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## Product awareness tactics used by Bayer crop science LTD. for Adora in Fatehpur district, Uttar Pradesh

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### Abstract

Pesticides Industry is one of the significant inputs in Indian agriculture sectors. There are numerous types of pesticides use in paddy crop at different stages. But when it comes to herbicides many companies introduce their products in the market. The uses of herbicides are various in nature like Pre-Emergence and Post-Emergence. But in the study area farmers prefer Post-Emergence as their key herbicides in paddy crop to eliminate weeds for plant growth and to get maximum yield. Most of the farmers have mixed level of awareness on the basis of price, availability and quality respectively, because of lack of awareness and proper promotion. The study was done to understand the awareness tactics used by Bayer Crop Science Ltd. for promoting its well-known herbicides named "Adora" among the farmer in Fatehpur District of Uttar Pradesh.

**Keywords:** Product, Adora, awareness, brand promotion, pesticides

### Introduction

India's agricultural production has shown a growth of 2.7% p.a. in last 40 years, contributing today to a one fifth of its GDP. From a mere 52 tons in 1951-52, the food grain production in has increased to 232 million tonnes (FAOSTAT, 2013)<sup>1</sup>. However differences in soil fertility and corresponding agricultural growth as well as unreliable agricultural produce. This has been further worsened by farmer illiteracy, backwardness and poverty. Notwithstanding, an important role in the overall agricultural growth and productivity in India has been due to the agrochemical industry.

### The Agrochemical Industry

The agrochemical market in India has been grown over the decades, with the farmers having been inclined towards adoption of agrochemicals to protect their crops. Weeds are major obstacle for Indian agriculture, as elsewhere in the world. Weeds competition with crops for moisture and nutrients and counts for around 33% of all losses in a crop. Loss of yield due to weed infestation is variable and is more pronounced in crops grown under rain fed conditions. Some parasitic weeds draw water and nutrients from crop plants and can inflict severe damage. Further, weeds serve as alternate hosts to pathogens and also harbor pests. Control of weeds during early stages of crop growth, when the young seedlings of crop plants are unable to compete with hardy weeds, is crucial for capturing yield potential. For this reason, labour demand for weeding operation is high during early phase of crop cycle and manual weed control over large areas is not feasible from the point of labour supply and monetary costs. Some weeds that are wild relatives of crop plants are difficult to distinguish from crop plants at early stages and pose challenge for manual weeding. Under these situations, chemical weed control is relevant for realizing higher productivity and production. Globally, herbicides represent the largest group within agrochemicals (USDA, 2013)<sup>2</sup>. In India this is still not the case. Chemical weed control is slowly becoming one of the most important and reliable measures in weed management systems in India.

Agriculture is the backbone of the Indian economy whose prime motto is to provide food security to the population of country. Ensuring food security for more than 1bn Indian population with diminishing cultivable land resource is a herculean task. This necessitates use of high yielding variety of seeds, balance use of fertilizers, judicious use of quality pesticides along with education to farmers and the use of modern farming techniques. It is estimated that India approximately loses 18 per cent of crop yield valued at 900 bn due to pest attack each year. The use of pesticides helps to reduce the crop losses, provide economic benefits to farmer and help in ensuring food safety and security for the nation.

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Keeping in view the importance the present study was undertaken.

### How pesticides are crucial for improving agricultural productivity<sup>[3]</sup>

The importance of pesticides has been increasing over the last few decades driven by the need to improve overall agricultural productivity, in order to safeguard adequate food availability and sufficiency for the growing global population. Every year in India pests and diseases eat away on an average 15- 25% of food produce. Past three financial years (FY14-16) have been a challenging year for crop protection chemicals market in India as well as throughout the world. However, FY17 turned out to be a good monsoon year. As per Economic survey of India, agriculture sector has grown by 4.1% in FY17. In order to offset the growing demand for food grains either the area under the production should be increased or productivity of the existing land should be improved. As the arable land is limited, increasing productivity is the only option available. This can only be achieved through usage of high yielding seeds, fertilizers and pesticides. As the crop yield increases, the incidence of pest attack rise which leads to increased demand for pesticides. The following table gives the crop-wise yield in some countries:

Crop-wise yield in different countries (in 2016E) Kilogram per hectare

Crop-wise yield in different countries (in 2016E) Kilogram per hectare			
Country	Paddy	Maize	Wheat
India	3,620	2,603	3,151
Brazil	5,411	5,270	2,249
Russia	5,897	4,794	2,860
China	6,935	6,861	5,349
Japan	6,710	2,731	4,410
USA	8,663	10,948	2,991

Source: Compiled by CARE

In India, more than 40,000 different types of insects have been recorded and of these about 1,000 have been listed as potential pests for economic plants. 500 pests have caused serious damage to agricultural output at some point in time and 70 others have been causing damage more often. Therefore, pesticides have been recognized as an essential tool in India to increase agricultural production by preventing crop losses before and after harvesting.

### Seasonal Demand

The demand for pesticides emanates majorly from agricultural production. Therefore, the demand for pesticides in India is seasonal as crops are mainly sown in two cropping seasons, namely Kharif (July - November) and Rabi (October - February). The demand is skewed in favour of kharif crops with about 70% of annual pesticide consumption.

### Brand Awareness and need of efficient distribution system

There is a significant share of local pesticides products available in the market. According to industry estimates these products are ineffective and are unable to kill the pesticides could account for more than about 35-40% of the pesticides sold in India. Furthermore, they result in by products which harm the soil and environment which will result in crop loss and soil fertility. This is primarily on account of lack of efficient distribution system. On account of this the pesticide

companies are unable to reach the farmers and educate them about the products. Levlanc and Nguyen (2001)<sup>[4]</sup> has established that corporate image is established by elements of the company's identity, reputation, physical facilities, service quality, price offered and delivering the service.

### Regulatory Framework

As pesticides are toxic and hazardous to mankind and the environment, the Government of India regulates the manufacture, sale, transport, export/import etc. of pesticides under the guidelines of the Insecticides Act, 1968. As per this Act, no pesticide is allowed for production/import without registration. The GOI has initiated 'Soil Health card scheme' in February 2015 which is aimed at improving soil health and reducing input costs for farmer. It will contain crucial information on macro nutrients in the soil, secondary nutrients, micro nutrients, and physical parameters. The card will be accompanied by an advisory on the corrective measures that a farmer should take to improved soil health and obtain a better yield. Paramparagat Krishi Vikas Yojana has been launched by GOI to support and promote organic farming and thereby improve soil health. Philip *et al.* (2009)<sup>[5]</sup> the upshot is many consumer packaged goods companies feel they are forced to use more sales promotions than they wish. This will encourage farmers to adopt eco-friendly concept of cultivation and reduce their dependence on fertilizers and agricultural chemicals to improve yields.

### Product Profile<sup>[4]</sup>

adora<sup>®</sup>



Adora

### Bispyribac-sodium 10% SC (9.5% w/w)

adora is a new generation broad spectrum post emergent herbicide containing Bispyribac-sodium as an active ingredient. It effectively controls most of weed species infesting rice crop, both in nurseries and main field.

### Mode of Action

It is a selective, systemic post-emergent herbicide. After application, it gets absorbed by foliage and roots. Herbicide Resistance Action Committee (HRAC) Classification Group B

### Features

- Broad spectrum post emergent herbicide - It effectively controls grasses, sedges and broad leaf weeds infesting rice crop both in nursery and main field
- Excellent crop selectivity- It has excellent rice crop selectivity and it degrades in plant system extremely fast to provide an excellent control of all major weeds with utmost safety to rice crop when applied as post emergent herbicide
- Flexibility in application time- It has wide application window and can be used in early post emergent segment

- Novel herbicide with low dosage- It requires very low dose to attain highly satisfactory and consistent results Depending on weed intensity, only 200-250 ml/ha of adora is required per hectare to control major weeds
- It is compatible with other plant protection chemicals including carbamates and organophosphate insecticides without any adverse effect on rice

#### Crops and Target Weeds

Nursery	:	10-12 days of sowing for nursery rice
Transplanted Rice	:	Within 10-14 days of transplanted rice when most of the weeds have already emerged and are of 3-4 leaf stage depending upon soil and climatic factors.
Direct seeded rice	:	Optimum time of application is within 15-25 days of the sowing.

Crop	Weeds
Rice (Nursery)	<i>Echinochloa crusgalli</i> , <i>Echinochloa colonum</i> ,
Rice (Transplanted)	<i>Ischaemum rugosum</i> , <i>Cyperus difformis</i> , <i>Cyperus iria</i> ,
Rice (Direct seeded)	<i>Fimbristylis milliacea</i> , <i>Eclipta alba</i> , <i>Ludwigia parviflora</i> , <i>Monochoria vaginalis</i> , <i>Alternanthera philoxeroides</i> , <i>Sphinochlea zeylanica</i>

#### Objectives

The present study was preceded with following important objectives-

- ✚ To study product awareness tactics used by Bayer for Adora.
- ✚ To evaluate the brand awareness about Adora.
- ✚ To understand the Socio Economic condition of farmers.
- ✚ To determine farmers perception regarding Adora.

#### Research Methodology

The objectives of the study were fulfilled using following methodology during the study and report preparation.

#### Research Design

Multi- stage, purposive and descriptive research design was undertaken for the study, considering the scope and nature of the study. The basic emphasis of the study was the evaluation of perception of farmers about efficacy of Adora (Herbicides) for control broad spectrum weeds in study area. To accomplish the given objectives, the information was collected from different sources like farmers, Dealers, Distributors, Government organizations, and different websites, which are directly or indirectly involved in the Agrichemical business.

#### Information Required

Information required for fulfillment of objectives includes finding perception of farmers about ADORA for get high yield by interviewing farmers, retailers and dealers.

#### Tools for data collection

Questionnaire containing both open ended and closed ended questions was used as main tools for data collection from the farmers.

**Sources of Primary Data:** - Primary data regarding the study were collected from the farmers by using questionnaire (scheduled).

**Sources of Secondary Data:** - Secondary data regarding area under cultivation and cropping pattern was obtained from Department of Agriculture of State Government and Company's previous year's data.

**Sampling units:** Farmers, Dealers, Distributors of different markets and Scientific Community in the areas like KVK's officials were interviewed to get the required results for the given objectives of the study.

**Sampling Method:** Respondents were selected based on snow ball sampling and to some extent it was judgmental sampling also, to collect the primary data for project analysis. Main respondents for the study were the farmers in the district. Dealer/ Distributors were also interviewed on the basis of judgmental sampling as well as convenience sampling. Basically large farmers were approached to get the required information.

#### Analysis of data

The data were analyzed using simple mathematical and statistical tools. The results have been presented using tables, bar graphs, columns and pie charts. Garrett ranking technique was used to analyses preferred factor of purchasing by farmers and most effective promotional activity in the view of farmers. On the basis of observations and findings from retailers and farmers regarding 5Ps' and various other parameters of Bayer, major strengths and weakness were identified. On the basis of primary and secondary data collection after a thorough study of factors influencing sale of Bayer, strategy was formulated for suitable promotional activities in the area of study.

#### Sample Design

- Sample size-1000 Farmers, 20 dealers, and 1 distributor.
- Sample unit-farmer, dealer, and distributor.
- Sampling technique – Random sampling for farmers and judgmental for Dealers
- survey for distributors

Study Area	Study Period	Study tools
• Fatehpur	• 21 <sup>st</sup> July to 4 <sup>th</sup> September (45Days)	• Questionnaire, Interview and Industry analysis

#### Tools applied for data analysis

Simple tools like Pie chart, graphs, will be used. Statistical representation- percentage Analysis.

#### Results and Discussions

##### Present status of Paddy Hybrid seed companies in the study area-

Based on the questionnaire, the responses of the farmers were organized tabulated and analyzed. The following are the major findings:-

##### 1 Farmer's Profile

It covers the all information about effectiveness of all brand awareness activities related to the farmers.

**Table 1:** Education profiles of farmers

S. No.	Farmer with education	Number	Percentage
1	Up to 5 <sup>th</sup>	234	23.4%
2	up to 10 <sup>th</sup>	396	39.6%
3	up to 12 <sup>th</sup>	228	22.8%
4	Graduation	114	11.4%
5	Post-graduation and above	38	3.8%
	Total	1000	100%

It shows that majority of the farmer and lease holder were literate or having high school level education. In all districts most of the lands are given into lease to the lease holders. Most of these lease holders are farmers since their childhood. They spent their major time in their farms with whole family, hence affected the studies. That's why the literacy rate is low among them. While a new generation of educated farmers manage their lands by their own (Table 1).

## 2 Land holding pattern

It can be inferred from the graph that about only 7 percent of the farmers has more than 15 Acre of land. But majority of farmers i.e. 57 percent of the farmers have a land holding of less than five acre. Approximately, 36 percent have land holding of 5 to 15 acre. Beside this there is also some large land holding (>100 ha) occupied by very few farmers. This implies that land holding pattern also a factor in adoption of herbicide in the area. Reason being it is directly affected by adequate and timely availability of labourers (Table 2)

**Table 2:** Land holding pattern

S.NO.	Farmers area	Number	Percentage
1	Small farmer (up to 5 acre)	570	57%
2	Medium farmer (5-15 acre)	360	36%
3	Large farmer(>15acre)	70	7%

## 3. Identification of Top 7 Promotional Tools by Delphi Technique

The Delphi Technique was originally conceived as a way to obtain the opinion of experts without necessarily bringing them together face to face. Expert's opinion was taken from the previous year data, company representative & distributors/dealers. Thus from these opinions it is concluded that the following promotional tools were identified as following:

**Table 3:** Identification of Top 7 Promotional Tools by Delphi Technique

S.N.	Promotional tools	Number	Percentage
1	Farmers meeting	280	28%
2	Wall painting/postering	78	7.8%
3	Phone call	68	6.8%
4	Company people/ person	180	18%
5	Van campaign	310	31%
6	Demo	30	3%
7	Literature display	54	5.4%

Out of total sample size, 31 percent farmers responded that van campaigning is the best source of information to them. The more fascinating fact is that 98.5 percent of farmers who considered Farmer meeting as the best source also believed that Company People (Individual Contact) helps them to update their knowledge regarding recent agronomic practices in Paddy. When asked specifically regarding the Demo, 100 percent of the respondent said that every company must practice it and Demo creates good will among Farmers. The

respondents did not know much about Display items such as Cut-outs, Promo gates, Poster, cubes etc. as they had not observed such items at the shop of retailer. Wall paintings and trolley paintings are virtually inexistent in Case of pesticide market.

## 4. Farmers awareness about Adora

Survey on the awareness about Adora brings about an interesting aspect of farmers hearing about it, knowing about it and still not using it.

**Table 4:** Farmers awareness about Adora

S.N.	Attributes	Number	Percentage
1	Have not heard about it	320	32%
2	Have heard about it but never used	360	36%
3	Seen result in other farmers field	120	12%
4	Used it	200	20%

By interviewing and observation it was seen that out of one thousand farmers 20% per cent of surveyed population is using whereas other 48% of farmers have either heard about it or have seen its results in their peer group. Yes apart from these, there are still 32% of population have not heard about the product, and 12% of farmers have seen results in peer field (Table 4)

## 5. Reason for not using Adora-

**Table 5:** Reason for not using Adora

S.N.	Attributes	Reasons for not using Adora	Percentage of respondents
1	Price	310	31%
2	Kills beneficial weed	70	7%
3	Fear of new product	190	19%
4	Would like to see result	220	22%
5	Loyal to other product	210	21%

The above data from the observation method says that 7% farmers says that it kills beneficial weeds 19% farmer have fear of using the product followed by 31% farmer says that price of the product is high, 21% farmers are loyal to other brands and 22% farmers have some inclination towards using the product but they would like to first see the results from their own eyes (Table 5)

## Conclusion

First and foremost conclusion of the present study is that brings focus on the market evaluation of Dealers recommendation plays very crucial role for the purchasing of the herbicides and all the related goods. They trust dealers as compare to other sources which influence their buying behaviour because most of these farmers purchase the pesticide at credit. Farmers from these regions are found to be very loyal to the product which they are using. Most of the farmers were found to be using the same product which they have been using since long back. That is the reason they are using Adora and its a bit tedious job to make them understand that Adora is having more advantages over the Pretilachlor and others herbicides. Price of the product is also one of the important factors which determine the behaviour of the farmers. No company show room (own outlet) in particular so its one of the most fundamental reasons why farmers prefer local herbicide over the in Paddy. The price sensitivity forces the farmers to buy the local herbicides. In Fatehpur region farmers are reluctant to change their pesticide consumption.

Farmers are not easily ready to change their usages and practices pattern. Some old farmers are hesitating to give their contact number because they have been cheated by some companies by giving their contact number to them. Initial promotion activities before starting of the season will encourage them to use Adora during cropping season get profited by it. The other promotional activities includes audio visual programs, night meeting, and gifts distribution like calendars, diaries etc. shall be very effective to Farmers.

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