

## ***Agrochemicals***

### **INTELLECTUAL CAPITAL IS THE KEY**

***With the global focus of the pesticide industry shifting towards India, all agro companies will have to pool in their resources to meet the working capital needs in the years ahead. Quite clearly, the future will belong to players with strong in-house research and development teams that can develop innovative formulations, backed by a highly motivated sales network.***

Pesticides come in two forms viz., basic material and formulations. The basic pesticides or the technical grade materials are highly toxic and hazardous liquids. The formulations are obtained by processing the technicals with emulsifiers and other agents.

Another way of classifying pesticides would be to group them as insecticides, fungicides and herbicides. The crop protection industry may also be divided into organophosphates, synthetic pyrethroids, organochlorines and carbamates. Now, the in-thing in the market is biopesticides. Before we delve into the problems confronting the industry and the challenges ahead, let us first have a glimpse of the Indian economy and its impact on the agrochemical industry.

The global focus of the pesticide industry, as in the case of other sectors too, is gradually shifting towards India.

### **CROP PROTECTION**

The pesticide market can be classified into three major categories viz., insecticides, herbicides and fungicides. While insecticides and fungicides are used to kill insects and fungus respectively, the herbicides are used to remove weeds and unwanted plants. A small market now exists for rodenticides and fumigants, which are used to eliminate rodents. The composition of the crop protection market on the lines of these categories of pesticides is given in the adjoining table. Organophosphates and synthetic pyrethroids constitute nearly 80 percent of the pesticides produced. Of the top 20 pesticides sold in India, 16 are insecticides. However, the global market is dominated by herbicides, which have a 48 percent share by insecticides and fungicides account for only 29 percent and 17 percent respectively.

<b>India ranks as the second largest manufacturer of technicals in Asia, next only to Japan</b>
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Among the states, Andhra Pradesh, Tamil Nadu, Karnataka and Punjab account for 50 percent of the total pesticide market. AP alone consumes 24 percent of the total pesticides. The herbicides have a good market in Punjab and Haryana, while insecticides are much in demand in the southern states and Maharashtra. The crop protection business is subject to the vagrancies of monsoon, which has a significant impact on Indian agriculture. The only way out is to improve the irrigation sources. For instance, the last two years have been pretty bad for Andhra Pradesh due to drought and cyclone. It is a known fact that if AP sneezes, it sends shivers down the spine of the crop protection industry.

The three cyclones in the coastal regions of the state during the kharif season of 1999 had seriously crippled the market. However, with a promise of a good kharif season in this state which has the highest agrochemical usage, has brought cheers to the sector. The players are all geared up to make up for the heavy losses of the past couple of years.

## **COST PARAMETER**

Over the years, the cream of the profits has all along been reaped only by those players who have a local manufacturing base and a strong brand leadership. This is true despite very low operational efficiencies of the units. The manufacturing plants of technical grades have been operating below 65 percent of the installed capacity. But it is the formulation units which have been the most adversely affected with the percentage of utilization averaging hardly 35 percent. The low capacity utilization is a fall-out of the process of batch production prevalent in the industry. The availability of cheap and skilled labour more than compensates this loss.

The import duty on the technicals was as high as 140 percent until recently. But the government has eased some import restrictions and today the duty on pesticide intermediates is in the range of 10 percent – 30 percent while the import duty on technicals stands at 35 percent. The slashing of the import duty and negation of the need for import licences have done away with the necessity of having a local manufacturing unit. However, the gain on account of exchange fluctuations have been nullified to a large extent and the next millennium would belong to players who produce on their own or better still, source their products from plants in other developing countries like India.

90 percent of the agrochemicals are indigenously produced in the country. With 60 manufacturers of basic molecules, 400 formulators and around 140 product registrations, India ranks as the second largest manufacturer of technicals in Asia, next only to Japan. The Indian pesticide scene is dotted with players of all sizes. Be it the multinationals like Novartis, Rhone-Poulenc Agro, Agrevo, Bayer (India), Cyanamid or Monsanto or the giant Indian companies like Excel Industries, Rallis, United Phosphorous Ltd., Searle India or Gharda – there is room for everyone. A few of these are vying for the entire national market while some are content with regional empires. Quite a few multinationals function as Indian outlets for their parent company and only a few have ventured into direct production as a backward integration. Interestingly, almost all the multinationals operating in the Indian crop protection market have a complete Indian face and are managed by local managements under guidance from the mother company.

Even medium and small players like Bharat Rasayan, Montari Industries, Nagarjuna and Alchemic Organics find a place in the big picture. More than 400 small scale units are engaged in the manufacture of technicals and this sector is also in the formulation business.

The top ten players command 80 percent of the entire market share. Agro business accounts for 45 percent of Novartis's turnover. UPL derives 60 percent of its turnover from basic agrochemicals and is the largest manufacturer of organophosphates. Crop Protection Chemicals account for 32 percent of BASF India's turnover and 62 percent of Bayer's sales. Each player has his own stratagem to promote its products. Indian companies like Montari, Rallis, Lupin and Excel are aggressively export oriented. Indofil

deals only in speciality products while Agrevo and Rhone-Poulenc have dwarfed other players by their sheer size.

Readers may however note that the Indian R & D is confined to improvisation in process technology and does not venture into development of new molecules. The enormous magnitude of investment is just out of the reach of the Indian industries. The price war among the players is hotting up as more and more corporates engage in cutthroat competition. Luring the illiterate farmer through incentives, concessions and extensive credit seems to be the order of the day. The thrust is towards making the most when the iron is hot rather than striving towards a long term growth strategy by empowering the end-user with educational and technological inputs.

## **MISMATCH OF DEMAND & SUPPLY**

The last few years have witnessed a spurt in the agrochemicals companies as is true with the Indian Chemical Industry in general, the agrochemicals are also dogged by huge overcapacity. The total pesticide consumption for 1997-98 stood at 75,000 tpa, as against a production of 96,000 tpa. As a fallout of the price war, the margins have steeply declined. The price of Cypermethrin and Fenvelerate dropped from a one time high of Rs.1,200/kg. and Rs.600/kg. to Rs.450/kg. Monocrotophos has registered a drop from Rs.350/kg. to Rs.225/kg. Of late, even the exports have dropped considerably due to lack of demand for insecticides from the Far East countries.

Biopesticides and farming threaten to conquer a significant share of the agrochemical market in the years to come

First, it was Ciba-Geigy and Sandoz who merged to create the Rs. Six billion life science giant Novartis India. This was followed by the amalgamation of Hoechst, Schering and Plant Genetic System into Agrevo.

RP Agro's strategic alliance with Limagrain, the world's third-ranking seed company recently, gave birth to Rhobio, a Rhone-Poulenc Agro/Biogemma joint venture to conduct research and develop products for marketing in plant biotechnology. Now, the stage is all set for yet another mega merger. The boards of RP Agro and Agrevo have approved their amalgamation.

Currently, RP Agro is a Rs.100 crore entity, while Agrevo has a turnover of more than Rs.300 crore. Agrevo brings to Aventis its impressive research and development bank of seeds and crop protection chemicals. Its state-of-the-art Ankleshwar plant would be the production base for the new entity. Some of Agrevo India's well-entrenched insecticide brands include Decis Spark, Hostathion and Tempo. Rhone-Poulenc Agro ranks seventh in the global crop protection sector. Herbicides and insecticides account for 70 percent of its turnover.

Its Isoxaflutole molecule is quite popular in European and South American markets. Its other popular herbicide Oxadiargyl was launched in China in 1997 under the brand name Topstar and has now been introduced in India this year. Among the insecticides, it sells Fipronil under the Regent brand, which is approved in India and the US as rice and corn insecticide respectively. The merger of Agrevo India Ltd. with Rhone-Poulenc Agro Ltd.

into Aventis Crop Science will go down in history as one of the largest mergers in the global life science scene.

## **IT'S ALL IN THE GENES**

Crop protection chemicals have ruled the roost for more than half a century. However, the day is not far off when biotechnology wipes out the use of pesticides. In fact, the budget has slashed the customs duty on biopesticides from 10 percent to 5 percent. The focus is now on crop production rather than crop protection. Corporates need to look beyond aggressive product selling to marketing total farm solutions. About 50 percent of the arable land in the USA is under genetic seeds. The genetically developed plants have an in-built immuno system, which helps them to fight insects and pests. Thus, lesser pesticides would be required in the future.

Biopesticides and organic farming threaten to conquer a significant share of the agrochemical market in the years to come. To underscore the challenge poised by genetic seeds, let's look at some interesting developments in the last year. The global giant DuPont acquired Protein Technologies International, a seed company for a whopping US \$1.5 billion and followed it with a 20 percent stake in Pioneer Hi-Bred International the leader in bio-technology. DuPont shelled out US \$1.7 billion for this deal.

However, Monsanto Inc., upped DuPont by acquiring the seed divisions of Asgrow Agronomics, Calegne Inc., Holden Foundation Seeds Inc., and Sementes Agrocerec Inc. for a mammoth US \$6 billion. Taking the cue from these leaders, Novartis and Aventis have also geared themselves up to focus mainly on life science.

## **CONCLUSION**

The crop protection market of India is growing at a steady 6 percent per annum and is estimated to touch US \$920 million by 2005. Thus, a sizeable fortune is up for grabs. The future would belong to players with strong in-house development and research teams who could develop innovative formulations backed by a highly motivated sales network. Currently, developing a new molecule costs somewhere between US \$100 million to US \$200 million. Industry sources are apprehensive that this may soon shoot up to US \$500 million. Financial muscle will definitely play a predominant role in the industry shakeout, but the intellectual capital of the corporates would decide the leader.

The number of contestants in the fray would decline as the leaders forge alliances to retain their supremacy, forcing the exit of the small players. Companies would have to pool in their resources to meet the working capital needs in the years to come. Mega-mergers, giant-acquisitions and co-marketing joint ventures cannot be wished away. UPL has provided the cue with alliances for distribution of Novartis products in Korea and France and Bayer and BASF products in Australia and Chile markets. If this is any indicator of the times to come, Indian companies like Excel and Nagarjuna should consider functioning as gateways for the MNCs.

The slant will now be tilted towards the push factor of demand rather than the forces of pull. Healthy communication with the end-user to promote brand awareness is quintessential to maintain the status quo in market share sustenance, but the key to

market penetration lies in educating the consumer in healthy farming techniques. The conventional economy pricing will go out of the window as consumer- defined value addition and Relationship marketing enter the arena.

Investors may buy a few good MNC agro scrips like Novartis and hold on to companies like Rallis, Agrevo and Bayer. RP Agro also promises a good return due to its impending merger with Agrevo. Others like Indofil, Nocil, Lupin, Cyanamid and UPL have to face the test of time. It is better to stay away from weak players like Nagarjuna.

<b>THE TOP TWENTY INDIAN PESTICIDES</b>			
<b>PESTICIDE</b>	<b>TECHNICAL GRADE (MT)</b>	<b>RANK</b>	<b>LEADING PROD.COS.</b>
Monocrotophos	6418	1	Novartis, Lupin, Nocil, UPL
Cypermethrin	1197	2	Gharda, Rallis, UPL, Zeneca
Quinalfos	3400	3	UPL, Novartis
Endosulfan	5025	4	Excel
Fenvalerate 92%	1388	5	Rallis, UPL
BHC	30000	6	---
Isoproturon	3500	7	Agrevo, Gharda
Phorate	4058	8	Cyanamid
Chlorpyrifos	1021	9	Gharda, Lupin, Nocil
Methyl Parathion	2600	10	Bayer
Dimethoate	1720	11	Rallis
Phosphamidon	2321	12	Novartis, UPL, Lupin, Nocil
Malathion	2760	13	Cyanamid
Acephate	1053	14	---
Mancozeb 75%	3951	15	Indofil
Butachlor	2200	16	---
Carbendazime	668	17	---
DDVP 92%	1552	18	Novartis, UPL Lupin, Nocil
Carbofuran	390	19	Rallis
Deltamethrin	18	20	Agrevo