farming companies etc.

The secondary data and other relevant information for study was gathered from reference books, bulletins journals and periodicals of the subject published by authors, originations, institutions and agencies.

3.4 Sampling technique
As per objectives of the study, Multi stage sampling technique will be adopted as per the objectives of the study. Two levels of multi sampling at taluka level and village level are being taken. In the first stage of sampling 12 distributors and 20 retailers will be selected at taluka level. At the village level 10 farmers each village level will be selected at the last stage of sampling.

3.5 Sample size

Table 3.1 Distributors and retailers in Talukas of Hanumangarh districts

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Taluka</th>
<th>No. of Distributors</th>
<th>No. of Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hanumangarh</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Sangharia</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Pilibangan</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Rawatsar</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td></td>
<td><strong>20</strong></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Villages</td>
<td>No. of farmer</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Hanumangarh Taluka</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Rodawali</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Jorkiyan</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Kohla</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Chandra</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Rampura Narayna</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sangharia Taluka</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Sangharia</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bolawali</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ratan pura</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Shali wala</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Santpura</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Pilibanga Taluka</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Kharlia</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Dev Nagar</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Hanslia</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Panditawali</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Likhami Sar</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Rawatsar Taluka</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Rampura Matoria</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Khotawali Dhani</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>4RPM</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>11NWD</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>9NWD</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
<td></td>
</tr>
</tbody>
</table>

3.6 **Statistical analysis**

Simple Statistical Tools like tabular analysis and graphical method (through bar graph and pie chart by using MS Excel) were used.

Market potential = [Projected area under the specific crop under study (ha) X
The recommended dose of fertilizers per ha.]
RESULTS AND DISCUSSION

4.1 The major players in micro nutrients and NPK soluble baselines.

It is seen that different Micro nutrients and NPK soluble of different companies were using by farmers and there are given very well results. The different major players in such nutrients and NPK soluble baselines are given in the table below which we given below in the table with their products.

<table>
<thead>
<tr>
<th>Product</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chemical Fertiliser and Chemical Ltd.</td>
</tr>
<tr>
<td>2</td>
<td>Narayas Chemicals and Fertilizers</td>
</tr>
<tr>
<td>3</td>
<td>U.P.C.O</td>
</tr>
<tr>
<td>4</td>
<td>U.P.C.O</td>
</tr>
<tr>
<td>5</td>
<td>U.P.C.O</td>
</tr>
</tbody>
</table>

Mineral mixture 19:19:19 + FeSO₄, ZnSO₄.
CHAPTER - IV
RESULTS AND DISCUSSION

This chapter is devoted to presentation and interpretation of the results obtained through the analysis of the data. The chapter is presented under the following broad heading.

4.1 The major players’ in micro nutrients and NPK soluble business.

In study area has different Micro nutrients and NPK soluble of different companies were using by farmers and these are given too well results. The different major players in micro nutrients and NPK soluble business in study area were found, which are given below in table with their products:

Below table 4.1 indicate that major players of micro nutrients and NPK soluble and their compositions in study area, like Sriram Fertilizers & Chemicals, Chambal Fertilizer and Chemical Ltd., Rarsiya Chemicals and Fertilizers, IFFCO, Taxas Ltd., T. Stone, Agri Agrowieght and Utam etc.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Company</th>
<th>Micro-Nutrients</th>
<th>NPK Soluble</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sriram Fertilizers &amp; Chemicals</td>
<td>Zn21%</td>
<td>Shakti (20:20:20)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Zn33%</td>
<td>Sathi (0:52:34)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shriram Tripti</td>
<td>Prabal (13:0:45)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FeSO₄</td>
<td>Poshak (19:19:19)</td>
</tr>
<tr>
<td>2.</td>
<td>Chambal Fertilizer and Chemical Ltd.</td>
<td>Mineral mixture</td>
<td>20:20:20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FeSO₄</td>
<td>19:19:19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ZnSO₄</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>IFFCO</td>
<td>Mineral mixture</td>
<td>19:19:19</td>
</tr>
<tr>
<td>5.</td>
<td>Taxas Ltd.</td>
<td>Mineral mixture</td>
<td>19:19:19</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>Mineral Mixture</td>
<td>Ratio</td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>---------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>6</td>
<td>T. Stone</td>
<td>Mineral mixture</td>
<td>19:19:19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FeSO₄</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ZnSO₄</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Agri Agrowight</td>
<td>Mineral mixture</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FeSO₄</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ZnSO₄</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Utam</td>
<td>Mineral mixture</td>
<td>19:19:19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suphour 90%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FeSO₄</td>
<td></td>
</tr>
</tbody>
</table>

### 4.1.1 Brand used for micro nutrients:

Below fig. 4.1 shows that the brand of micro nutrients used by farmers. 20 per cent farmers were used Taxas, 15 per cent of SFC, 10 per cent of Utam, 10 per cent of CFCL, 10 per cent of T. Stone, 5 per cent of Agri Agrowight and remaining 30 per cent by other companies products in Hanumangarh region.

![Diagram showing market share of different brands of micro nutrients in Hanumangarh](image-url)
4.1.2 Brand used for NPK soluble:

Below fig. 4.2 show that the brand of NPK Soluble used by farmers, in which maximum farmers are used 50 per cent SFC (Shriram Fertilizers and Chemicals), 10 per cent of IFFCO, 10 per cent of RCF (Rashtriya Chemicals and Fertilizers), 10 per cent of CFCL (Chambal Fertilizers and Chemicals Ltd.), and remaining 20 per cent by other company’s products in Hanumangarh region.

![Pie Chart showing market share of different brands of NPK soluble in Hanumangarh](image)

**Fig. 4.2 Market share of different brands of NPK soluble in Hanumangarh**
4.2 The market potential of micro nutrient and NPK soluble

4.2.1 Cropping pattern

It can be observed from the Fig. 4.3 that in cropping pattern of Hanumangarh region, in which wheat was a main crop contributing 49 per cent area and gram contribute 30 per cent of total area which is at second place. Then other crops, mustard and barley were other rabbit crops having 18 and 3 percent of total rabbit cultivated area respectively.

![Pie chart showing the distribution of different crops]

**Fig: 4.3 Distribution of different crops**

4.2.2 Purchasing points of micro nutrients and NPK Soluble

In the Hunumangarh region many purchasing point of micro-nutrients and NPK soluble are available in Taluka (Mandi), like HKB, Retailer/Dealers. During the survey noted that farmers are purchasing micro nutrients and NPK soluble from retailers and HKB. The share of purchasing of micro-nutrients and NPK soluble is discussed below.

4.2.2.1 Purchasing points of micro nutrients

It can be observed from the Fig. 4.4 that in Hanumangarh region, 75 per cent farmers were purchase micro nutrients from retailers/dealers and only 25 per cent
farmers were purchase micro nutrients from hariyali kisan bazaar (HKB). Here observed that only 25 per cent market share of HKB in micro nutrients business remaining part of business covered by other competitors (Retailers/ Dealers).

Fig. 4.4 Market share of HKB in micro nutrients business in Hanumangarh

4.2.2.2 Purchasing points of NPK soluble

It can be observed from the Fig. 4.5 that in Hanumangarh region, 85 per cent farmers were purchase NPK soluble from retailers/dealers and only 15 per cent farmers were purchase NPK soluble from hariyali kisan bazaar (HKB). Here observed that only 15 per cent market share of HKB in NPK soluble business remaining part of business covered by retailers/dealers.
Fig. 4.5 Market share of HKB in NPK soluble business in Hanumangarh

4.2.3 The market potential of micro nutrients in Hanumangarh district

Below table 4.2 indicate that Market Potential for micro nutrients of HKB in different crops in Hanumangarh district, if assuming the market share of HKB in micro nutrients business as 35 per cent, 45 per cent and 75 per cent then Potential will be 659796 kg, 848310 kg and 1413849 kg respectively.

Table 4.2 Market potential for micro nutrients in different crops in Hanumangarh district

<table>
<thead>
<tr>
<th>Crops</th>
<th>Cultivated area (Hac.)</th>
<th>Dose (kg/ha) of Micro nutrient</th>
<th>Potential for the HKB (as assumed 35 per cent market share) (kg.)</th>
<th>Potential for the HKB (as assumed 45 per cent market share) (kg.)</th>
<th>Potential for the HKB (as assumed 75 per cent market share) (kg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>247880</td>
<td>5</td>
<td>433790</td>
<td>557730</td>
<td>929550</td>
</tr>
<tr>
<td>Barley</td>
<td>14967</td>
<td>2.5</td>
<td>13096</td>
<td>16838</td>
<td>28063</td>
</tr>
<tr>
<td>Gram</td>
<td>154335</td>
<td>2.5</td>
<td>135043</td>
<td>173627</td>
<td>289378</td>
</tr>
<tr>
<td>Mustard</td>
<td>88991</td>
<td>2.5</td>
<td>77867</td>
<td>100115</td>
<td>166858</td>
</tr>
<tr>
<td>Total</td>
<td>506173</td>
<td></td>
<td>659796</td>
<td>848310</td>
<td>1413849</td>
</tr>
</tbody>
</table>
4.2.4 The market potential of NPK soluble in Hanumangarh district

Below table 4.3 indicate that Market Potential for NPK soluble of HKB in different crops in Hanumangarh district, if assuming the market share of HKB in NPK soluble business as 35 per cent, 45 per cent and 75 per cent then Potential will be 93317 kg, 119979 kg and 226626 kg respectively.

Table 4.3: Market potential for NPK soluble in different crops in Hanumangarh district

<table>
<thead>
<tr>
<th>Crops</th>
<th>Cultivated area (Hac.)</th>
<th>Dose (kg/ha) of NPK soluble</th>
<th>Potential for the HKB (Assumed 35 per cent market share) (kg.)</th>
<th>Potential for the HKB (Assumed 45 per cent market share) (kg.)</th>
<th>Potential for the HKB (Assumed 75 per cent market share) (kg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>247880</td>
<td>800 gm.</td>
<td>69406</td>
<td>89237</td>
<td>168558</td>
</tr>
<tr>
<td>Barley</td>
<td>14967</td>
<td>500 gm.</td>
<td>2619</td>
<td>3368</td>
<td>6361</td>
</tr>
<tr>
<td>Gram</td>
<td>154335</td>
<td>250 gm.</td>
<td>13504</td>
<td>17363</td>
<td>32796</td>
</tr>
<tr>
<td>Mustard</td>
<td>88991</td>
<td>250 gm.</td>
<td>7787</td>
<td>10011</td>
<td>18911</td>
</tr>
<tr>
<td>Total</td>
<td>506173</td>
<td></td>
<td>93317</td>
<td>119979</td>
<td>226626</td>
</tr>
</tbody>
</table>

4.3 The consumer demand and HKB’s portfolio

In the Hunumangarh region, many products were used as micro-nutrients and NPK soluble which are discusses above. During the survey, it was noted that many farmers were know about micro nutrients and NPK soluble and which compositions of micro nutrients and NPK soluble were preferred by farmers.

4.3.1 Consumers awareness about micro nutrients

It can be observed from the Fig. 4.6 that in the Hanumangarh region, 91 per cent farmers were well known about micro nutrients and remaining 6 per cent were unknown. Here observes that maximum farmers were well known about micro nutrients.
4.3.2 Consumers awareness about NPK soluble

It can be observed from the Fig. 4.7 that in the Hanumangarh region, 60 per cent farmers were well known about NPK soluble and remaining 40 per cent were unknown. Here observed that maximum farmers were unknown about NPK soluble as compare to awareness about micro nutrients.
4.3.3 Composition of micro nutrients and NPK Soluble are used by Consumers:

In the Hunumangarh region so many compositions of micro-nutrients and NPK soluble were used by consumers, which were discussed above. During the survey, it was noted that many farmers were used different compositions of micro nutrients and NPK soluble in the study areas, which are discussed below.

4.3.3.1 Composition of micro nutrients used by consumers

It can be observed from the Fig. 4.8 that in the Hanumangarh region, 70 per cent farmers were used Zn33%, 20 per cent farmers used mineral mixture and only 10 per cent farmers were used sulphour90%. In case of micro nutrients, here observed that maximum farmers were used mineral mixture for crops production.

Fig. 4.8 Share of different composition of micro nutrients used by consumers

4.3.3.2 Composition of NPK soluble used by consumers

It can be observed from the Fig. 4.9 that in the Hanumangarh region, 44 per cent farmers were used NPK 20:20:20 grade, 44 per cent farmers were used NPK 19:19:19 grade, only 6 per cent farmers were used 13:00:45 and 6 per cent farmers were used 0: 52:34 grade. The farmers were commonly used these compositions in wheat crop, because the study area is potential in wheat growing.
4.4 The gap filling in existing portfolio of HKB and consumer demand

In the study area the all over farmers were well known about Haryali Kisan Bazaar (HKB) and its products, services and working procedure. In some cases noted that few farmers were completely unknown about HKB.

It can be observed from the Fig. 4.10 that in Hanumangarh region, 95 per cent farmers were well aware about HKB and only 5 per cent farmers completely unaware about HKB.
4.4.1 Purchasing points of farmers

In the study area the all over farmers were well known about hariyali kisaan bazaar (HKB) and its products, services and working procedure. But maximum farmers were purchasing agri inputs and other products from retailers. Very less farmers were purchasing agri inputs and other products from HKB. The share of purchasing of agri inputs and other products from is given below:

It can be observed from the Fig. 4.11 that in study area, 70 per cent farmers were purchase agri inputs and other products from retailers/dealers and only 30 per cent farmers were purchase agri inputs and other products from hariyali kisaan bazaar (HKB).

![Pie Chart showing 30% from Retailers and 70% from HKB]

Fig. 4.11 Share of purchasing points of Agri- inputs by farmers

4.4.2 Factors responsible for less purchasing from HKB

In the study area of survey there several factors were noted which responsible for less purchasing from HKB by consumers. These factors are discussed below:

> **Cash based business:** Farmers do not have cash throughout the year and hence needs credit facility at the stores but the HKB’s business is completely depend on cash. So that farmers are less purchased micro nutrients and NPK soluble from other purchasing points.
➢ *Adathaia* and Relatives: Generally farmers are taking credit facilities from *Adathaia*. These are always recombined purchasing of agri-inputs from retailers, dealers and relatives.

➢ The prices of the products sold at HKB are not uniform and keep on changing, sometimes more than twice a day.

➢ A major portion of the customer base of HKB does not even know about HKB.

➢ The location of the store is not proper.
SUMMARY AND CONCLUSION
CHAPTER - V
SUMMARY AND CONCLUSION

In India agriculture has a long history dating back to ten thousand years. Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and logging accounted for 13.9 per cent of the GDP in 2011, employed 60 per cent of the total workforce and despite a steady decline of its share in the GDP, is still the largest economic sector and plays a significant role in the overall socio-economic development of India.

Agri-input marketing is an aspect of agricultural marketing which has been dealt with the marketing of farm inputs (like seeds, pesticides and fertilizers). Marketing of agri-inputs in rural markets are growing at above two times faster at present time than the earlier days. Today, rural market occupies a larger part of our economy. India is predominantly an agricultural economy. Seeds play a significant role in enhancing agricultural productivity.

5.1 To find out the major players’ in micro nutrients and NPK soluble business

a) Major players of micro nutrients and NPK soluble in study area, like Sriram Fertilizers & Chemicals, Chambal Fertilizer and Chemical Ltd., Rasiya Chemicals and Fertilizers, IFFCO, Taxas Ltd., T. Stone, Agri Agrowieght and Utam etc.

b) In the study area the use of micro nutrients in which maximum 20 per cent farmers are used Taxas, 15 per cent of SFC, 10 per cent of Utam, 10 per cent of CFCL, 10 per cent of T. Stone, 5 per cent of Agri Agrowieght and remaining 30 per cent by other companies products.

c) In the study area the use of NPK Soluble in which maximum 50 per cent farmers were used SFC (Shriram Fertilizers and Chemicals), 10 per cent of IFFCO, 10 per cent of RCF (Rashtriya Chemicals and Fertilizers), 10 per cent of CFCL (Chambal Fertilizers and Chemicals Ltd.), and remaining 20 per cent by other company’s products.
5.2 To find out the market potential of micro nutrient and NPK soluble

a) Cropping pattern of Hanumangarh region, in which wheat is a main crop contributing 49 per cent area and gram contribute 30 per cent of total area which is at second place. Then other crops, mustard and barley are other rabbit crops having 18 and 3 percent of total rabbit cultivated area respectively.

b) In study area 75 per cent farmers are purchase micro nutrients from retailers/dealers and only 25 per cent farmers are purchase micro nutrients from hariyali kisaan bazaar (HKB).

c) In study area 85 per cent farmers are purchase NPK soluble from retailers/dealers and only 15 per cent farmers are purchase NPK soluble from hariyali kisaan bazaar (HKB).

d) Market Potential for micro nutrients of HKB in different crops in Hanumangarh district, if assuming the market share of HKB in micro nutrients business as 35 per cent, 45 per cent and 75 per cent then Potential will be 659796 kg, 848310 kg and 1413849 kg respectively.

e) Market Potential for NPK soluble of HKB in different crops in Hanumangarh district, if assuming the market share of HKB in micro nutrients business as 35 per cent, 45 per cent and 75 per cent then Potential will be 93317 kg, 119979 kg and 226626 kg respectively.

5.3 To find out the consumer demand and HKB's portfolio

In the Hanumangarh region so many products are used as micro-nutrients and NPK soluble. During the survey so I am noted that how many farmers are know about micro nutrients and NPK soluble and which composition preferred in the survey region.

a) In study area 91 per cent farmers are well known about micro nutrients and remaining 6 per cent are unknown.

b) In study area 60 per cent farmers are well known about NPK soluble and remaining 40 per cent are unknown.

c) In Hanumangarh region, 70 per cent farmers are used Zn33%, 20 per cent farmers used mineral mixture and only 10 per cent farmers are used sulphur 90%.
d) In Hanumangarh region, 44 per cent farmers are used NPK 20:20:20 grade, 44 per cent farmers are used NPK 19:19:19 grade, only 6 per cent farmers are used 13:00:45 and 6 per cent farmers are used 0: 52:34 grade. The farmers are commonly used these compositions in wheat crop, because the study area is potential in wheat growing.

5.4 To find out the gap filling in existing portfolio of HKB and consumer demand

In the study area the all over farmers were well known about Hariyali Kisaan Bazaar (HKB) and its products, services and working procedure. But in some cases noted very few farmers noticed, these are completely unknown about HKB.

a) In Hanumangarh region, 95 per cent farmers were well aware about HKB and only 5 per cent farmers were completely unaware about HKB.

b) In study area, 70 per cent farmers were purchase agri inputs and other products from retailers/ dealers and only 30 per cent farmers were purchase agri inputs and other products from hariyali kisaan bazaar (HKB).

HKB's Strategies for Micro-nutrients and NPK soluble Selling

- Strong the distribution networks.
- Micro-nutrients and NPK soluble exclusive distributors are appointed.
- Better management of existence micro-nutrients and NPK soluble.
- Appointment new workers.
- Increasing promotional activities.
- Improved the weakness of existence micro-nutrients and NPK soluble and developing new products according to climating condition.
- Chang in pricing policies as reliable to consumers.
- Providing facilities to the consumers, like agricultural specialist, discount on products and credit facilities etc.
Suggestions/Marketing Strategies for HKB

➢ To increase the marketing activities at frequently basis e.g. Road show, trade show, free distribution of leaflets, advertisement in local newspaper, TV, field demonstration, farmer meeting etc.
➢ HKB should also provide the promotional offer to the farmers in different season like free coupon, free sampling, gifts etc.
➢ HKB should motivate the channel member by giving them incentives to dealers and promotion to sales executives.
➢ HKB should continue focus on the strategy, strength and weakness of its competitor other micro- nutrients and NPK soluble companies.
➢ HKB should also enhance the cash discount, rate of advance booking, liberal credit policy and profit margin to their distributors.
➢ HKB should improve their supply chain system by providing timely delivery to their dealers.
➢ HKB should arrange the field expert’s visit at farmer’s field at regular interval.
VII. REFERENCES


APPENDIX

1. Which product brands do you use?

2. What is the justification behind your choice?

3. Total Land Holdings
   - Tube-well irrigated
   - Canal irrigated
   - Non-irrigated
   - Total

4. Do you know anyone in the neighborhood who has purchased similar products?

5. What is the justification behind your choice?
CHAPTER – V11
APPENDICES

QUESTIONNAIRE FOR FARMERS

1. General Information:

1. Farmer’s Name:

2. Village:

3. District:

5. Block/Tehsil/

5. Total Land Holding:
   I. Tube-well irrigated: ......
   II. Canal Irrigated: ......
   III. Non-irrigated: ......
   IV. Total: ......

1. Do you know about Micro-nutrients and its uses?
   Yes { }                No { }

2. If yes, then what is the composition of Micro-nutrients?

   ____________________________________________________
   ____________________________________________________
   ____________________________________________________

3. Which product brand do you use?

   ____________________________________________________
   ____________________________________________________
   ____________________________________________________

4. What is the point of purchasing?

   ____________________________________________________
5. Do you know about HKB?
   Yes { }   No { }

6. If yes, then what is the reason not to purchase from HKB


7. Do you know about NPK Soluble and its uses?
   Yes { }   No { }

8. If yes, then what is the composition of NPK Soluble use?


9. Which product brand do you use?


10. What is the point of purchasing?


11. Do you know about HKB?
   Yes { }   No { }

12. If yes, then what is the reason not to purchase from HKB


