CHAPTER 1: PREAMBLE

1.1 INTRODUCTION:

Pests are any organisms, insects, rodents, weeds, fungus etc which are destructive to cultivated plants and crops.

Pesticides or Crop Protection Chemicals are defined as: “Any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, diseases, unwanted species of plants or animals causing harm during, or otherwise interfering with, the production, processing, storage, transport or marketing of food, agricultural commodities, wood and wood products or animal foodstuffs, or which may be administered to animals for the control of insects or other pests in or on their bodies. The term includes substances intended for use as plant growth regulator, defoliant, desiccant or agent for preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport”.

Pesticides (Crop Protection Chemicals/Agrochemicals) have been classified based on target organisms, which is shown in Table 1 below.

Table 1: PESTICIDES (CROP PROTECTION CHEMICALS) CLASSIFICATION

<table>
<thead>
<tr>
<th>Target Organism</th>
<th>Pesticide Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insects</td>
<td>Insecticides</td>
</tr>
<tr>
<td>Plants</td>
<td>Herbicides or Weedicides</td>
</tr>
<tr>
<td>Fungus</td>
<td>Fungicides</td>
</tr>
<tr>
<td>Bacteria</td>
<td>Bactericides</td>
</tr>
<tr>
<td>Rodents</td>
<td>Rodenticides</td>
</tr>
</tbody>
</table>
In addition, fumigants are used to protect the crop during storage and plant growth regulators are used to improve the growth of the plant.

1.2 : PROBLEM IN HAND

The population of India is increasing at an alarming rate and at the same time the arable land is decreasing (Reference 60, 71 and 88). Ensuring food security of India is a challenging task.

There is huge loss of crops in India due to pests and weeds (Estimate: Rs 1,40,000 crores per year) (Reference 87). Yet, the use of pesticides per hectare in India is one of the lowest in the world and one fifth of the average world consumption (Reference 71). India produces approximately 16% of world’s food grain, but consumes only 2% of pesticide (Reference 71). In India, pesticide is used only in 2/5th of the arable land. There is no pesticide application in remaining 3/5th portion. The use of pesticides in India is very low as compared to other countries. Thus there is very good scope for decreasing crop loss in India by judicious use of pesticides.

The present study has tried to find out the reason for low consumption of pesticides in India and has recommended action plan to support food security of India. The Indian economy and the Indian farmers will ultimately gain, as there will be less crop damage. The agricultural output will also increase significantly.

The second part of the project is study of few pesticide companies in India and developing competitive strategies for the Indian agrochemical companies.

In the global ranking of pesticide industries, India’s rank is second in Asia and twelfth in the world. Even then, India does not have a single global size plant. Expenditure in Research and Development is also very low. There is less adherence to environment, safety and health related norms as per the International standard. The cost of production is high as compared to China.

At the same time opportunities are very high. The population increase and decreased
availability of agricultural land will necessitate improvement of farm productivity. The global push to improve agricultural productivity will drive agrochemicals demand.

In order to capture these opportunities, Indian agrochemical companies have to take initiative in several areas. The second part of the study has done SWOT analysis, identified the areas for improvement and recommended action plan for the Indian agrochemical companies.

1.3 : IMPORTANCE OF THE PROJECT:

India looses huge amount of crop due to pest attack. The current estimate puts the figure at Rs 1,40,000 crores. The pesticide consumption per acre in India is one of the lowest in the world. The present study has thrown up the reason for the low usage. It has also recommended action plan for improving the situation. This will result in reduced wastage of crop due to pest attack. Indian economy and farmers will gain.

The second part of the study has been related to India agrochemical companies. It has done SWOT analysis and recommended competitive strategies for the Indian agrochemical companies.

In the global ranking of pesticide industries, India’s rank is second in Asia and twelfth in the world. Even then, India does not have a single global size plant. Expenditure in Research and development is also very low. There is less adherence to environment, safety and health related norms as per the International standard. The cost of production is high as compared to China.

At the same time opportunities are very high. The population increase and decreased availability of agricultural land will necessitate improvement of farm productivity. The global push to improve agricultural productivity will drive agrochemicals demand.

In order to capture these opportunities, Indian agrochemical companies have to take initiative in several areas. The second part of the study has done SWOT analysis,
identified areas for improvement and recommended action plan for the Indian agrochemical companies. The Indian economy and farmers will gain.