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## Importance of Argo-Chemical Companies in Indian Agri Sector: An Analysis

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### Abstract

Agricultural chemicals, also referred to as agrochemicals, encompass a diverse range of chemical substances used in modern agriculture including pesticides to control insect, weed, and fungal infestations, fertilizers to improve soil fertility and nutrient availability, as well as plant growth regulators to influence plant development. The importance of agrochemicals in modern agriculture cannot be overstated. These chemicals play a vital role in ensuring food security by increasing crop yields and safeguarding plants from a range of threats. The judicious and responsible use of agricultural chemicals has become integral to global food production, helping to meet the rising demand for crops due to population growth and changing consumption patterns. In India, we see many companies that supply pesticides and fertilizer to our farmers. The market size of fertilizers is expected to increase at a higher rate due to the growing demand for food grains and population. Crop protection chemicals such as herbicides and fungicides are expected to increase in the Indian market's growth due to rodent and pest attacks on crops. Agrochemical Industries play a very vital role in the agricultural business, supporting farmers in improving both the quality and quantity of their production. This research tries to find out the top ten Argo Chemical companies in the Indian market based on their present market share and future growth among their product basket and evaluate their functional level strategy in the context of marketing for future growth in the Indian market.

**Keywords:** Argo chemical, fungicide, herbicide, insecticide, strategy, market growth

### Introduction

About 1.8 billion people worldwide are engaged in agriculture and most of them use pesticides to protect their crops. Agrochemicals have become a non-separable part of agriculture systems due to better outcome in crop yields, which is very important to meet the food demand of the growing population. Being a developing nation India is already facing many traditional issues like malnutrition, sanitation, insufficient medical care etc. Use of chemicals (*viz.* insecticides, fungicides, herbicides or fertilizers) has become a significant part of Indian agriculture, as farm productivity has been found to be directly proportional to chemical application. In our country, the growing population is the root cause of production enhancement that leads to the farmer using more pesticides. So, Agrochemical Industries is a fast growing industry in Indian market. Crop protection is the important practice of protecting the crop yields from different pests including weeds, plant diseases, and other organisms that cause damage to the agricultural crops. Apart from crops, agricultural fields would have weeds, small animals like rats, mites, insects, pests, disease-causing pathogens and frequently raided by birds. All these factors are mainly responsible for the loss or damage to the crops. Thus, to yield high crop production, farmers need to protect the crop from these pests. Hence crop protection management is important before, during and after the cultivation.

### Objective

- To identify major contribution of Agrochemical companies in Indian agriculture sector.
- To analyse SWOT (Strengths, Weaknesses, Opportunities and Threats) based on the performance of agrochemical companies in Indian market.

### Research Methodology

Following method has been adopted in this research.

- A. For dealing the scope of agrochemicals and to evaluate the breath restricted to crop protection.
- B. To understand present situation of agrochemical companies the following technique can be applied.
  1. Evaluate of market growth last 10 years
  2. Evaluate total profit of the company
  3. Evaluate marketing strategy applied by industry and evaluate different product of different agrochemical companies

### Analysis Section

Indian economy is primary based on agriculture and agriculture sector an its associated subsidies products

maximize employment and contribute approximately 30% of country GDP. So crop protection during pre and post-harvest period among different agriculture base product one of challenging area of the agrichemical companies.

### Why do we need Crop Protection?

Globally, on average, every year farmers lose 20 to 30 (%) of their cultivated crops due to pests and other diseases. In order to reduce these losses, crop protection is much more required. There are different types of Crop Protection products available in the market and are eco-friendly or environment-friendly products which help in preserving the environment and also protect the crops. These products include – Fungicides, Herbicides, Insecticides and Seed care.

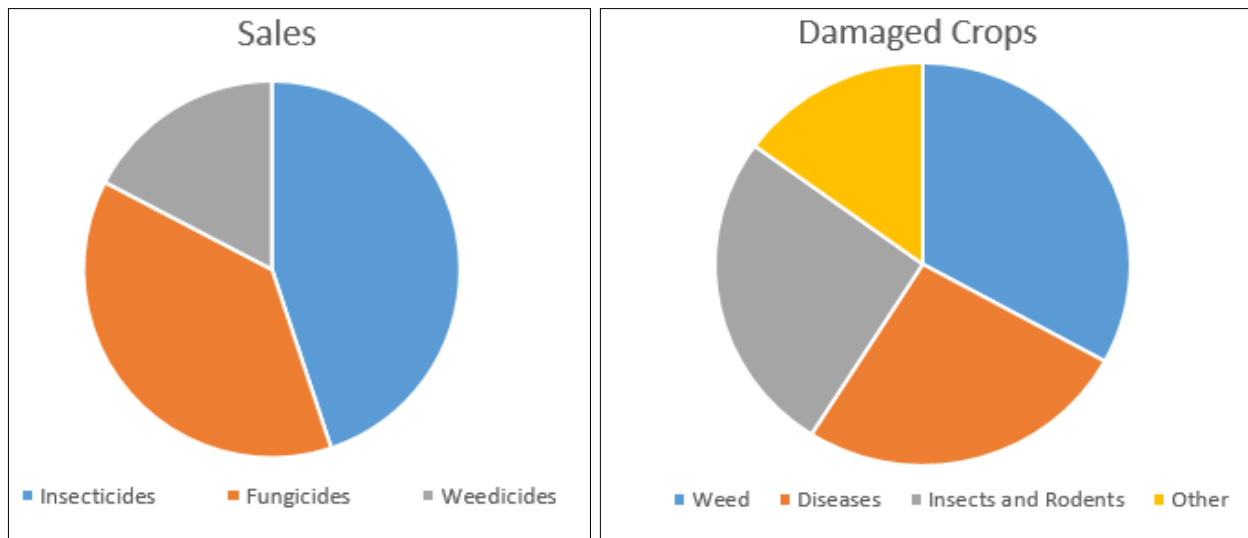


Chart 1 Shows the sales and damaged crops

### Category wise chemical use during harvesting and it's market share

The crop valued more than 7cr. are damaged only due to pest in India in which weeds cause 33%, diseases 26%, insect and rodents 26% and birds, nematodes etc. cause 15% damage. The used of pesticides are 44% insecticides, 37% fungicides and 17% weedicides in India. Agrochemicals help minimize this loss by protecting crops, increasing productivity and maintaining the quality of the produce. This also saves other costs such as labour and fuel which in turn lowers the prices of agricultural commodities.

### Cultivation and Crop protection

- **Weed Management:** Weeds are unwanted plants growing along with the crops. These undesirable plants, steal the nutrients, sunlight, water and other resources from the crops and affect their growth, which results in the undernourished of crops and decreases the yields. To safeguard the productivity of crops, farmers remove these weeds by a process called weeding. Few examples of weeds are Amaranthus, Cyperinus rotundus, Bermuda grass, etc. Apart from weeding, Herbicides – a chemical substance also play an important role in controlling the growth of the weeds and also help in preventing soil erosion and water loss.
- **Pests and Insects Management:** Both insects and pests are the major cause of crop damage and yield loss. They could ruin the whole crop and eat up the large portion

of grains. In fact, they can reduce crop output by 30-50(%) every year if left unchecked. The best ways to protect crop damage are by incorporating integrated pest and insect management. Spraying insecticides, pesticides help to minimize the crop damage by controlling the insects and other pests.

- **Plant Disease Management:** Pathogenic diseases are another type of crop-damaging factors. Microorganisms like bacteria, fungi, and viruses affect different parts of the crop through various means. Crops could be protected from these diseases by using pesticides and biocontrol agents. These are crop protection management, which should be followed before and during the cultivation.

### Contribution of ten pesticides companies in India

1. Rallis India Ltd
2. Insecticides India
3. UPL Ltd
4. Bharat Rasayan Ltd
5. Dhanuka Agritech Ltd
6. Bayer CropScience Ltd.
7. PI Industries Ltd
8. FMC
9. NACL Industries limited
10. Excel Crop Care Ltd



1. **Rallis India Limited:** Rallis India Limited manufactures and markets a range of agri-inputs, which include

pesticides, fungicides, insecticides, seeds, and plant growth nutrients. This company total profit of last 10 years is 1677.44cr.

- 2. **Marketing Strategy:** Rallis' marketing efforts revolve around stakeholder engagement and building its brands' personalities.
- 3. **Market Growth of 10 years:** In this graph profit decrease in before 2016 and after increase. Highest profit in 2017. Then decrease profit, after 2018 it increase slowly. Again it decrease in 2022.

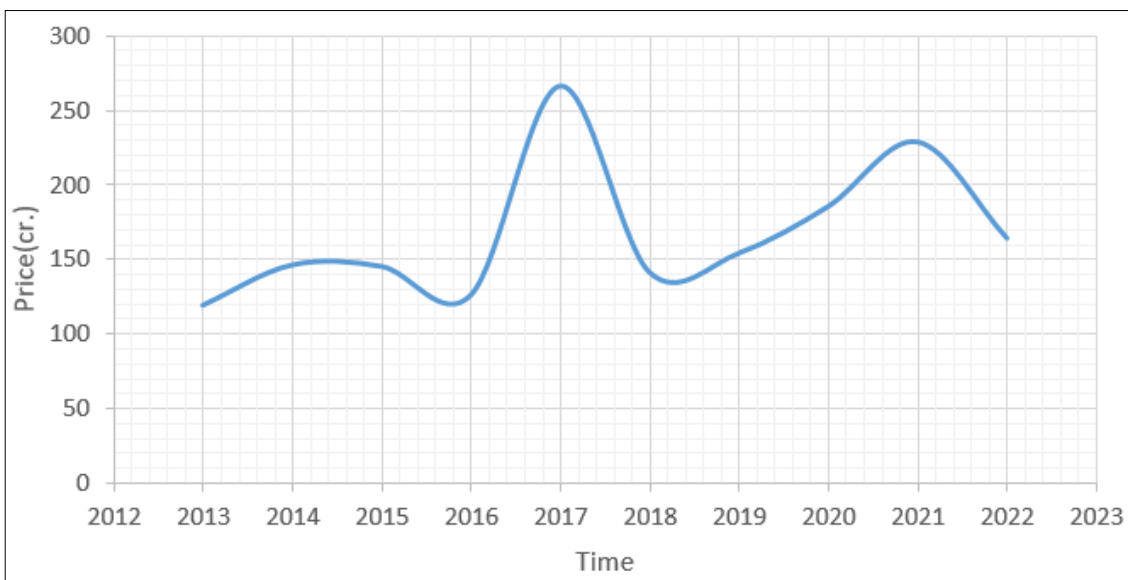


Fig 1: Percentage of market growth over the last 10 years of Rallis India Limited. (Source- moneycontrol.com)



4. **Insecticides India Limited:** Insecticides India is chemical manufacturing company. Headquarters in India. This company total profit of last 10 years is 721.66cr.

- 5. **Marketing Strategy:** Focus on launching new generation products.
- 6. **Market Growth of 10 Years:** In this graph profit increase in 2015 then it fall in the year 2016. After 2016 it increase and highest profit in the year 2019. Again profit fall in 2020. Now in increase.

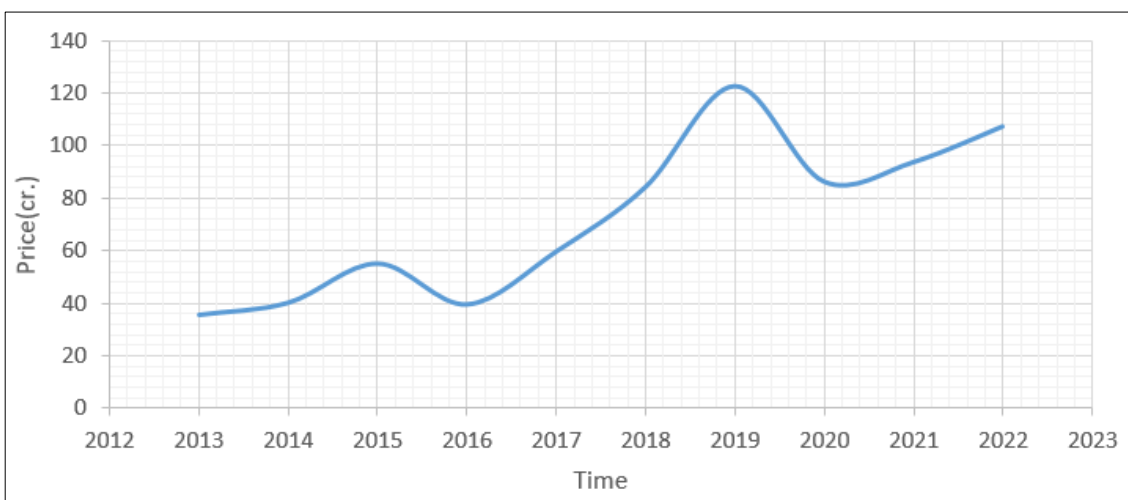
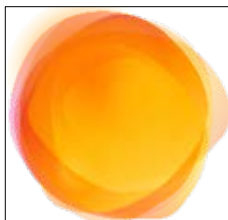


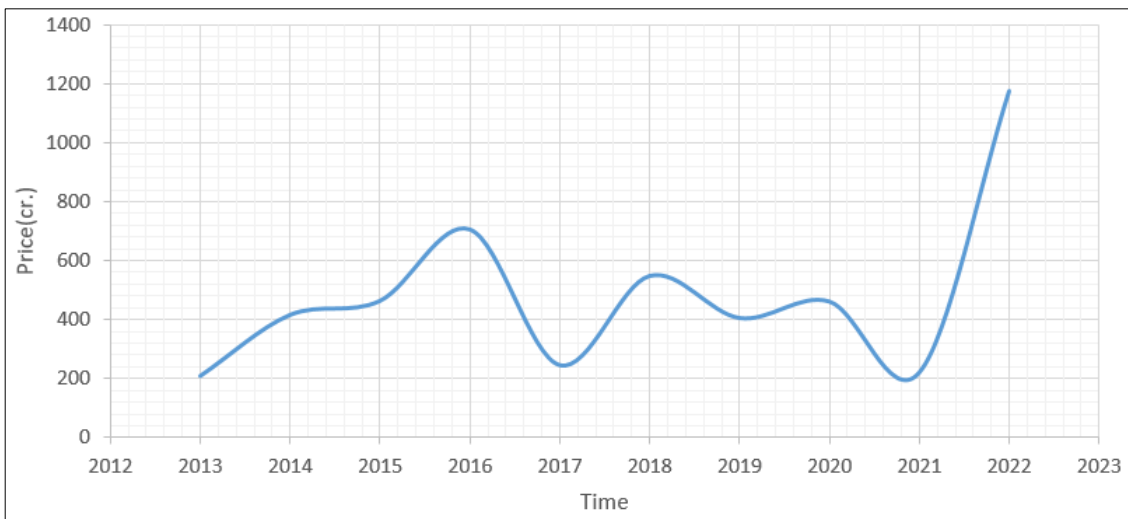
Fig 2: Percentage of market growth over the last 10 years of Insecticides India Limited. (Source- moneycontrol.com)



**7. United Phosphorus Limited:** United Phosphorus Ltd, is a chemical company that develops and manufactures

agricultural protection products. The company offers agrochemicals, seeds, industrial and specialty chemicals, and nutrifeed products. Founded in 1969 for the first-ever indigenous production of red phosphorus, United Phosphorus was the brainchild of Rajju D Shroff. This company total profit of last 10 years is 4847.9cr.

- 8. Marketing Strategy:** This company always worked out one strategy and that is direct marketing.
- 9. Market Growth of 10 Years:** It increase in the year 2016 after 2016 profit fall again 2021 profit fall but 2022 get highest profit.



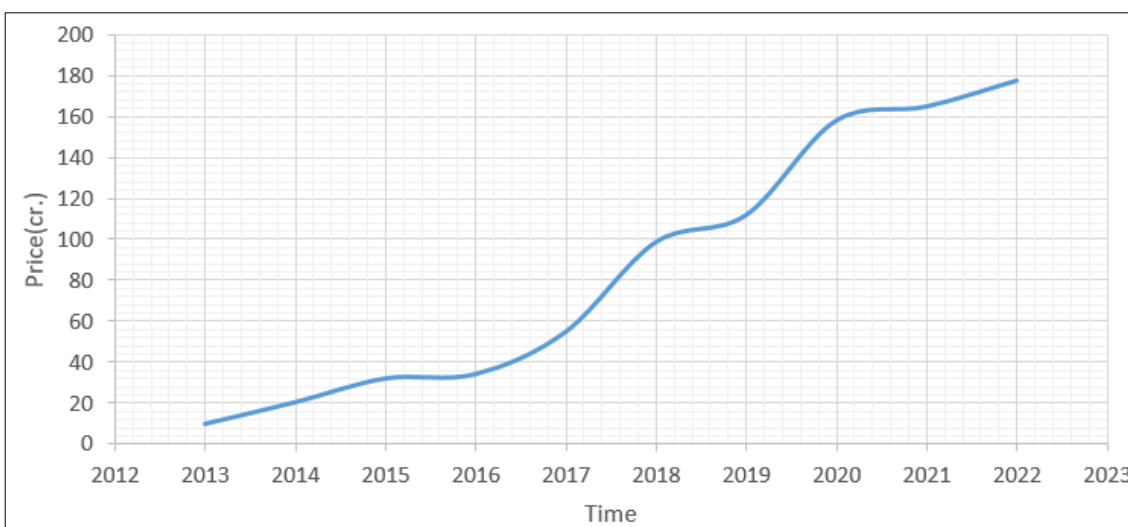
**Fig 3:** Percentage of market growth over the last 10 years of United Phosphorus Limited. (Source- moneycontrol.com)



**10. Bharat Rasayan Limited:** Bharat Rasayan is a R&D driven chemical manufacturing company and is established in 1989. We are engaged in the production of Fatty Acid Anhydrieds, Grignard Reagents, Pharma /

Drug intermediates, Esters and Solvents on a regular basis. This company total profit of last 10 years is 858.97cr.

- 11. Marketing Strategy:** The strategic planning aims to explore areas in which Bharat Rasayan Ltd can utilize its strengths, core competency, and strategic advantages to pursue attractive opportunities in Chemical Manufacturing industry and wider macro environment.
- 12. Market Growth of 10 Years:** This company profit structure is very good. Every year increase the profit. At the last year get highest profit.



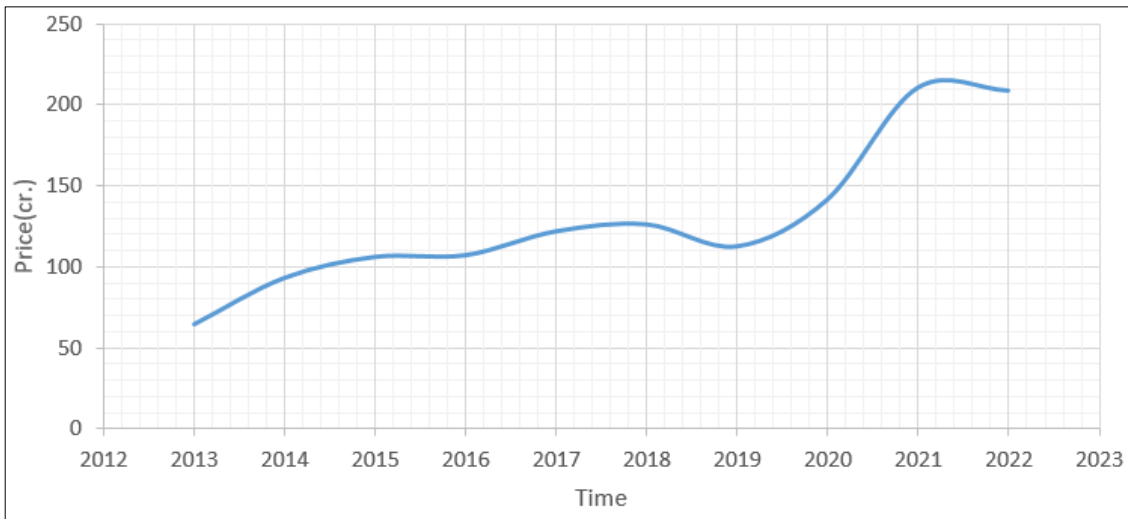
**Fig 4:** Percentage of market growth over the last 10 years of Bharat Rasayan Limited. (Source- moneycontrol.com)



**13. Dhanuka Agritech Limited:** Dhanuka Agritech Ltd. The Company was incorporated in 1985, company belongs to

Dhanukha group of companies. It is an established participant in the insecticides segment of India's crop protection chemical business. This company total profit of last 10 years is 1292.24cr

- 14. Marketing Strategy:** Dhanuka Agritech Ltd, Push on the strength of its strategic & creative excellence.
- 15. Market Growth of 10 Years:** Upto 2018 profit increase slowly but after 2018 it fall. In the year 2019 again profit increase. 2021 get highest profit. But after 2021 it fall.



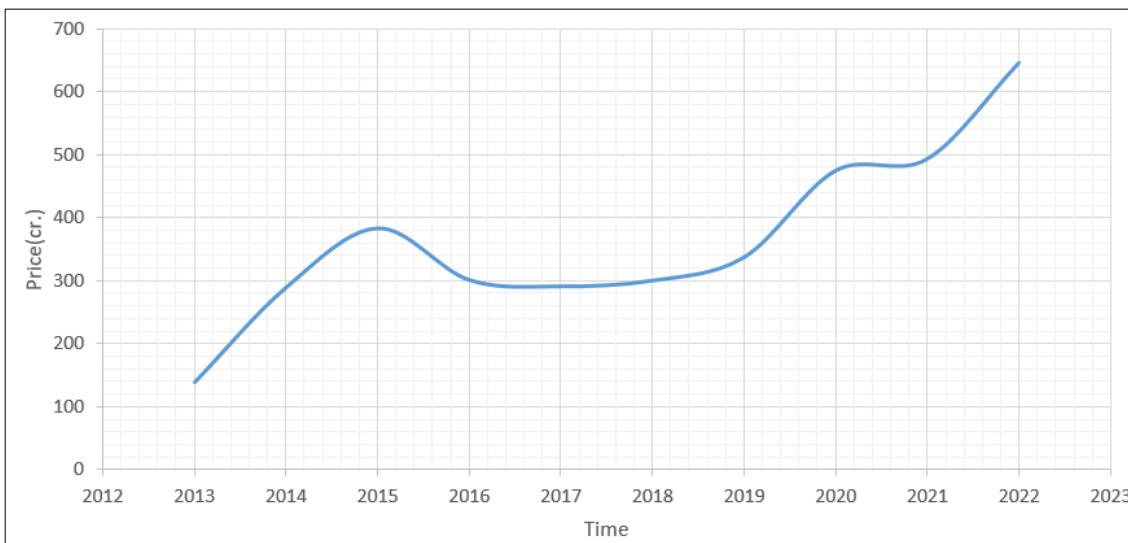
**Fig 5:** Percentage of market growth over the last 10 years of Dhanuka Agritech Limited. (Source- moneycontrol.com)



**16. Bayer CropScience Ltd.:** Bayer is a global enterprise with core competencies in the Life Science fields of health care and agriculture. Bayer's leadership in

agriculture provides tailored solutions for farmers to plant, grow and protect their harvests using less land, water and energy. This company total profit of last 10 years is 3653.5cr.

- 17. Marketing Strategy:** Bayer marketing strategies covering the 4Ps (product, price, place promotion) and how Bayer lines up its vision and business strategies with their marketing strategies.
- 18. Market Growth of 10 Years:** This company profit increase up to 2015. Then it fall and in the year 2018 profit increase. Highest profit get in 2022.



**Fig 6:** Percentage of market growth over the last 10 years of Bayer Crop Science Ltd. (Source- moneycontrol.com)



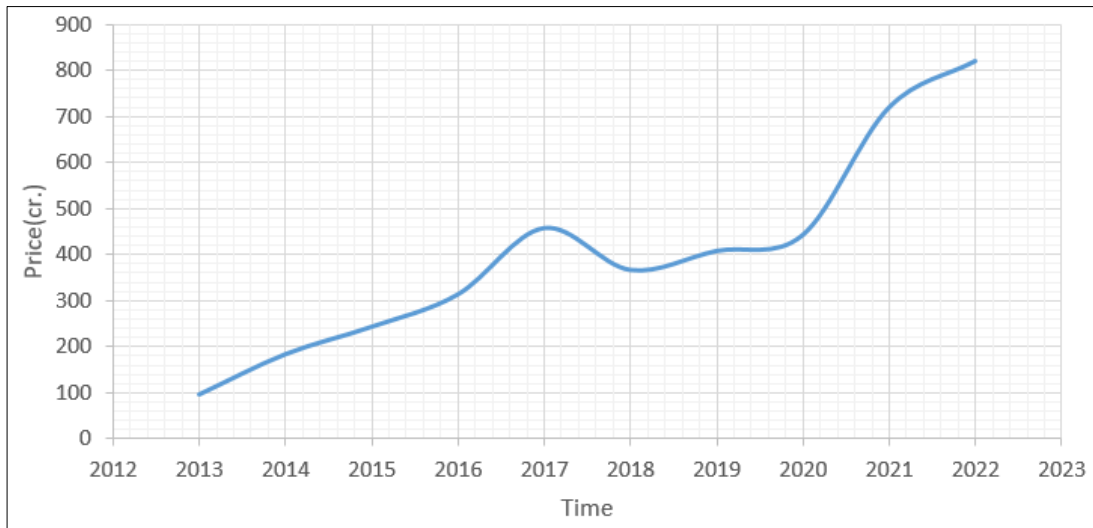


**19. PI Industries Ltd:** The company was founded in 1947 in the city of lakes — Udaipur, Rajasthan (India), was named PI Industries Ltd in 1993 to reflect its new diversified businesses, is engaged in the business of- Agri inputs, Fine Chemicals and (CRAMS) Contract

Research and Manufacturing Services), Polymers and Engineering Services. This company total profit of last 10 years is 4049.2cr.

**20. Marketing Strategy:** Consistently demonstrated various attributes – technical competence, research effectiveness, marketing reach, in-licensing proficiency, manufacturing capability with respect for intellectual property, deep rooted relationships and governance.

**21. Market Growth of 10 Years:** This company profit growth up to 2017. After 2017 profit decrease and in the year 2019 again profit increase. In the year 2022 get highest profit.



**Fig 7:** Percentage of market growth over the last 10 years of PI Industries Ltd. (Source- moneycontrol.com)

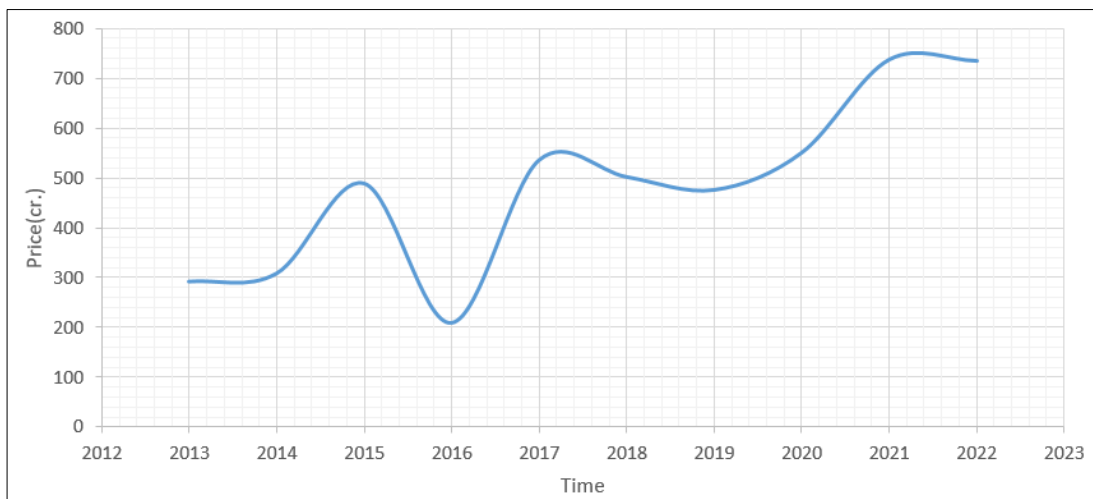


**22. FMC:** FMC is an agricultural sciences company that advances farming through innovative and sustainable crop protection technologies. From our industry leading discovery pipeline, to unique application systems, to

modern biological products, we are passionate about bringing new solutions to growers around the world. This company total profit of last 10 years is 4836 Million of US \$.

**23. Marketing Strategy:** Marketing Mix, Customer Analysis, Company Competitive Advantage in the Marketing Strategy.

**24. Market Growth of 10 Years:** In the year 2015-2016 profit decrease. 2016-2017 again increase profit, again it fall. After 2019 profit increase and get highest profit in the year 2021.



**Fig 8:** Percentage of market growth over the last 10 years of FMC. (Source- moneycontrol.com)



1993 as Chemagro International Limited. NACL has started off with the manufacturing of Agrochemical Active Ingredients. This company total profit of last 10 years is 158.93cr.

- 26. **Marketing Strategy:** Providing high quality products and solutions to the farming community.
- 27. **Market Growth of 10 Years:** This company run with loss in the years 2013, 2014 and 2019. Profit increase in the year 2015-18. After 2019 profit is increase and get highest profit in 2022

25. **NACL Industries limited:** NACL Industries limited is a renowned player in the Agrochemical space. Started in

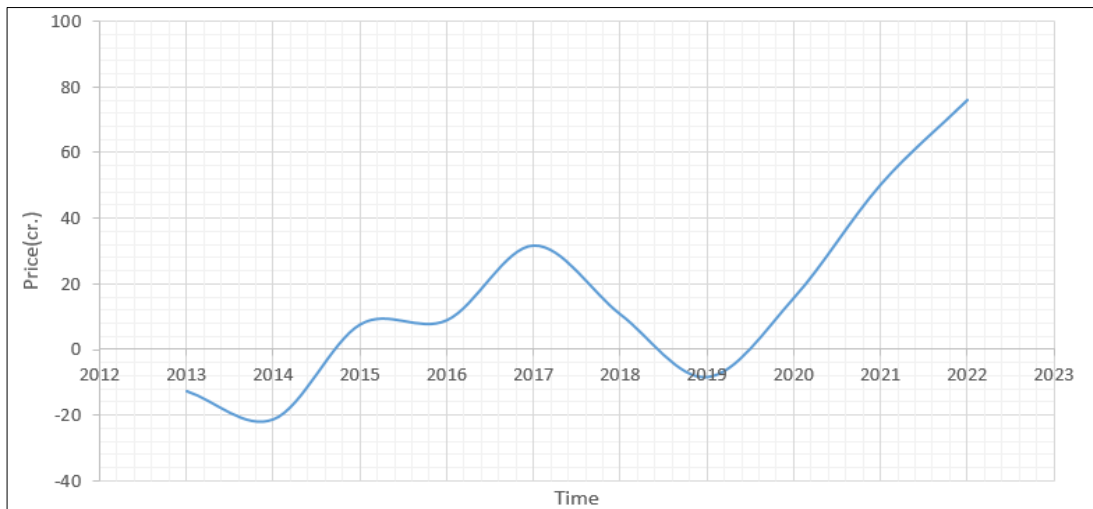


Fig 9: Percentage of market growth over the last 10 years of NACL Industries limited. (Source- moneycontrol.com)



stature, economic status etc with emphasis to long range commitment and dedication to agriculture. This company total profit of last 10 years is 548.69cr.

- 29. **Marketing Strategy:** Leveraging brand recognition in new segments.
- 30. **Market Growth of 10 Years:** In the year 2011 and 2012 profit decrease. After 2013 profit increase. Again profit decrease in 2016 and it still increase, start in the year 2016.

28. **Excel Crop Care Ltd:** ECCL worked closely with farmers, uplifting productivity and hence uplifting the

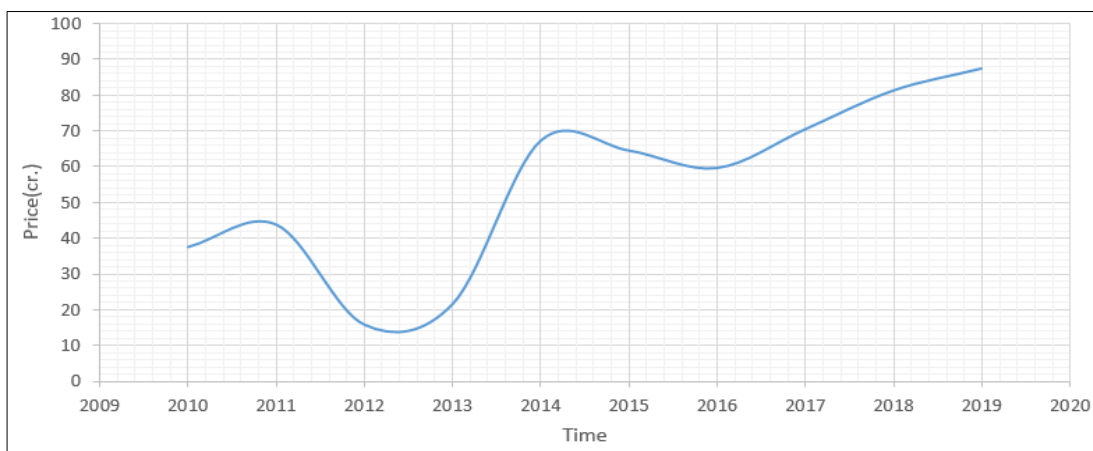


Fig 10: Percentage of market growth over the last 10 years of Excel Crop Care Ltd. (Source- moneycontrol.com)

**Compare in chat among individual company**

When we do calculate total profit in 10 years of each 10 company, we see UPL earn more profit that is 4638cr. in 10

years and Insecticides India Limited earn low profit of them that is 646.4cr. They are all agrochemical company, but they can not earn same profit because they follow different

marketing strategy. As same as we see UPL get more profit 515.33cr. last year (2022) and Insecticides India Limited

earn 80.80cr. on 2022 Market Growth of 10 Years:

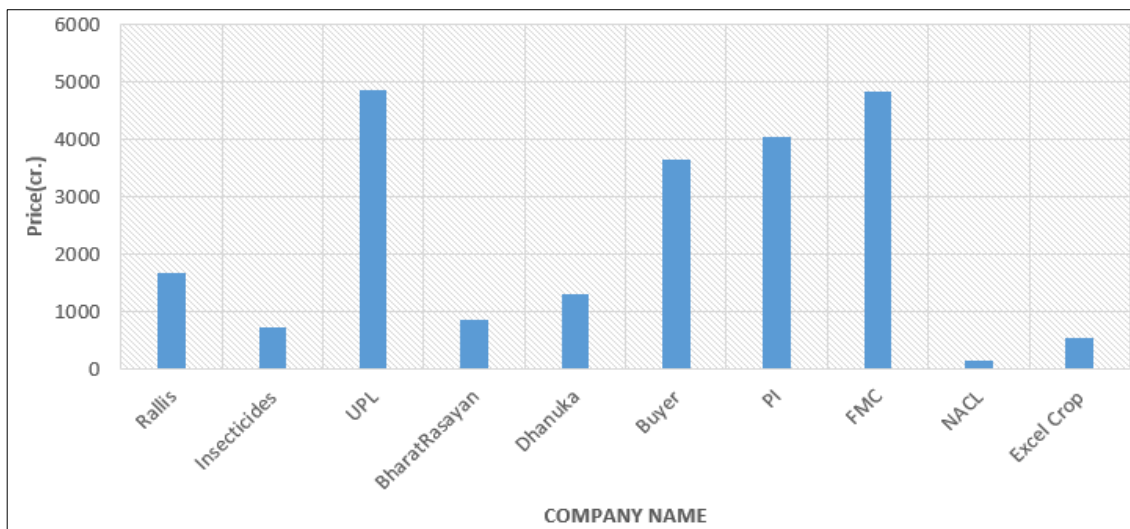


Fig 11: Compare in 10 companies

Table 1: Identify 10 products of 10 company

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Rallis	Reeva 2.5	Cameo	Summit	Neon	Trimbo	Taarak	Tata Panida	Blitox	Sarthak	Ayaan
Insecticides	Misson SC	Mission GR	Tadaaki	Lethal Gold	Flite 71	Himax	Torry	Stuner	Izuki	Tozo
UPL	CythrIn 500EC	Forester	FumicyP	Tlisama EC	Asulox	Balistik	Beetup Flo	Affix	Axidor	Dimix
Bharat	Aandhi	Biltora	Biltop SC	Deep	Farmaan	Biuron	Cleanguard	Viber	Matsuri	Lavazza
Dhanuka	Foster	Mortar	D-one	Fax SC	Targa Super	Sakura	Sempra	Sixer	Conika	Godiwa Super
Buyer	Belt	Confidor	Movento	Sivanto	Adengo	Alino	Corvus	Flint	Luna	Nativo
PI	Keefun	Colt	Colfos	Fluton	Solaro	Wicket	Pimix	Kitazin	Sanipeb	Clutch
FMC	Amadis	Benevia	Coragen	Talstar	Affinity	Galaxy	Critel	Cilpyrox	Frivan	Hocusia
NACL	Profex	Fury	Dxtar	Pestrock	Sirius	Nagastra	Imax	Oscar	Index	Kazan
Excel Crop	Excel Acetacel	Tricel	Tricel Power	Bang X	Weedcel Super	D-Cel	Excel Mera 71	Dimension	Sulfex	Swadheen

**SWOT Analysis of an Indian Agrochemical Industry**

**Strengths**

- More crop production with a short time period
- Low labour cost
- Low cost for crop production
- Crop can grow easy any environmental condition

**Weaknesses**

- High cost for research and development
- Farmers unaware about new product
- Need more distribution system and middlemen
- Educating retailers on product usage and offering competitive prices to farmers

**Opportunities**

- Limited farmland availability, for more crop production need more uses agrochemicals
- Produce Off-season crop like vegetables, flower, etc.
- The changing agriculture landscape and climate

**Threats**

- Decrease soil health
- Competition in market like organic farming, aquaculture, sustainable agriculture, etc.
- Low food quality and decrease food nutrition
- Pesticides break down slowly for this reason it is threat of environment and all living beings.

**Conclusion**

Irrespective of progress achieved in improving the knowledge regarding Agro-Chemical companies in Indian market. By 2030, food grain production in India has to increase at least 2 million tonnes a year to meet the food security needs of the growing population. In the past growth in production resulted from both the area expansion and the yield improvements. Now the prospects of increasing agricultural production through area expansion are severely constrained. Farmers suffer huge losses every year due to different pest. Uses of agro-chemical can reduce losses of crop. Agro-chemical industry is very growing and profitable industry in India. The agrochemical industry has created new jobs for people and production of more food. Green revolution technologies that contributed to the increased agricultural production have now been widely adopted, and the process of diminishing returns to additional input use has set in.

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