Identifying major players in fungicide market in Faridkot district of Punjab.

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Abstract- Fungal diseases pose a significant threat to crop production and can cause substantial yield losses. Fungicides are an effective solution to control fungal diseases, but their adoption by farmers is influenced by various marketing factors. This study aims to identify major players in fungicide market in Faridkot district of Punjab. A survey-based approach was used to collect data from 120 farmers, and descriptive statistics and regression analysis were employed to analyse the data. The study found that farmers in Faridkot district frequently use fungicides, and the availability, quality, price, and after-sales service of fungicides significantly influence their purchase decision. Moreover, farmer training programs and word-of-mouth communication were identified as important sources of information on new fungicide products in the market. The study also revealed that farmers face difficulties in the application of fungicides, which could be addressed through better technical support from manufacturers and suppliers. Based on the findings, this study provides recommendations for improving the marketing and availability of fungicides in Faridkot district, such as customized marketing strategies, regular farmer education and training programs, and improved technical support.

Keywords: Fungal diseases, fungicide, marketing factors

INTRODUCTION
Agriculture is the main occupation of India’s large and growing population for its sustained food security. India currently supports nearly 17.84 percent of world population, with 2.4 percent land resources and 4 percent of water resources. More than 70 percent people are engaged in agriculture sector. India is the 13th largest exporter of pesticides and disinfectants in the world and in terms of volume is the 12th largest producer of chemicals with a value of US$ 0.6 billion. India produces 90,000 metric tonnes of pesticides a year (Abhilash and Singh, 2009) With over 400 million acres under cultivation and over 60% of the country’s population dependent on agriculture, the country’s economy depends on the agricultural sector to a substantial extent.

Table No.1.1: Trends in agrochemicals consumption in India.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name</th>
<th>1971-72(t)</th>
<th>1994-95 (t)</th>
<th>2007-08(t)</th>
<th>2008-09(t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Insecticides</td>
<td>22103</td>
<td>51755</td>
<td>66875</td>
<td>73562</td>
</tr>
<tr>
<td>2.</td>
<td>Fungicides</td>
<td>2067</td>
<td>22895</td>
<td>42311</td>
<td>46542</td>
</tr>
<tr>
<td>3.</td>
<td>Herbicides</td>
<td>30</td>
<td>7620</td>
<td>10350</td>
<td>11385</td>
</tr>
<tr>
<td>4.</td>
<td>Rodenticides</td>
<td>195</td>
<td>1860</td>
<td>2555</td>
<td>2810</td>
</tr>
<tr>
<td>5.</td>
<td>Others</td>
<td>74</td>
<td>900</td>
<td>1948</td>
<td>2142</td>
</tr>
<tr>
<td>6.</td>
<td>Total</td>
<td>24305</td>
<td>85030</td>
<td>124039</td>
<td>136441</td>
</tr>
</tbody>
</table>
Fungicides are biocidal chemical compounds or biological organism used to kill or inhibit fungi or fungal spores. Fungi can cause serious damage in agriculture, resulting in critical losses of yield, quality and profit. Fungicide can either be contact or systemic. Most fungicide that can be bought retail is sold in a liquid form. A very common active ingredient is sulphur present at 0.08% in weaker concentrates, and as high as 0.5% for more potent fungicides. Fungicide in powered form are usually around 90% sulphur and very toxic.

**Strengths of Agrochemical Industry:**
1. India is one of the largest producers of pesticides in Asia. Indian companies have developed process technologies for more than 30 pesticides, and pesticide exports from India are steadily on the rise. Many Indian companies have opened offices and stock depots in Europe and Australia to ensure quick delivery, and exports have increased in the last three years by as much as 15 percent.
2. India due to its inherent strength of low cost manufacturing and qualified low cost manpower is a net exporter of pesticides to countries such as USA and some European and African countries.
3. The global market in generic pesticides is likely to increase by 70% by the year 2008. It is expected that the strong fundamentals of the Indian pesticide industry, such as cheap availability of raw materials, process expertise, low operating costs and R&D strengths, will attract many foreign companies. This in turn should boost investment in research, and thus there will be a bright future for agrochemical companies in India.
4. India is one of the most dynamic generic pesticide industries in the world, having a total installed capacity of 625 technical grade pesticides, consisting of large and medium scale firms, 400 pesticide formulators are spread all over the country for manufacturing pesticides that can be used in agriculture, public health, household.

**MATERIALS AND METHODS**
A descriptive research design was followed for the study. The research design was chosen because the study was focused on determining consumer preference and buying behavior of Fungicide consumers. The research design scientifically includes observation and describes the customer behavior without influencing it.

**Selection of District**
In Punjab state Faridkot district was selected purposively for the study on the basis of the maximum effect of fungal infection on rice crop.

**Selection of Block**
There were 3 blocks in district Faridkot, out of that block Kotkapura was selected purposively on the basis of maximum number of fungal infection on rice crop as consumption of fungicide was maximum there.

**Selection of Villages**
List of villages was procured from the marketing and development officer of Syngenta, out of which total 5% villages were selected randomly.

List of selected villages in Kotkapura block
1. Dhilwa
2. Pangrain Kalan
3. Wara daraka
4. Burj Harika
5. Malke
6. Aulakh

**Selection of Respondents** - Respondents were selected from these seven villages of chaka block. 20 Respondents were randomly selected from each village.

**Tools of Analysis**
The collected data is analyzed with reference to the objectives set forth for the study. The analytical techniques employed in this study are explained:

1. **Chi Square Test**
A chi-square statistic tool is one way to show a relationship between two categorical variables. The chi-squared statistic is a single number that tells you how much difference exists between your observed counts and the counts you would expect if there were no relationship at all in the population. It is used for data that consist of variables distributed across various categories and is denoted by $\chi^2$. This formula was used for identifying the socio-economic status of the farmers.

$$\chi^2 = \sum \frac{(Observed ~ value ~ - ~ Expected ~ value)^2}{Expected ~ value}$$

2. **Garret Ranking**
The Garret ranking will be used as a tool for the constraints and suggestions. Garrett’s ranking technique will be used to rank the preference indicated by the respondents on different factors. As per this method, respondents will be asked to assign the rank for all factors and the outcomes of such ranking will be converted into score value with the help of the following formula:

\[
\text{Percentage position} = \frac{100 \times (R_{ij} - 0.50)}{N_j}
\]

where,

\( R_{ij} \) = Rank given for the \( i \)th variable by \( j \)th respondents

\( N_j \) = Number of variables ranked by \( j \)th respondents

With the help of Garrett’s Table, the percent position estimated will be converted into scores. Then for each factor, the scores of each individual will be added and then total value of scores and mean values of score will be calculated. The factors having highest mean value will be considered to be the most important factor.

RESULTS AND DISCUSSION

The following data is based on the verbal information received from the respondents in Kharif season in the study area. The data that has been collected is mentioned in the table below.

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Fungicide brand</th>
<th>Fungicide name</th>
<th>Frequency</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bayer</td>
<td>Nativo</td>
<td>12</td>
<td>4 (Agree)</td>
</tr>
<tr>
<td>2</td>
<td>Upl</td>
<td>Avancer Glow</td>
<td>17</td>
<td>3 (Neither Agree nor Disagree)</td>
</tr>
<tr>
<td>3</td>
<td>Sygenta</td>
<td>Amistar top</td>
<td>53</td>
<td>5 (Strongly Agree)</td>
</tr>
<tr>
<td>4</td>
<td>Crystal</td>
<td>Tilt</td>
<td>18</td>
<td>4 (Agree)</td>
</tr>
<tr>
<td>5</td>
<td>Adama</td>
<td>Custodia</td>
<td>20</td>
<td>2 (Disagree)</td>
</tr>
</tbody>
</table>

Source: Survey data

Fig. 4.6 Fungicide brands preferred by the farmers
Table 4.6 shows that 44% of farmers prefer Sugenta’s AMISTAR TOP fungicide for their field, 16% prefer Custodia, 15% Tilt, 14% Avancer Glow, and 10% prefer Nativo.

Preference of Various Factors For the Attraction Towards Syngenta’s Amistar Top.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>No. of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases control efficiency</td>
<td>42</td>
<td>35</td>
</tr>
<tr>
<td>Safety</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>Price</td>
<td>11</td>
<td>9.1</td>
</tr>
<tr>
<td>Convenience</td>
<td>13</td>
<td>10.8</td>
</tr>
<tr>
<td>Brand reputation</td>
<td>11</td>
<td>9.1</td>
</tr>
<tr>
<td>Availability</td>
<td>25</td>
<td>20.8</td>
</tr>
<tr>
<td>Technical support</td>
<td>11</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>120</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Fig. 4.7 Preference of various factors for the attraction towards Syngenta’s amistar top

Table 4.7 shows that Availability and diseases control efficiency are the major factors influencing the marketing of SYNGENTA’S AMISTAR TOP.

CONCLUSION

This thesis "Identifying major players in fungicide market in Faridkot district of Punjab" aimed to identify major players in fungicide market the in Faridkot district of Punjab. A survey-based approach was used to collect data from 120 farmers, and descriptive statistics and regression analysis were employed to analyse the data. The study found that farmers in Faridkot district frequently use fungicides, and the availability, quality, price, and after-sales service of fungicides significantly influence their purchase decision. Moreover, farmer training programs and word-of-mouth communication were identified as important sources of information on new fungicide products in the market. The study demonstrated that Amistar Top of Sygenta is highly used and recommended by the farmers in Faridkot district of Punjab. The recommendations made in this study for improving the marketing and availability of fungicides in Faridkot district can be beneficial for policymakers and agribusinesses alike. Customized marketing strategies, regular farmer education...
and training programs, and improved technical support can help increase the adoption of fungicides among farmers in the region.

BIBLOGRAPHY: