EVALUATION OF BRAND PROMOTION STRATEGIES
ADOPTED BY BAYER CROP SCIENCE LIMITED IN
MORADABAD DISTRICT

PROJECT REPORT

Submitted to

G.B.Pant University of Agriculture and Technology
Pantnagar-263145 (U.S.Nagar)
Uttarakhand, India

Submitted by:
SIMARPREET SINGH
Id. No. : 48034

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF

Master of Business Administration (Agribusiness)

June, 2016
Acknowledgment

This report is outcome of all the well wishes, guidance and encouragement of many individuals who if listed will take pages. It is our humble effort and privilege to thank and express our gratitude towards them. Mere words may not be sufficient to express my heartfelt gratitude to the helping hands and mind so benignant to me.

I with immense pleasure take the privilege to express my profound sense of reverence, gratitude and indebtedness to my advisor Dr. M L Sharma, Associate professor, CABM, Pantnagar, for his most competent and illuminating guidance, keen interest, inspiring motivation, enthusiastic incitement and thought provoking suggestions in planning, executing the research works and producing this manuscript. I extend my sincere gratefulness to the member of advisory committee Dr. Ashutosh Singh and Dr. Jayant Gautam for their valuable academic help, guidance and support during the course of investigation.

I am grateful to Dr. Devendra Kumar Dean College of agribusiness management, Dr. N.S. Murthy, Dean PGS, G.B Pant University of Agriculture & Technology for providing necessary facilities, technical and administrative support for conductance of this research work.

I am thankfully obliged to, Mr. Suarabh Singh, Dr. Mukesh Panday and Mr. Nirdesh Singh for rendering the help in all academic matters.

I am also thankful to all the college staff for their kind help and support during my entire research work.

I express my thanks to all the respondents for their valuable time and help during the course of study. I also wish to express my gratitude and thankfulness to all my friends for all the help rendered to me.

I immensely pleased to express my heart full thanks and gratitude to my parents and for their great affection and moral support. Last but not the least we bow our heads to the God for blessing us with enough patience, endurance and strength to accomplish the endeavour.

Date: June 10, 2016

Place: Pantnagar
CERTIFICATE

We the undersigned members of the Project Advisory Committee of Mr. Simarpreet Singh, l.d No. 48034 a candidate for the degree of Master of Business Administration (Agribusiness), agree that project report entitle “Evaluate the” may be submitted in partial fulfilment of the requirement of the degree.

(M.L. Sharma)
Chairman
Project Advisory Committee

(Jayant Gautam)
Member

(Ashutosh Singh)
Member
EXECUTIVE SUMMARY

The present study “Evaluation of Brand Promotion Strategies adopted by Bayer Crop Science Limited in Moradabad District” was conducted in these following block of Moradabad i.e. Moradabad, Munda Pandey. The exploratory reasearch was conducted with an objective to gather the maximum possible information that will be helpful to analyse the consumer buying behaviour and pattern of purchasing pesticide, also identify brand promotion strategies followed by Bayer Crop Science Ltd. Paddy and sugarcane in kharif and wheat in rabi were the major crops in this area. Apart from this pulses and vegetables are the seasonal crops grown in this area.

Major of the farmers were having an income upto 2 lakhs. Farmers belonging to age group of 35-45 constitute the majority of the farmers. Insecticides were found to be the most used pesticide products followed by herbicide and fungicide. It was also found that the occurrence of pest was a forcing factor for the farmers to buy pesticides. It was also observed that the farmers choose the product they have used earlier. Dealers advice is the most important factor which convince a farmer to buy a particular product. As far as different promotional activity on farmers, buying behaviour is concerned farmer meeting, demonstration and field day were identified as major influences. We also seen that DuPont is the most trusted company followed by Crystal and Bayer

Most of the promotional activity was done for Brand Extension in Moradabad region. Most favorable mass communication strategies used by Bayer crop science were Pamphlets\Posters, Hoarding\ Billboards and Farmer Meeting. Bayer Crop Science had upper hand on its competitors because of its product portfolio, sales strategy and after sales strategies.
<table>
<thead>
<tr>
<th>S.No.</th>
<th>PARTICULARS</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACKNOWLEDGMENTS</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>EXECUTIVE SUMMARY</td>
<td>II</td>
</tr>
<tr>
<td></td>
<td>LIST OF EXHIBITS</td>
<td>IV</td>
</tr>
<tr>
<td>1</td>
<td>INTRODUCTION</td>
<td>1-4</td>
</tr>
<tr>
<td>1.1</td>
<td>Background</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Work already done</td>
<td>3</td>
</tr>
<tr>
<td>1.3</td>
<td>Problem Statement</td>
<td>4</td>
</tr>
<tr>
<td>1.4</td>
<td>Objectives of study</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>INDUSTRY DISCRPTION</td>
<td>5-8</td>
</tr>
<tr>
<td>3</td>
<td>METHODOLOGY</td>
<td>9-11</td>
</tr>
<tr>
<td>4</td>
<td>RESULTS</td>
<td>12-22</td>
</tr>
<tr>
<td>5</td>
<td>RECOMMENDATIONS FOR ACTIONS</td>
<td>23</td>
</tr>
<tr>
<td>6</td>
<td>REFERENCE</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>ANNEXUR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VITA</td>
<td></td>
</tr>
</tbody>
</table>
## LIST OF EXHIBITS

<table>
<thead>
<tr>
<th>Exhibit No.</th>
<th>PARTICULARS</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Age group</td>
<td>12</td>
</tr>
<tr>
<td>4.2</td>
<td>Income</td>
<td>12</td>
</tr>
<tr>
<td>4.3</td>
<td>Education Level</td>
<td>13</td>
</tr>
<tr>
<td>4.4</td>
<td>Current scenario of competitor</td>
<td>13</td>
</tr>
<tr>
<td>4.5</td>
<td>Bayer’s product awareness</td>
<td>14</td>
</tr>
<tr>
<td>4.6</td>
<td>Level of use of category of pesticide</td>
<td>15</td>
</tr>
<tr>
<td>4.7</td>
<td>Compelling factor for purchase of pesticide</td>
<td>15</td>
</tr>
<tr>
<td>4.8</td>
<td>Source of information</td>
<td>16</td>
</tr>
<tr>
<td>4.9</td>
<td>Exposure to Newspaper</td>
<td>17</td>
</tr>
<tr>
<td>4.10</td>
<td>Preference for pesticide product</td>
<td>17</td>
</tr>
<tr>
<td>4.11</td>
<td>Parameters for purchasing decision of farmers</td>
<td>18</td>
</tr>
<tr>
<td>4.12</td>
<td>Promotional tools influencing the purchasing decision</td>
<td>18</td>
</tr>
<tr>
<td>4.13</td>
<td>Sales promotional tools</td>
<td>19</td>
</tr>
<tr>
<td>4.14</td>
<td>Delivery time of product</td>
<td>20</td>
</tr>
<tr>
<td>4.15</td>
<td>Mass promotional activity</td>
<td>20</td>
</tr>
<tr>
<td>4.16</td>
<td>Dealer Suggestion for promotional activity</td>
<td>21</td>
</tr>
<tr>
<td>4.17</td>
<td>Bayer crop preference</td>
<td>22</td>
</tr>
</tbody>
</table>
1. Introduction

1.1 Background

The global population currently stands at 7.2 billion, and is expected to rise to 9.3 billion by 2050. This will lead to an increased demand for food. The dietary needs in emerging countries will change as economy grows. To meet the increased food & nutritional need of growing population a sustainable approach is required that puts thrust on increasing productivity against the background of lower yields & decreasing farm sizes. It requires a push from all stakeholders— the farmer, the government and the agrochemical/agro industry collectively so that the changing needs of the society are met. Around 25 per cent of the global crop output is lost due to attacks by pests, weeds and diseases which don’t augur well for farming given the critical challenges ahead and thus agrochemicals have an increasing role to play.

India is the second most populous country about 1.25 billion after China in the world. According to United Nations statistics, India will surpass China to become the world's most populous country by 2022. With the economic growth, India is likely to become the 3rd largest economy in the world by 2030 accompanied by a rise in urbanization levels which will lead to a change in dietary needs. To sustain the growing population's food and nutritional needs, India will have to adopt the sustainable measures in agriculture sector. Although yield per hectare has doubled in the past years due to increased use of hybrid seeds, fertilizer, crop protection chemical, etc. major challenge to increase productivity still exists. These include mainly the risk of land degradation, fall in the per capita arable land and increasing water scarcity. Even considering that we have different climatic conditions and cropping patterns is also underscored with similar macro trends.

The first green revolution was fairly successful in putting the country on a path to self-sufficiency of food grains. However it had certain limitations in that it could not help achieve absolute sustainability in agriculture.

The Second Green Revolution would strive to correct in full or partial measure the shortcomings of the First Green Revolution. This would require a holistic approach to farming in India which would include adopting measures on various fronts. These would mainly include:

1. Reducing dependency on monsoons with better irrigation/water harvesting methods
2. Developing high yields variants of other crops besides food grains
3. Educating the farmer on right agricultural practices
5. Integrated pest management techniques
6. Bringing in technology & mechanization to consolidate fragmented farmlands;
7. Developing measures such as crop insurance and generating alternate sources of livelihood to mitigate risk to protect farmers

Crop protection chemicals will also play a major role in the new phase of Second Green Revolution. The role of crop protection chemicals is not limited to protection; they help in yield enhancement as well. Use of crop protection chemicals can increase crop productivity by 25-50 per cent, by mitigating crop loss due to pest attacks. It is estimated that almost 25 per cent of world’s agricultural production is lost due to postharvest pest attacks. Thus, crop protection chemicals are also very essential to ensure food and nutritional security. Traditionally, agrochemicals have been manufactured through chemical synthesis but lately biochemical processes are also gaining popularity. Usually, agrochemicals involve an active ingredient in a definite concentration along with adjuvant which enhances their performance, safety and usability. The agrochemicals are diluted in recommended doses and applied on seeds, soil, irrigation water and crops to prevent the damages from pests, weeds and diseases.

The crop protection chemicals can be broadly classified into five types:

1. **Insecticides**: Insecticides provide protection to the crops from the insects by either killing them or by preventing their attack. They help in controlling the pest population below a desired threshold level.

2. **Fungicides**: Fungicides protect the crops from the attack of fungi and can be of two type’s protectants and eradicates. Protectants prevent or inhibit fungal growth and eradicates kill the pests on application.

3. **Herbicides**: Herbicides also called as weedicides are used to kill undesirable plants. They can be of two types - selective and non-selective.

4. **Bio-pesticides**: Bio-pesticides are new age crop protection products manufactured from natural substances like plants, animals, bacteria and certain minerals. They are eco-friendly, easy to use; require lower dosage amounts for same performance as compared to chemical based pesticides.

5. **Others (Fumigants, Rodenticides, Plant growth regulators etc.):** Fumigants and rodenticides are the chemicals which protect the crops from pest attacks during crop storage. Plant growth regulators help in controlling or modifying the plant growth process and are usually used in cotton, rice and fruits.

There is very rigid rivalry in the market. Companies are trying to increase their sales as well as market share. Companies are introducing the new eco-friendly and less harmful but
effective product through R & D and making lots off efforts to educate the farmers about the right and judicious use of pesticides. For getting success in this competitive era it is very much important to maintain an appropriate marketing mix tools because the precise promotional tools play very important role in the increasing sales of any company. Moradabad is selected for the study because of it has main area under vegetables and rice. It appears to be profitable market for pesticide.

1.2 Work already done

Kotler Philip (2009) in Marketing Management suggested that consumer passes through five stages: problem recognition, information search, evaluation of alternatives, purchase decision and post purchase behaviour. The buying process starts long before the actual purchase and has consequences long afterward.

Variawa (2009) analysed the influence of packaging on consumer decision making process for Fast Moving Consumer Goods. The aim of the research was to analyse the impact of packaging for decision making processes of low-income consumers in retail shopping. The findings of the research indicate that low-income consumers have more preferences towards premium packaging as this can also be re-used after the product has been consumed. It has been proven by the findings of the research that low-income consumers have greater brand experience from the purchase of ‘premium’ products when compared to their experience from purchasing ‘cheap’ brand products.

FAO and WHO (2010) stated that advertising is the promoting of the sale and use of pesticides by printed and electronic media, signs, displays, gift, demonstration or word of mouth. It is a powerful means of influencing purchasing decisions and building recognition of or loyalty for a brand or product name. When promoting pesticides, it is important to present accurate product information and emphasize the importance of user competence.

Patel (2012) concluded that around 80 and 70 per cent farmers of Umargam and Valsadtaluka of Valsad district were applying chemicals before introduction of disease respectively. About 85 per cent farmers of Kapradataluka prefer to purchase product with lower price and 64 and 78 per cent farmers of Valsad and Navsari district prefer to purchase product with less impurities respectively. Therefore, company should produce their product with economical price.

Mishra et al. (2013) concluded that the promotion of products plays a very important role in
business. It increases not only sale but also increase awareness about the product. In case of agriculture, it is of prime importance because farmers always believe what they see. Bio fertilizers are the part of integrated nutrient management but still it is not used by farmers because of lack of awareness about its use, benefits and other related issues. Due to Ad campaigns farmers are aware of the various brands and the companies. The most desired media by the farmers is found out to be the pamphlets, brochures, newspaper, magazines and hoardings. Sales promotion in agrochemicals is a key ingredient in marketing.

Vikiet al. (2014) analysed the farmer buying behaviour on pesticide product. The aim of research was to analyse farmer buying pattern, perception about pesticide and factors affect farmer’s buying which make decisions to buy the particular Pesticide. The finding of the research is that the number of farmers pesticides were purchased from was limited. Farmers did not purchase their pesticides much before the time they used them. Farmers still depend on the written media for information. The newspaper and farm magazine are important information sources’ in the decision-making process of farmers.

FICCI (2015) reported that Indian crop protection market is dominated by Insecticides, which form almost 60 per cent of domestic crop protection chemicals market. The major applications are found in rice and cotton crops. Fungicides and Herbicides are the largest growing segments accounting for 18 and 16 per cent, respectively of total crop protection chemicals market respectively. Currently bio-pesticides constitute only 3 per cent of Indian crop protection market.

1.3 Problem statement

Bayer Crop Science offers an outstanding range of products and extensive service backup for modern, sustainable agriculture applications. To sustain its market share, the Company is focusing heavily on after sales services and technical support to customers, but still from the last three years (2012 to 2015) despite having focused on above activities the total sales of Bayer Crop Science in the territory of Moradabad has gone down significantly. Hence there is a need to identify the possible reasons for this decline in sales and also to identify the promotional strategies that have been adopted by the major competitors.

1.4 Objectives

1. To identify Brand promotional strategies followed by Bayer Crop Science Ltd. in District Moradabad.
2. To study the consumer buying behaviour and pattern for purchasing pesticide.
3. To suggest the suitable promotional strategies for Bayer Crop Science Ltd.
2. INDUSTRY DISCRIPTION

2.1 Pesticide Industry

A pesticide is any substance or mixture of substance intended for preventing, destroying, repelling, or mitigating any pest. The pesticides (of which insecticides constitute an important segment) or the agrochemicals industry (hereinafter referred to as the PAC industry) primarily consists of insecticides, herbicides and fungicides. While farmers have been doing pest management since the onset of agricultural production, the discovery of pesticide properties of synthetic chemicals in the middle of the 20th century has transformed agriculture. DDT was discovered as an insecticide in and was used extensively in agriculture, and for public health programs. Subsequently, other insecticides, herbicides and fungicides were developed.

Their large scale use started in farming in industrialized countries, resulting in large increases in production and/or cost savings on labour. The first Green revolution, which began in the 1960s made high-yielding crop varieties available to developing countries, especially in Asia. Exploitation of the production potential of these varieties stimulated the use of fertilizer and pesticide. This dynamic led to large increase in food production in many countries but also to growing pesticide use.

PACs provide vital inputs to crop protection and act as a vital input to agricultural produce. In a world-wide study of eight crops, it has been estimated that the global harvest losses due to pests was about 42 per cent of attainable production. Higher yields can be assured by reducing crop losses caused by weeds, pests and insects. PAC has assisted in controlling pests and maintaining the availability of low cost and high quality food. They also allow for improved storage and distribution of crops, fruit and grains. The importance of PACs in India derives from the fact that the India is an agrarian society. Agriculture is the backbone of the Indian economy and contributes 15.7 per cent of India’s GDP. Nearly 70 per cent of the country’s work force derives its livelihood from agriculture. Higher crop productivity can be achieved through high grade crop protection, and the challenge is to prevent or reduce pest related crop losses, which are presently estimated at around 20-25 per cent of crops sown, i.e approximately Rs.250-300 billion per annum.

Pesticide use significantly contributes for enhancing agricultural production and also helped to reduce the problems of vector bone diseases. On the other hand, failure to adhere to the safety norms at various stages of pesticide production and use sometimes non availability of credible information has caused serious concerns in the society. There are health risks
associated with pesticides. By their very nature, most chemical based PACs create some risk of harm to humans, animals or the environment because they are designed to kill or otherwise adversely affect living organism. These risks include on farm ingestion by workers, discharge of toxic chemicals into the air and water, and consumption of foods that contain pesticide residues by consumers. Laboratory studies show that pesticides can cause health problems, such as birth defects, nerve damage, cancer and other effects that might occur over a long period of time. However, these effects depend on how toxic the pesticide is and how much of it is consumed. Some pesticides also pose unique health risks to children. At the same time, pesticides are one of the vital ingredients of crop protection and enhancing agricultural productivity.

2.2 Categories of Pesticides

Pesticides are often referred to according to the type of pest they control. In such a classification, pesticides are normally categorized into the following major categories.

- Insecticide act against insects which feed on crops, leaves, roots and other parts of plants
- Herbicide (also known as weedicides) act against weeds or unwanted plants complete with the crop for nutrients, light, water, space
- Fungicides act against bacteria, fungi, virus and mycoplasma which cause various diseases in plants

2.3 Chemical Pesticides Comprise

1. Organophosphate Pesticide were developed during the early 19th century, but their effects on insects, which are similar to their effects on humans, were discovered in 1932. Some are very poisonous (they were used in World War 2 as nerve against). However, they usually are not persistent in the environment.

2. Carbonate pesticides

3. Organochlorine Insecticides were commonly used in the past, but many have been removed from the market due to their health and environmental effects and their persistence (e.g. DDT and chlordane).

4. Parathryoid Pesticides were developed as a synthetic version of naturally occurring pesticide pyrethrin, which is found in chrysanthemus. They have been modified to increase their stability in the environment. Some synthetic pyrethroids are toxic to the nervous system.

2.4 Indian Pac Industry

The Indian PAC industry primarily comprises of insecticides, herbicides, weedicides. Insecticides dominate consumption with around 61 per cent of estimated consumption of PAC followed by fungicides (18%), herbicides(16%) and others (5%). Insecticides are used
mainly for rice, cotton and vegetables; herbicides for rubber, oil palm, tea, and coffee and fungicides for tobacco, vegetables and bananas.

The per hectare consumption of pesticides in India is estimated at 0.5kg. However this is not uniform. It varies vastly across the country with the agro ecological settings, cropping pattern, irrigation facilities, intensity of pests and diseases, resistance and resurgence of insect pests etc. Pesticide use is particularly high in regions with irrigation facilities and also in those areas where commercial crops are grown.

Cotton, paddy, vegetables and fruits are grown in 32 per cent of the cultivated area and account for over 80 per cent of the pesticide consumption in the country. While cotton is planted on about 4.5-5 per cent of the total cultivated area (on about 7.5 million hectares or million ha), it accounts for about 45 per cent of pesticide consumption in INDIA, followed by rice (23%), jowar(9%), vegetable (7%) wheat(6%), pulses(4%).

At present, 181 pesticides have been registered in India. A Registration Committee (RC) has been constituted under section 5 of the Insecticide act, 1968 to register insecticide after scrutinizing formulae, verifying claims of efficacy and safety to human beings and animals, specially the precautions against poisoning and any other function incidental to these matters. To assess efficacy of the insecticides and their safety to human beings and animals, the RC has evolved exhaustive guidelines/data requirements which inter-alia includes residue in crops on which the insecticides are intended to be used. The ones lies with the importers/manufacturers to generate data relating to the insecticides for which registration are sought. The government of India has been reviewing the continued use of the registered pesticides at periodical intervals by consulting expert committees. Based on the recommendation of these expert committees, the GoI has refused registration for 18, banned 27 technical grade pesticides, 4 formulations and restricted the use of 10 pesticides in the country. However, a large number of pesticides that fall under the extremely hazardous category of 1A & 1B of World Health Organisation classification are yet to be phased out or banned despite recent reports linking some of them responsible for serious health hazards like cancer, congenital malformation, and abnormality in reproductive system etc. Such pesticides, still in use include

a) Extremely hazardous- Aldicarb, Methomyl, Monocrotophos, Phorate, Phoshamidon.

b) Highly hazardous- Carbofuran, Dichloves, Dimethoate, Endosulphan, Ethion, Fenthion, Fenvalerate, Methyl parathion, Phosalone and Triazophos.
2.5 Global Market for Pesticides

The global crop protection market is fairly consolidated with top nine companies accounting for over 80 per cent of the market. Syngenta, Bayer and BASF are the market leaders in the global crop protection market. Global crop protection market is characterized by large number of mergers and acquisitions in the recent years. Several large companies have consolidated their presence in the existing geographies or ventured into newer areas through acquisitions of local companies. Some of the recent acquisitions in 2013 include acquisition of ISEM's fungicide technologies valifenalate by Belchim Crop Protection, acquisition of Alpha Pesticides (Britain) by De Sangoosse Group's and acquisition of Plant Syence by Verdesian Life Sciences. Another major acquisition happened in 2011 when United Phosphorus Limited acquired 51 per cent stake in Brazil based DVA Agro Do Brasil from Isagro (Italy) to consolidate its presence in distinguished Brazilian Market. The global market for chemical pesticides/agrochemicals was estimated at around US$26.71 billion in 2003. Herbicides comprised 44 per cent of the world market, followed by insecticides (27%), fungicides (20%), and other (9%). The market increased by 6.2 per cent during 2003. In the period since 1990, the world market has increased from US$23.17 billion, at an annual average of 1.1 per cent.

Market conditions that prevailed in 2003 were far more favourable than in the recent past, and if it had not been for the drought that affected Northern European countries, the industry would have recorded higher growth. Apart from the drought in Northern Europe the major factor that affected the market were a general improvement in commodity prices (except in rice) that benefitted farm incomes in the major developed markets; significant economic improvement in Latin America that gave farmers increased access to credit and hence ability to purchase agrochemicals; recovery from drought in Canada, India, Australia and much of Asia, and the 2002 Farm Act in the US and the mid-term common agricultural policy (CAP) reform in the European Union that gives farmers a greater surety in their income position in the future.

On the negative side, increasing generic competition and price reductions reduced values; further rice average reduction and competitive market situations resulted in a continuation of the market downturn in Japan and a continued increase in GM averages in value being taken from the conventional crop protection market, particularly the herbicides sector.
3. METHODOLOGY

Research Methodology deals with a systematic and scientific methods that can be adopted to solve research problems. Methodology is a crucial step in any research and its findings. The present study was carried for finding out promotional strategies for pesticides.

3.1 Research Design

Exploratory research design was undertaken for the study considering the scope and nature of study. The major objective of this study was to find out the strategies of Bayer Crop Science Ltd. in order to lead the market and to differentiate itself from its competitors in Moradabad. Identifying farmers need and difficulties faced by the dealers/retailers in the Moradabad market.

3.2. Sources of data

Both primary and secondary data sources of information were used for the study.

Secondary Data: The secondary data was collected from various government publications, magazines, newspaper, company literature, websites and reports.

Primary Data: The primary data was obtained from the farmers and dealers/retailers involved in agrochemical.

3.3 Sampling Procedure

Multistage sampling used to select blocks, villages, dealers/retailers and customers. At first stage out of eight blocks two blocks were selected randomly, from each block four villages were selected randomly. From each village ten farmers were selected purposively. Ten dealers/retailers were selected for the study.

3.4. Area of study: Moradabad District

3.5. Sampling plan:

3.5.1 Sampling unit: The sampling unit consisted of 80 Farmers and 10 Dealers/Retailers selected randomly from 2 blocks Moradabad and Munda Pandey District Moradabad.
Sampling procedure

3.5.2 Sample size: Out of 8 blocks of Moradabad 2 blocks were selected consisting of 4 villages of each block through random sampling

<table>
<thead>
<tr>
<th>S. No</th>
<th>Blocks</th>
<th>No. of Villages</th>
<th>Sample Respondent (Village)</th>
<th>Sample Respondent (Farmers)</th>
<th>Sample Respondent (Dealer/Distributor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Moradabad</td>
<td>49</td>
<td>4</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Munda Pandey</td>
<td>68</td>
<td>4</td>
<td>40</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: www.village.nic.in
3.5.3 Sampling Technique:
- Simple random sampling for selection of blocks
- Simple random sampling for selection of villages
- Purposive sampling for selection of customers

3.6. Research Instrument

Data was collected through personal interviews with customers & dealers/retailers with the help of well-structured questionnaire having both open ended as well as closed ended questions.

3.7. Analytical Tools

The data was analysed through appropriate statistical tools with the help of excel sheet. Statistical tools like averages and percentages were used on the data collected from the farmers and dealers/retailers during the survey. The observations and results were presented with the help of bar graphs and pie charts.
4. RESULTS

The results of the present study are discussed under the following headings:

4.1 Age group

Maximum respondents (44 %) belonged to age group of 36-45 years followed by 25 per cent of the respondents belonged to 26-35 years, 21 per cent of the respondents belonged to 46 years or above and 10 per cent of the respondents belonged to the age group of 26-35 years.

Exhibit 4.1: Age group of farmer

4.2 Income

Income is an important demographic factor that determines the purchasing power of consumer. It was found that 42 per cent of the farmers had annual income below 2 lakhs, 28 per cent of the farmer had annual income 2 to 5 lakh only 9 per cent of the farmers were having annual income above 10 lakhs. Exhibit 4.2 shows the percentage of farmers belonging to various income groups.
**Exhibit 4.2: Yearly Income of farmer**

**4.3 Education Level**

It was observed that 39 per cent of farmers had Higher Secondary School, followed by 29 per cent Primary School, 21 per cent Illiterate and only 11 percentage are graduated.

**Exhibit 4.3: Education Level in this region.**

**4.4 Current Scenario of Competitors in the region**

The given bar graph represents the company product preference. There were about twenty three registered Companies working in the area. The study found out DuPont to be the biggest player having a share of 22 per cent out of the total market share. Next to DuPont is Crystal with 20 per cent and Bayer crop science with 16 per cent occupying the second and third largest share in the region.
4.5 Bayer Crop Science Products Awareness

Awareness regarding Regent, Confidor, Antracol, Oberon, Fame and Nativo Brand products of Bayer Crop Science was surveyed. It was found that 86 per cent farmers were aware about Regent and only 29 per cent farmers were aware about Oberon. Exhibit 4.5, shows the reader per cent of various Bayer products awareness.

Exhibit 4.4: Company’s product preference

Exhibit 4.5: Bayer Product awareness
4.6 Level of use of categories of pesticides

Pesticides is a broad group including fungicides, herbicides, rodenticides, insecticides etc. these pesticides are used for different purposes like insecticides for insect infestation, rodenticide for rats, herbicides for weeds.

Exhibit 4.6 shows that most frequently used pesticide is insecticide i.e. 86 per cent followed by fungicide 64 per cent and the least used by farmers is rodenticide i.e. 23 per cent.

![Exhibit 4.6: Consumption of pesticides](image)

4.7 Compelling factors for purchase of pesticides

Pests cause heavy damage to the crops. In order to protect the crop farmers use the pesticides. It was found that most of the farmers (76 %) purchase the pesticides at the occurrence of the disease or presence of pests. About 20 per cent of the farmers used pesticides merely as preventive measure i.e. without occurrence of any sort of disease or insects. It was also found that only 8 per cent of the farmers used the pesticides because of dissatisfaction with the current practices.
4.8 Source of information

Advertisement is the most visible element of communication mix because it makes use of the mass media i.e. newspaper, television, radio, hoarding, pamphlets. In case of agrochemical dealer, peer group and demonstration are used comparatively higher than television or radio. Exhibit 4.8 shows the different source of information of agrochemicals for farmers.
4.9 Exposure to Newspaper

To maximize overall awareness, the advertising must reach the maximum number of target audience. Large budget achievers high coverage and smaller budget limits the ambitions of the advertiser, newspaper with maximum reader should be selected to ensure the maximum visibility of the advertisement, and Amar Ujala has the 34 per cent reader followed by Dainik Jagaran and Hindustan with 25 per cent and 19 per cent respectively. Exhibit 4.9, shows the reader per cent of various newspaper in this region.

![Exhibit 4.9: Expose of Newspaper](image)

4.10 Preference for pesticide products:

There were various factor which influenced the farmers purchase decision of a particular product. Exhibit 4.10 shows that the most important factor which makes the product preferred was previous experience (26%) followed by peer group (23%) and Brand was a least preference of farmer 12 per cent.

![Exhibit 4.10: Factor which influenced the farmer purchase decision](image)
4.11 Parameters for purchasing decision of farmers:

Farmers take purchasing decision regarding any product after concerning various sources. Exhibit 4.11 showed that dealer’s advice was most important parameter while purchasing a pesticide. It was also found that the farmers were price sensitive. The parameter which affected the least was the availability of the product.

Exhibit 4.11: Parameters for purchasing decision of farmers

4.12 Promotional tools influencing the purchase decision

Promotion means highlighting the name of the company or the company products among the customers in such a way that it will get well set in their mind and recalling of their company name and product should be the first when they have to use any particular product. This promotion helps to increase the customer base as well as increase the sale of the products.

Exhibit 4.12 shows that most effective promotional strategy was field day and demonstration followed by farmers meeting. The least effective promotional tool was found out to be the company’s employee.
Exhibit 4.12: Promotional tools influencing the purchase decision

4.13 Sales Promotion schedule

In using sales promotion, when to put the program into action is very important. Therefore, scheduling must be done keeping in view the needs of consumer. Among the choices available, only few are preferred most. The timings at which sales promotion are scheduled is presented through exhibit: 4.13. It shows that 43 per cent of the companies did the advertisement at time of brand expansion. Further 29 per cent of the companies went for advertisement when they faced strong competitors in market. It was also seen that the least advertisement is done seasonally.

Exhibit 4.13: Sales Promotion schedule
4.14 Delivery time of product:

It was found that for most of the customers the delivery of the product is always timely. It was also seen that 10 per cent of the customer didn’t get the product on time.

![Pie chart showing delivery time distribution]

**Exhibit 4.14: Delivery time of product**

4.15 Mass promotional activity

Mass communication used for impact creation were Pamphlet, Hoarding, Radio, Newspaper Farmer meeting, T.V advertisement

Impact creation is the qualitative value of an exposure through a given medium. The various medium used in advertising of agrochemicals are Pamphlet, Hoarding, Radio, Newspaper, Farmer meeting etc. Exhibit 4.15 shows that pamphlets and posters are preferred most by Bayer Crop Science followed by hoardings and billboards. The least used promotional activity is radio.
4.16 Dealer Suggestion for promotional activity

Out of the various activities Dealer suggests Demonstration/field day is the best activity for Bayer product followed by tea party, it is easy and best way to communicate with farmers.
4.17 Bayer Crop preference by Distributer

The customers liked the product portfolio of Bayer crop science the most followed by company promotional strategy and after sales services. Distributor and dealer schemes were least liked by the customers.

Exhibit 4.17: Bayer Crop preference by Distributer
6. RECOMMENDATIONS AND ACTION

1. More awareness needs to be spread about Oberon and Fame as they respondents were least aware about them. These are the Bayer Crop Science Brand products and only 29 per cent farmers aware about Oberon and 36 per cent aware about fame.

2. More number of dealers should be contacted and we should convince them to use our products as 29 per cent of the respondent said that they follow dealer’s advice before using any product.

3. About 26 per cent farmer preferred those products which they use earlier. So, the company must try that maximum number of respondents should be satisfied by the product at first usage so that they can follow Bayer product.

4. Give advertisement in Local Newspaper such as Amar Ujala maximum no. of farmer read Amar Ujala news paper.

5. Company should go for more field demonstration as the farmers are mostly influenced by it.

6. The company must continue to improve its product portfolio and dealer/distributor schemes so that distributers feel more comfortable.

7. As per discussion with dealer, Trading and Government subsidy is a big issue Because of these factors there is a major price fluctuation in products which shifts the sales of products, so company has to make a strong policy for control on trading.
6. REFERENCE

1) **FICCI. (2015).** A report on Indian Agro Chemical Industry, Ushering in the 2\textsuperscript{nd} Green Revolution: Role of Crop Protection Chemicals, pp.1-49.


5) **Variawa. (2009).** Buying behaviour and decision-making criteria of base of the pyramid consumers; the influence of packaging on fast moving consumer goods customers brand experience, Gordon Institute of Business Science, University of Pretoria, South Africa. pp.47.


10) **Web Portal:**
    
    www.village.nic.in 

    on 05/05/2015
FARMERS QUESTIONNAIRE:

Name of the Respondent: ________________________________

Name of District : ________________________________

Name of Village : ________________________________

Land Holding : ________________________________

Age : ________________________________

Q2) What is your yearly income?
   a) Upto 2 lakh
   b) 2 to 5 lakh
   c) 6 to 10 lakh
   d) More than 10 lakh

Q3) What is the highest level of education you have completed?
   a) Primary School
   b) Higher Secondary School
   c) Graduation
   d) Illiterate

Q4) Which Company’s product do you prefer most?
   a) DuPont
   b) Bayer
   c) UPL
   d) Insecticides India Limited
   e) Crystal
   f) BASF

Q5) Which pesticide product do you use? a) Insecticide
b) Fungicide
c) Rodenticide
d) Herbicide
e) Other

Q6) What are the factors that force you to purchase pesticide?
   a) Occurrence of disease/presence of pests
   b) Preventive measure
   c) Dissatisfaction with current pesticide

Q7) Source of information?
   a) Advise of the Dealer
   b) Peer Group
   c) Demonstration/Field Day
   d) Company Employ
   e) Pamphlets/Poster
   f) T.V./ Newspaper
   g) Other

Q8) Which newspaper do you read?
   a) Amar Ujala
   b) Hindustan
   c) Danik Jagran
   d) Other
   e) No one

Q9) Why do you prefer a particular pesticide over other option available?
   a) Brand
   b) Price
   c) Prior experience
   d) Peer group
   e) Product feature
Q10) How do you prioritize the following factors that affect the buying of pesticide

1  2  3  4

a) Company’s Name
b) Product Quality
c) Packaging
d) Price
e) Value offered by the product
f) Availability
g) Dealers advise
h) Promotional efforts

Q11) Among the various Promotional tools used in this region, which one do you prefer?

a) Company Employ
b) Campaign Van
c) Field Day/ Demonstration
d) Farmer Meeting
e) Literature
f) POP displays

Q12) Are you aware about following Bayer Crop Science Product

a) Regent
b) Confidor
c) Antracol
d) Oberon
e) Fame
f) Nativo
DISTRIBUTOR/ DEALER QUESTIONNAIRE

Shop Name: ________________________________

Owner Name: ______________________________

Total Turn Over: ____________________________

Bayer Turn Over: ____________________________

Q1) How often is advertising done in this region?
   a) Seasonally
   b) New product launch
   c) Strong competitors
   d) Brand Extension

Q2) Do you get Bayer product on time?
   a. Always
   b. Sometime
   c. Never

Q3) Means of mass communication strategy adopted by Bayer Crop Science?
   a) Pamphlets\Posters             c) Newspaper/ Magazine
   b) Hoarding\ Billboards          d) Television
   e) Radio                         f) Farmer Meeting

Q4) What does the dealer suggest for Bayer Crop Science Promotional activity?
   a) Demonstration/Field Day       b) Coupon Scheme
   c) Crop Seminar                  d) Campaign Van
   e) Tea party                     

Q5) Why you prefer Bayer Crop Science than other?
   a) Product Portfolio
   b) Distributor/ Dealer Schemes
   c) After Sales Services
   d) Company Promotional Strategy

Q6) Any suggestion for the improvement Bayer Crop Sciences product

________________________________________________________________
________________________________________________________________
VITA

Simarpreet Singh, author of this manuscript, was born on October 25, 1991 in Moradabad, Uttar Pradesh. He had completed his High School and Intermediate examination from CBSE board in 2007 and 2010, respectively. Further, he took admission in S.G.R.R (P.G) College, Dehradun 2010 and obtained the degree of Bachelor of Agriculture in July, 2014. Thereafter, he got selected for MBA (Agribusiness) programme in College of Agribusiness Management (CABM), G.B. Pant University of Agriculture & Technology, Pantnagar through CMAT examination in 2014. In the month of January 2016, he got placed in Rallis India Limited as Executive Trainee.

Permanent Address

Simarpreet Singh
S/O Mr. Jagmeet Singh
B-32, Preet Vihar,
Chandra Nagar,
Near Sales Tax office,
Moradabad
Uttar Pradesh-244001
Mob- 7082404059
Email: simar25may@gmail.com