TEL AVIV UNIVERSITY אוניברסיטת תל-אביב

Faculty of Management –The Leon Recanati Graduate School of Business Administration

Makhteshim –Agan Industries (MAIN): The Nature of Growth

Introduction

In June of 2004, after reaching annual sales of $1,177m in 2003, and $891m in 2002, Makhteshim-Agan, the world's largest manufacturer and distributor of generic agrochemicals, published its five year strategic plan, aimed to achieve sales of $1,800m in 2008. It was soon realized that this objective might be achieved far sooner than anyone had originally expected as already, by the end of 2004 sales reached $1,540m

The fast pace of growth has created strategic challenges for the company's senior management: to define the engines of growth that will sustain double-digit growth, achieve double-digit profitability levels, and allow the company to fulfill its aspirations over the next five years, in an industry that has recorded nominal growth of 5.5 % in the decade between 1993-2003.

These decisions must be taken whilst considering the effects of growth in the company's proportions, and the greater scrutiny that it must inevitably be subject to from the dominant players in the market. Any strategy must, furthermore, be consistent with the company's stated mission: *to maximize stakeholder value via sustainable profitable growth; to be the preferred choice for plant protection needs worldwide; to be the first to respond to the market, and, to continue our long term commitment to our customers, the community, and the environment.*

Udi Aharoni from the Faculty of Management prepared this case with the assistance of Gil Dattner as a basis for a case competition. The case does not intend to illustrate effective or ineffective handling or business processes or decisions.

Industry

Structure (exhibit 1)

The agrochemicals industry is a mature and cyclical one. The size of the market in 2004 is estimated at about $30bn.This figure has changed very little since the beginning of the 1990s. The industry was dominated by multi-national chemical conglomerates, who hoped that by combining chemicals-based research and development activities, such as agrochemicals and pharmaceuticals, significant synergies could be realized. However, while pharmaceuticals enjoyed increasing rates of return and a positive public image, agrochemicals experienced just the reverse. As a result, many companies divested their agrochemical businesses. Later, these newly formed agrochemical companies started channelling investment towards seeds and the development of genetically modified (GM) crops (exhibit 2).

The result was a process of industry consolidation, which accelerated in 1999 when conditions in the market deteriorated, while the increased penetration of GM crops further depressed the outlook. One effect of consolidation was a concentration of market share among fewer companies: In 1990 only one company had a market share greater than 10%, in 2003 this number rose to five. The two leading companies today – Bayer and Syngenta – are each comprised of four different companies recently merged. The size of mergers led competition regulators in the EU and US to demand that the newly formed companies divest certain subsidiaries and product lines.

A combination of declining commodity prices and distortive government farm support policies led to an average annual market decline of 3.5% from 1996 to 2002. Even with the recovery in crop prices since 2003, the nominal rate of growth in 2003 (6.2%) was mostly accounted for by the weakening dollar, and in real terms, the market declined by 1.6%. Conditions improved significantly in 2004 as a result of rising commodity prices and farm incomes, as well as good weather conditions in Europe and the US. Concerns over a possible outbreak of Asian soybean rust (fungal disease) helped boost demands for fungicides in Latin America. A number of underlying trends also served to improve the industry fundamentals. Accelerated economic growth in developing markets, particularly China and India, and the increased production of biofuel as an alternative to traditional fossil fuels, created a more stable increase in demand for agricultural commodities, and has led to large increases in production, particularly in Brazil which in the past few years has vastly increased its agricultural output that is both processed into food, and used as cattle feed, because meat too is also experiencing buoyant demand as more and more people in developing countries can afford it. This has in turn has increased the demand for agrochemicals. As well as increasing the area of farmed land, an emphasis has been placed on increasing agricultural productivity through more advanced agricultural methods. This has created increased demand for newer and more sophisticated agrochemicals.

Competition (exhibit 3 & 4)

The industry's competitive environment is stable and characterized by moderate levels of internal rivalry. High barriers of entry that stem from capital-intensive production, and strict regulatory environmental laws affecting both production and registration, act to curb competitive pressure. Cooperation between companies occurs in such areas as production, product re-registration, and distribution. Many of these cooperations are based on personal relations built over many years. While product prices are significant, price wars are, for the most part, avoided. In some instances, larger companies purchase form smaller companies to compensate for a lack of production capacity in times of peak demand. This helps to mitigate competition and prevent price instability created by over-supply.

There are two types of companies in the industry: research-based companies (RBC's, also known as ethical, or basic companies), and, generic companies. RBCs develop and patent new products for which they are able to attain gross margins of 50-60%, and sometimes as high as 90% (although margins decrease over time). As opposed to pharmaceuticals, the price of a product whose patent has expired does not fall steeply. While approximately 67% of the products sold are unpatented, RBCs still possess about 85% of the total market. They are for the most part giant multinational chemical corporations that, with the exception of Syngenta and Monsanto, do not rely on agrochemicals as their main source of revenue; Bayer, the largest company by market share, generates about 20% of its overall revenue from agrochemicals.

Generic companies develop production processes and produce off-patent agrochemicals (products whose patents have expired (exhibit 5). They are, for the most part, more heavily focused on agrochemicals; MAIN and NuFarm generate more than 80% of their revenue from agrochemicals. Since margins are lower on generic products (about 30%), low cost and efficiency are a priority. In recent years, new national competitors have entered local markets for generic agrochemicals; they possess registration know-how, and import material from low-cost producers in China and India. These low-cost producers are, for the time being, still weak in registration and distribution.

Research

Every product is based on an active ingredient (AI); this is a molecule that possesses some attribute that can be used to protect crops from various weeds, diseases or pests. The research process begins with the synthesis and screening of millions of molecules. Molecules that appear to possess some potential are then developed, and if successful, registered. The entire process takes 7-9 years, and consists of numerous tests which assess not only the product's chemical and biological properties, but also its effectiveness, toxicology, and effects on the environment. In 1995, for every 52,000 molecules that were synthesized, on average only one was registered. The entire cost of this process was estimated at around $152m. In 2000, the average number of synthesized molecules per registered product rose to 139,000, and the average cost to $184m. The

rate of revenue from new products has also experienced a gradual decline. The prediction for the future is that off-patent products will serve most of the industry's needs.

Between 1998 and 2002, average expenditure on agrochemical R&D by the ten leading companies fell from 9.4% to 8.2% of sales. Over the same period, R&D on seeds and biotechnology (GM crops) rose from 17.4% to 24.9%, although most of this research yielded little in the way of marketable products. The trend in patent-protected products relative to 'off-patent' products, is, therefore, declining; in 2003, off-patent products accounted for 67% of the market, and this proportion is estimated to grow to 71% by 2007.

Production (exhibit 6)

The traditional agrochemical market consists of three major product groups, all of which are needed for crop protection: herbicides, fungicides, and insecticides. A product's value chain is as follows: raw material, production of active ingredients, formulation (liquid, granules, powder, etc.), packaging, distribution, end-user. Production begins with the manufacture or purchase of raw materials that are then processed into active ingredients, and finally formulated and packaged for sale. Formulation and packaging should be considered as separate processes that are typically simpler, less capital-intensive, and are often carried out by third parties in the target markets. The nature of the production process is very much 'high-tech', requiring computerised systems and specialised personnel to monitor the entire process and make necessary adjustments.

Regulation

The regulation of agrochemical products is one of the most crucial aspects of the industry, and has, over time, become increasingly stringent, time-consuming, and costly. The approval process involves the gathering and development of chemical, toxilogical and environmental data, and a complex system of experiments in order to assess and prove the biological efficacy and environmental effects of a product. In Europe, products must be registered both within the EU, and in every country in which they are sold, while in the US, they must be registered with the Environmental Protection Agency (EPA), and must also comply with any state-specific laws. The necessary data and experiments will also vary across regions according to the differing ecological characteristics (soil, climate, etc.) of local environments. Regulatory standards are not the same for every market; in countries such as Australia and China, registration of products is an easier process; in Brazil registration is difficult to obtain, taking about 3-5 years, and costing between $1.5-2m; while in the US it is both faster and easier, but more costly at $3-12m. Even after registered, products must be periodically re-registered and, are subject to withdrawal from the market if regulations are changed; the EU and EPA, for example, are currently carrying out a review of all the Active Ingredients (AIs) in use, and so far, only a proportion of AIs have been approved, while some have had to be withdrawn. Due to the high costs of generating new data, and the risks these new data could uncover, companies have preferred to withdraw certain products from the market.

There are ways to ease the burden of registration: in certain circumstances, registrations can be purchased (or acquired when purchasing a product); companies will sometimes share the costs of re-registration between them; and finally, when registering a generic product in the US, it need only be established that the basic materials which will be used to produce the final product are similar to that of the original registrant in order to receive registration (compensation is paid to the original registrant for the use of data).

A further important area of regulation is patenting. A product can be patented, off-patent, or (once manufactured by an additional supplier) generic. A patent can be applied to a product, the molecule (AI) that the product is based on, or the production process itself. Patents on products or processes typically last 20 years from the submission of the application. There are also important distinctions between patenting laws in different regions around the world. In the past, Latin America had the shortest patent life at fifteen years; in Europe the patent was valid for twenty years from the date the application was made; and finally, in the United States the patent lasted seventeen years *from the date it was granted*. This final distinction is an important one, in that it allows companies, through delaying tactics, to push back the date of receiving the patent, and thus extend its life.

Marketing

In most markets, companies work with national distributors, who in some cases are also responsible for the formulation process. The products are then sold either to smaller local distributors, or directly to the end-user. The end-users are farmers, whose needs are typically well defined and stable. They are conscious of input costs, and are readily willing to accept innovations that serve a clear advantages. The structure of the distribution chain depends on the particular market concerned; in countries where the market is highly fragmented, such as Italy, or where margins come under pressure from distributors, such as in the US, direct sales are undertaken. This option is limited where the distributor's grip over the local market cannot be circumvented; past attempts have often failed, and sometimes resulted in a subsequent backlash. The size and number of distributors in any one market varies; some markets - such as the UK - are serviced by a few nationwide distributors, while others have numerous distributors, both national and local. Distributors have the most frequent contact with the end user, making them influential in determining demand and an important source of information. Apart from supplying agrochemicals they also supply most of the farmer's inputs, such as seeds and fertilizers.

An important factor in successful marketing is the product portfolio. Different agricultural regions are characterized by different crops, and each crop is characterized by certain pests which it is subject to. Both the types of planted crops and the pests that afflict them change little over time (although unexpected disease outbreaks do occur and call for immediate treatment). Companies will determine and construct an 'optimal' basket of goods per market and per crop. Those that are able to supply a complete set of agrochemical

solutions in a timely manner will gain a competitive advantage. Brand loyalty, though present, is not overly significant: cost sensitivity undermines the potential effect of image branding.

Demand (exhibit 7)

Agrochemicals provide a type of insurance for farmers, and their demand for this insurance will depend on the value of the asset (crop yields) at risk. The main factors influencing short-term (one year) demand are: existing planted areas, expected crop yields, crop prices, and the expected risks of crop disease or insect infestation. A positive outlook for crop prices will result in an increase of planted land area and therefore an increase in the demand for agrochemicals. This process typically has a one year lag effect, given the seasonal nature of farming. One could argue that since seeds and fertilizers are used earlier in the season, and are necessary in order to produce any yield at all (more so with seeds than fertilizers), their demand is less elastic than for agrochemicals. If prices or the expected yield are not good, a farmer may attempt to save on costs by reducing his use of agrochemicals. Alternatively, if prospects are good, a farmer will be willing to invest more to protect his yield. However, given that agrochemicals represent only 8% of the farmer's input prices, the savings that could be enjoyed relative to the risks borne are often not worthwhile (without crop protection a farmer may lose his entire yield).

In recent years, the theory of long-run demand for agrochemicals has undergone a perception shift. It was once thought that demand for crops was driven by the rate of population growth, and that this determined the underlying rate of growth in the agrochemical industry. All this changed with the ascendancy of the Chinese, and to a lesser extent, the Indian economies. Increased prosperity in developing economies has increased the overall global demand for food, which in turn drives the demand for agrochemicals. It is living standards, therefore, particularly in the developing world, that represent the main growth potential for the industry; and which, to a large extent, has been responsible for higher crop prices and lower inventory levels. In recent years, China has been unable to grow sufficient food to meet the huge growth in domestic demand, and has turned to imports to bridge the gap. The Brazilian agricultural market has, in a few years, grown from $1.9bn to $4bn, largely as a result of Chinese demand. This opportunity also contains a latent threat; as the Chinese agrochemical market develops, domestic competitors may pose an increasing threat to incumbent companies. Moreover, as local producers become more sophisticated, they may eventually move further downstream in an effort to capture extra value.-

Agricultural Biotechnology

Genetically modified (GM) crops first began to be commercially applied in 1995; at the time, their use was very limited, and the overall market was valued at only $92m. By 2004 GM crops accounted for 191m acres worldwide, and the market was valued at around $4.7bn, representing 13% of the overall crop protection market. The compound annual growth rate (CAGR) of GM planted areas in the past five years has been in excess of 10%. The two major types of GM crops developed so far are herbicide tolerant (HT) and insect

resistant (IR), with the former generating most of the revenue in the GM market. Between 1998-2003, the CAGR of the Herbicide Tolerant (HT) and Insect Resistant (IR) crop market was 19.2% in real terms, compared to -1.6% for the conventional crop protection market. Geographically, North America represents 76% of the overall market, with Latin America next at 20.5%. The conventional agrochemical market has been hit hardest by HT crops such as Monsanto's *Roundup Ready*, since they largely replace the need for a variety of herbicides with a single, non-selective herbicide (i.e. Glyphosate), that is both cheap and efficient.

The development of new and better products, and introduction into new markets (such as Brazil), may accelerate the growth rate of GM crops and continues to pose a threat to the conventional agrochemical market. But there are also reasons to believe that the GM threat has stabilised and is limited. To begin with, the use of GM crops in markets where their planting is permitted, particularly in the US, is reaching saturation levels, while regions where GM crops are still banned, such as the EU, are not expected to change their position in the near future. Fears of unpredictable and irreversible environmental impact, food safety concerns, and political interests, all fuel resistance to the introduction of GM crops in the EU. Second, GM crops have only proved economically advantageous in four, large size row-crops: soybeans, corn, canola and cotton. Third, the use of GM crops still requires the use of conventional agrochemicals as complementary products. Finally, the increased use of GM crops brings with it increased levels of environmental opposition, which could limit the growth of the market. Future research and development may very well focus on creating crops with enhanced output traits (e.g., increased nutritional quality, vitamin content, etc.) as opposed to useful input traits. The market for the latter is estimated at $5-8bn, while for the former the potential market is estimated at $200-300bn. Since it is likely that GM crops with improved output traits will still require the use of agrochemicals, this in turn may boost, rather than depress, the market for conventional crop protection.

Makhteshim-Agan Industries (MAIN)

MAIN is the largest manufacturer and distributor of generic agrochemicals in the world. It produces a full range of agrochemicals, and is characterized by technological expertise, a broad distribution network, extensive registration capabilities, and speed of reaction to market conditions. In 2003 MAIN achieved sales of $1,177m, and net profits of $103m. In the first 9 months of 2004, sales reached $ 1,129 millions. Over 85% of its revenue is derived from agrochemicals. The company's market share is estimated at about 3.9% (in $ sales), which puts it in 8th place within the industry (exhibits 3 & 8).

MAIN employs over 3,000 people around the world, owns 37 subsidiaries in 22 countries, and sells in over one hundred countries. The entire operation is run by a lean managerial structure that consists of no more than 10 senior executives situated at the company's headquarters in Israel. Some of these managers have a long history with the company, a fact that demonstrates stability, dedication and a wealth of experience in the company's leadership.

Background

Makhteshim was established in 1952 with production facilities located in Beer Sheva (Israel), and Agan in 1945, with a manufacturing base in Ashdod (Israel). Both companies were initially created to serve the needs of the growing Israeli agricultural market. In 1964, Makhteshim became a member of the Koor industrial group. In the 1970s the two companies established an international sales and marketing team known as Makhteshim Agan (MA). The companies grew and became world leaders in generic agrochemicals. In 1978, Makhteshim completed the construction of a new production facility at Ramat Havov (Israel), near the city of Beer-Sheva. Though Koor controlled both companies by this point, they were each publicly listed through IPOs – Agan in 1982, and Makhteshim in 1992.

During the 1980s new generic competitors from Taiwan, Korea, Spain, Italy and Hungary entered the industry. The new competition led MA to search for a competitive advantage, and it was decided to develop the company's registration capabilities. This turned out to be a prescient move; the regulatory environment was becoming stricter, and companies could not survive long in the industry without knowing how to successfully handle the registration process.

By the early 1990s, a new generation of generic competitors from Australia, Denmark and South Africa followed suit and started investing in registration. MA reacted by establishing subsidiaries in key European markets and the United States.

Expansion into Latin America

In the mid-90s, MA leveraged its registration capabilities to capitalize on a window of opportunity in Latin America. Due to differences in patenting laws, an entire generation of agrochemicals went off-patent first in Latin America. The regional market was growing rapidly, and competition was still moderate. This step marked the beginning of a new strategy of aggressive international expansion through acquisitions.

Between 1996 and 2000, MAIN made a series of acquisitions. In Brazil, it acquired Herbitecnica and Defenpar, which it eventually merged to form Milenia, giving MAIN both production and distribution capabilities. In Argentina, the company set up a subsidiary distributor called Magan, and in Colombia it acquired a majority position in a leading distributor called Proficol. Finally, MAIN purchased Aragonesas Agro in Spain, which gave it both distribution and local formulation capabilities. This period also saw the official merger (1998) of the two companies to create MAIN, and a restructuring program announced at the end of 1999.These last developments led to substantial cost savings and a more focused strategic approach.

By the end of the 90s it was clear that the reorganization and expansion strategy had paid off. Revenue in 2000 was $856m, over 40% of which derived from Latin America (compared to 17% in 1995). However, the

concentration of sales represented serious currency and credit risks. These risks became reality in 1999 when the agrochemical market suffered a setback; economic turmoil in Latin America, compounded by crises in the Far East and Russia, led to a decline in prices, sales and profits. MAIN decided to shift its strategy and move the weight of sales from Latin America to a more mature and stable region: Europe.

A Quantum Leap

In 2001, most of MAIN's European sales were channeled through distribution companies that were established in the early 1990s and Aragonesas Agro in Spain. Poor conditions in the industry at this time increased the pace of consolidation, which led to divestitures of product lines creating unique acquisition opportunities. In late 2001, MAIN acquired the global rights to two active ingredients from Aventis, and four active ingredients from Syngenta, as well as the Syngenta cereal fungicide product lines for Scandinavia. In 2002 it acquired Feinchemie Schwebda (FCS), a German agrochemical company involved in registration and distribution. FCS sales at the time were $40m, and it owned distribution companies in France, Italy and the UK, with export sales to other European countries such as Poland and Belgium. In 2002, MAIN purchased 11 out of 35 products divested by Bayer for $200m. These products constituted a significant addition to the company's product portfolio.

MAIN now had both the products and the means of distribution to execute an aggressive expansion in the European market. The combination of new product lines and fully owned distribution channels brought significant growth, which also boosted sales of the company's older products. Other events on the macro level, in particular the strengthening of the Euro against the Dollar, an improvement in global economic conditions, and the recovery of crop prices, contributed to the company's accelerated growth. The Latin America economies had began to recover, and an outbreak of soybean rust in Brazil provided a further boost in demand. In fact, despite a more conservative approach, sales in Latin America actually grew in 2003. In that year 45% of the company's sales were in Europe, and 26% in Latin America.

2004 brought with it another shift in strategic focus, and new goals. Three main areas were targeted under the new strategy: increased expansion in developed markets, and in particular the North American market; a concerted shift from a production-oriented to a marketing and service-oriented approach; and the development of non-crop businesses.

Functional Strategies

Research and Development

Almost all of MAIN's R&D is directed towards the development of production and formulation processes, or programs aimed at registering products. In 2003, R&D activities accounted for about $15m, and regulatory costs and investments reached $30m. The company does not have the technical infrastructure or technology

to carry out the screening process necessary to develop new products from the ground up. However, it can acquire an active ingredient after its potential has been discovered and then develop the product itself. In 1995, MAIN purchased the patent and marketing rights for Novaluron (AI) from Isagro. It went on to develop the active ingredient under the brand name of Rimon, the company's first, and to date only, proprietary product. Rimon was first introduced in 1999 and has proven very successful. Today it is marketed in 40 countries worldwide with sales of $30m in 2004 (100% increase compared to last year).

Registration

MAIN's ability in this field represents a significant core competency. Today, the company has more than 100 people involved in registration, and possesses over 4,000 registrations in more than 100 countries. Registration costs are estimated at 1.5-2.5% of annual revenues from agrochemicals. In 2003, the company received a further 120 new registrations. This capability has also helped to facilitate the company's move into other activities where a similar registration process is necessary.

Production

Throughout its history, MAIN has dedicated considerable resources towards the development of production processes that are both efficient and technologically advanced. This allows the company to efficiently and economically produce agrochemicals when their patent expires, and is key to their cost-leadership abilities, and their position as the largest generic company in the industry. In some cases, MAIN is able to manufacture the product at a lower cost than the original inventor.

Production takes place at the company's plants in Israel and Brazil. It also owns formulation facilities in Spain, Greece, and Colombia. As part of its current strategy (high margins and marketing orientation), investment in new production capabilities is intentionally limited. In the future, it is possible that any significant expansion of production capabilities will be outsourced.

Product Portfolio (exhibit 9)

MAIN's product split by sales is roughly in line with that of the industry. It owns about 70 active ingredients, compared to approximately 100 for Syngenta and Bayer, and 30 each for Dow and DuPont. Creating the optimal product mix is a key part of the company's strategy. There are two reasons for this: first, the proportion of new to old products in a product portfolio has a significant impact on gross margin levels. Gross margins on old products are about 30%, compared to a minimum of 50% for newer ones. Currently, old products represent about 70% of MAIN's portfolio, it plans to reduce this proportion to 60% by 2008 (exhibit 10). Secondly, successful marketing depends on the company's ability to provide a complete range of solutions for every crop, and every market.

MAIN expands its product portfolio by a combination of new product introductions, product acquisitions, company acquisitions, or through cooperation with other companies. The acquisition of RiceCo, for example, provided the company with solutions for rice, where it traditionally had limited business. Finally, the creation of ethical products, such as Rimon, remains a possibility given the right opportunity. Japanese and Korean companies that carry out extensive molecule screening represent a potential source for such cooperation.

Products acquired by MAIN typically experience a 'three year sales effect', characterised by lower than average initial sales in the first year after acquisition, a return to average levels in the second, and an above average in the third. The initial effect is caused by a supply glut created by the selling company, while the second and third year effects are a result of a concerted sales effort. Following this, levels of sales tend to level off. Sales of related products (sold in the same market) will often also enjoy increased sales as a result of synergies.

Geographical Split (exhibit 11)

In line with its current strategy, 2004 saw MAIN carry out a series of moves to increase its pace of penetration in developed markets. In the US the company made three significant acquisitions in 2004: the Farm Saver group, a generic agrochemical distributor; a 45% stake in Control Solutions, a non-crop distributor; and finally, its subsidiary Proficol acquired a 50% stake in RiceCo from DuPont. In addition, Rimon was approved for the US market in 2004. The upcoming patent expiry of 15 products in the US represents a further potential source of growth in the future. In Australia, MAIN purchased Farmoz, the fourth largest agrochemical distributor in Australia, which owns some 200 registrations for 40 active ingredients. 2004 also saw the approval of Rimon for use in Japan. This constituted a significant step for the company's expansion plans in Japan, a market characterized by extremely strict regulatory controls, and where the company was, in the past, hampered by a lack of products for rice. Finally, MAIN announced the acquisition of a 49% stake in Mabeno, a Dutch distribution company. Mabeno owns distribution networks in the Netherlands, Belgium, Luxembourg, Denmark, Sweden, Norway, and Finland. This move strengthens the company's position in Northern Europe, further consolidating its competitive position in the region.

Marketing

The market today is characterized by stable needs and increasing buyer power. This means that there is relatively greater value to be captured in downstream activities, such as registration, distribution and marketing. Traditionally, MAIN has been a production-orientated company, but this has begun to change with a shift of focus towards a more marketing and service orientation. There is increased awareness of the need to create brands, to improve the product offering through an optimal product mix and use of incentives and bundling schemes. There is also more emphasis on providing responsiveness to the customer and

flexibility in service and pricing. The creation of strategic partnerships and outsourcing of production may, in the future, be a part of this strategy.

Sales and distribution

MAIN works through regional sales offices (distribution companies), or, where not established, through local agents that sell to independent distributors. Almost all of the company's sales are done through distributors. There are two regional sales centres that oversee various aspects of planning, such as logistics and finances: the first is in Brussels (MAICC) and is responsible for all the European subsidiaries activities; the second is in Miami, and is responsible for the promotion of sales in Latin America (excluding Brazil). Brazil and North America are given a greater degree of independence due to the size and strategic importance of these markets. Despite the existence of these centres, the company's approach is to promote local initiative as far as is possible.

Most of production takes place at the company's facilities in Israel, and from there products are shipped out of the country's two main ports to destination markets. Only in rare circumstances are products transported by air. There are significant disadvantages to this physical supply chain. To begin with, most of the larger companies are based either in North America, or Europe, and proximity to the market gives them an advantage in terms of shipping times and costs. Furthermore, reliance on Israeli's ports carries the risk of supply disruption as a result of strikes, such as occurred in 2004. The consequences of such disruptions can be very severe. In order to mitigate these factors, an emphasis is placed on careful planning; levels of demand need to be forecasted as accurately as possible, and contingency plans in the case of port strikes must be prepared and applicable at short notice.

Market penetration

Through extensive experience, MAIN is able to accurately predict the reaction of consumers and competitors, as well as the potential costs and sales of a new venture. This allow is to act quickly and as a result MAIN enjoys a high success rate for new ventures. The company applies tried and tested criteria when introducing a new product or penetrating a new market. In the former case, the company will consider the following factors: potential sales, profits, the market share that the product can capture, cost of registration, and future sources of threat to the product. It will also consider how a new product fits in with the crops grown in a particular market, and how it fits in with the product portfolio offered for that market. When entering a new market, MAIN will consider several aspects of the target market. First its size: the company focuses on the 10-15 largest markets that offer the greatest potential for high volume sales. Secondly, ease of entry into the market is considered: markets that are harder to enter for other generics are preferred. Finally, regulation is considered: markets with a more structured regulatory regime are usually more organized and preferred.

Acquisitions

Over the last ten years, the company has specialized in the acquisition of small and mid-sized companies. This competency has played an integral part in the successful implementation of the company's strategies. As with market penetration, MAIN's success in conducting acquisitions stems from a well defined formula that is consistently re-applied. The ability to successfully apply this formula rests on the company's lean managerial structure, which lends flexibility and speed of reaction to acquisition opportunities.

The formula for acquisitions consists of two main parts: a developed criteria for targeting companies, and integration method. Whether a result of opportunity, or a targeted purchase, acquired companies need to fill a gap that represents a key success factor in the attainment of a strategic objective. This can be either in terms of products, marketing and distribution, or production. The initial and integral part of the integration process is usually the purchase price. Quite often, the final price will be conditioned upon attainment of the acquired company's short-term (1-3 years) business goals. This creates an effective incentive that helps secure cooperation and increase the chances of a successful integration. MAIN does not attempt to impose its own culture on companies it acquires, and, if possible, will avoid purchasing a company outright. It will instead set tight objectives in areas such as sales, pricing and credit. Otherwise, the acquired company is given a good deal of latitude, and is for the most part left intact. This method of delegation within a carefully defined operational structure has allowed MAIN to manage a multinational operation consisting of numerous subsidiaries around the world without, so far, having to expand MAIN's managerial structure.

Finance (exhibits 12 & 13)

Financial strategy is derived from, and is an integral part of the company's overall strategy. Effective financial management enables the company to achieve its qualitative and quantitative goals. Despite a 32% increase in sales in 2003, cost of operations went down from 19% to 18.5%. The company also places emphasis on an efficient working capital structure. This involves careful management of inventory levels, trade receivables (monitoring methods of customer selection and revenue collection), and trade payables. These last two components of the working capital represent the company's cash cycle, to which MAIN has made significant improvements, and as a result has realized substantial savings. The company has in the last few years paid off a substantial proportion of its debts. Financing costs in 2003 represented about 3% of sales, and are expected to be reduced further in 2004. Maintaining investment in fixed assets at the level of depreciation is another way that costs are controlled.

The company is also engaged in a $250m securitization agreement with Rabo Bank which ensures a steady and secure cash flow. In 2003, the company generated operating cash flow of $250m, compared with $108m for 2002, and $10m for 1997. MAIN's financial management is also responsible for managing credit risk, currency risk, interest-rate risk, and fluctuations in prices of raw materials. These risks are managed where

necessary through the use of securitization, derivative instruments, long term supply agreements, and forward contracts.

Environment

Involvement with the production, storage, transfer and spraying of chemicals, involves inherent risks of environmental pollution and contamination. In 2003, the company incurred costs of $22m related to adherence to environmental laws, and initiatives aimed at minimizing effects on the environment. MAIN has also committed, in agreement with the Israeli Ministry of the Environment, to set up facilities over the next five years for the biological treatment of waste at its production facilities in Israel. The Ministry may yet set further conditions on the operation of the plant, the costs of which cannot be forecasted.

Non-core activities (exhibit 14)

MAIN's non-core activities are divided into two areas: non-agrochemical (non-agro), and non–crop activities. The company has been leveraging its expertise in chemical synthesis gained from the core business of agrochemicals to develop a number of non-agro businesses (non-agro). Sales of non-agro products increased from $118m in 2000 to $142.6m in 2003, and to $181.8m in 2004. The majority of sales in these products are in the US, Japan and European markets.

Non-Agro Businesses

Antioxidants/vitamins/functional food ingredients

In recent years there has been growing awareness of the powerful antioxidant properties possessed by lycopene, a phytochemical found in significant quantities in tomatoes. MAIN's subsidiary LycoRed Natural Products Industries, founded in Israel in 1995, and located in Beer Sheva, manufactures and sells naturally derived (lycopene can also be created synthetically) tomato-based products for the dietary supplements, cosmetic, food and health-food industries. LycoRed's target markets are estimated at $15bn globally, and are projected to continue growing through 2008 at an average rate of 6.8%, as a result of global trends of health and convenience foods.

LycoRed also specializes in the microencapsulation of nutritional ingredients and preparing premixes of nutritional ingredients. Its subsidiary, Biodar, is a world-class player in microencapsulated vitamins and minerals, and innovator of gelatine-free beadlets. In 2003, LycoRed acquired Nutriblend, a UK-based nutritional supplements business. In 2004, it proceeded to acquire Karma Pharm (a pharmaceutical R&D startup). Karma Pharm develops generic controlled-release oral drug delivery products, in addition to added-value generic poorly soluble and fast dissolving drugs, which complement Biodar's micro-encapsulation

technologies. Currently the oral drug delivery market is estimated at $38bn. The annual growth of the Drug Delivery Systems (DDS) market is 15% (compared to 7% p.a. growth of the total drug market).

Aroma chemicals

Agan Aroma & Fine Chemicals specializes in the production of aroma chemicals used in the perfumes, detergents, hair and skin-care products, and household products (such as cleaning materials and air fresheners). Some of the company's major clients for these products are: P&G, Symrise, Quest, IFF, and Givaudan. The global flavour and fragrance market is estimated at $16.3bn in 2003. The four main segments are: flavour compositions (43%); fragrance compounds(27%); natural extracts and oils (17%); and aroma chemicals (13%). In the next 4-5 years, the flavour and fragrance market is expected to grow at a rate of 2-3% per annum.

Optical Brighteners

The company produces a range of optical brighteners (making fabrics whiter). The products are environmentally safe as no ozone depleting chemicals are used.

Other

MAIN produces and sells other fine chemicals and intermediates for use as pharmaceutical intermediates and burning-rate moderators. These products, some of which are by-products of MAIN’s core activities, are sold to various industrial manufacturers. Other products include hydrogen peroxide (used mostly for the pulp and chemical industry), electrolysis products, and polymers (mainly polyester) marketed to the plastics and construction industries. Most of these products are not marketed through the existing agrochemical distribution network. Rather, they are sold through alternative distribution channels, or directly to a small number of large multinational companies and select customers.

The non-crop market

Apart from crop protection, agrochemicals are used in a variety of areas such as industry, public health, forestry, turf, and, in a separate category, animal health. The advantages of these markets are: non-seasonality, similar regulatory demands, no threat from biotechnology, and in most markets, higher profitability levels. In 2003, the non-crop market (excluding animal health) grew by an estimated 6% to over $5bn, although the company estimates that only part of the market, estimated at $1.8bn, is relevant to itself (much of the market is too small or fragmented to represent a viable opportunity). Demand for agrochemicals in some areas, such as forestry and public health have demonstrated double digit growth levels in the past few years.

The animal health market is another, though distinct, non-crop market. The market is estimated at about $12bn (2003), with North America accounting for about 37% of sales, followed by W. Europe (26%). The main products are parasiticides, anti-infectives, medicinal feed additives, biologicals, and other pharmaceuticals.

Although the non-crop market represents significant opportunities, there are certain drawbacks. While production and registration are similar in both areas, the marketing and distribution of the products are different, as is the target market. Branding and advertising play a greater role in the non-crop market than they do in the crop market. There is also a clearer advantage to be had by research based companies in this industry.

The challenge

Over the last few years, the majority of MAIN's growth has come from small to medium acquisitions and organic growth. The significant growth in the size of the company as a result of this process will, in the future, limit the relative growth effect from traditional sources of expansion. The question therefore remains, what will be the source of future growth that can achieve company's objectives? Will it be more of the same, only in greater quantities, larger-scale acquisitions (and if so where), increased expansion into non-core activities, or a large-scale diversification into another industry, such as pharmaceuticals?

Exhibit 1

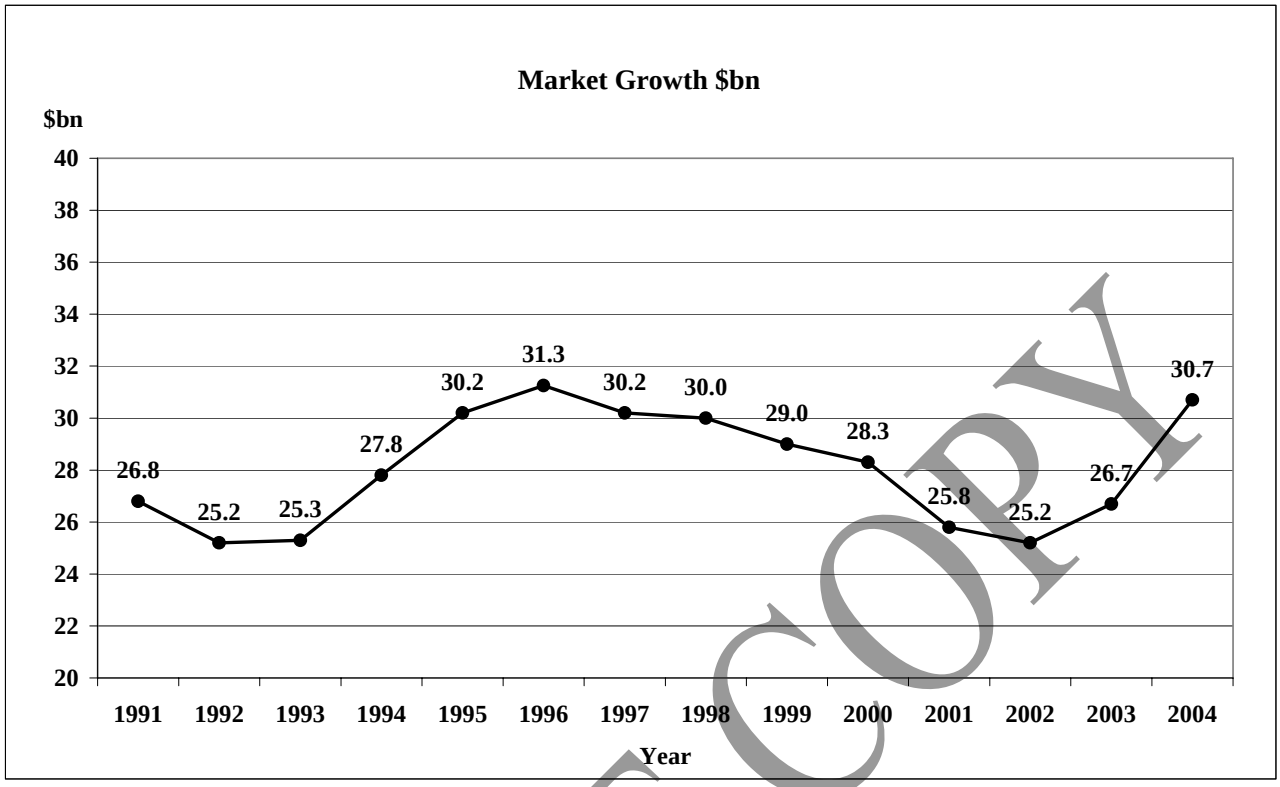

Exhibit 2

Seeds

The seed market is divided into conventionally bred seeds, and biotechnology derived seeds (GM crops). Although to some extent distinct activities, the two areas have become increasingly integrated. Many of the leading seed companies today are also heavily involved in the development and breeding of GM seeds (Monsanto, Syngenta). The seed market as at 2003 is valued at $17bn, $13bn of which is accounted for by sales of conventional seeds, and $4bn by GM seeds. Although there are some dedicated seed companies, many of the leading companies in the industry are also involved in agrochemicals. While both seeds and agrochemicals go through the same marketing and distribution network, development and production activities are different to the agrochemicals industry, requiring different expertise and technology.

Agricultural Biotechnology is divided into the development and production of GM seeds with enhanced input and output traits. The former helps the farmer produce better yields more efficiently, while the latter offers the consumer enhanced nutritional value crops. It is argued that AgBio will play a central role in meeting the food demands of a growing world population with limited natural resources. Involvement in AgBio requires a substantial investment in R&D in order to develop/acquire the necessary know-how and technology. The average research and development cost per product ranges from $50m-$100m, with a time-to-market of about 8 years. Despite the potential for AgBio, it remains to be seen whether it will be more widely accepted and used in the future.

Sales of Agrochemicals vs. Seeds/Biotechnology				
	2004		2003	
Company	**Agrochemical**	**Seeds/Biotechnology**	**Agrochemical**	**Seeds/Biotechnology**
Bayer	7,000	386	6,207	306
Syngenta	6,030	1,239	5,421	1,104
BASF	4,166	0	3,589	0
Dow	3,143	225	2,800	N/A
Monsanto	2,864	2,353	2,784	1,971
DuPont	2,210	2,620	2,010	2,263

Source: Phillips McDougall

Exhibit 3

Agro Market $1,000					
	2004	**2003**	**2002**	**% Chg 04-03**	**M.S 04**
Bayer (including Aventis)*	7,000	6,207	6,001	12.8	19.8
Syngenta	6,030	5,421	5,260	11.2	17.0
BASF	4,166	3,589	2,795	16.1	11.8
Dow	3,143	2,800	2,525	12.3	8.9
Monsanto	2,864	2,784	2,848	2.9	8.1
DuPont	2,210	2,010	1,793	10.0	6.2
Makhteshim -Agan	1,358	1,035	776	31.2	3.8
Sumitomo Chemical	1,358	1,235	838	10.0	3.8
Nufarm	1,170	859	564	36.2	3.3
Arysta	791	604	554	31.0	2.2
FMC	704	640	615	10.0	2.0
Cheminova	492	374	284	31.6	1.4
Kumiai		340	324		
Nissan		319	271		
Ishihara		317	298		
Agro Market**	30,725	26,710	25,150		

*Bayer 2002 sales on proforma basis of full year from Aventis

** Total companies sales exceed total market size as it includes cross sales between companies.

Source: Phillips McDougall

Exhibit 4

Main competitors

Bayer

Bayer CropScience, part of the global pharmaceutical company Bayer, is the world leading research-based provider of agrochemicals. Formed from a merger of two large firms and based in Germany, Bayer CropScience focuses on crop protection chemicals, but is also involved in plant biotechnology and seeds (25% of sales). Bayer's main market is the European one (37%) followed by the North American market (23%).

In 2002 Bayer purchased the crop protection business of Aventis (sales: 3,800M$ in 2001), and although it was forced by the regulators to divest some of its products, it has established itself as the leading company in the industry. Prior to the acquisition, Bayer focused on R&D and new product lines. Now it has the advantage of a very broad portfolio for crop treatment worldwide.

Bayer has also gone through a restructuring process, dividing into four independent subgroups (of which one –Lanxess –focused on chemical production- was later divested and floated as a separate entity). The animal health business was transferred from the agro department to the healthcare subgroup. The crop protection operations are organized along regional lines, to fully use the potential of the wide product range.

Bayer also enhanced its involvement in seeds and genomics business, focusing primarily on the American market. The research in this area (through acquisitions of seed treatment companies) is aimed to develop both input and output traits for crops. But the investment in these fields is not nearly as heavy as that by Monsanto, Syngenta and DuPont.

In 2003 Bayer CropScience invested 722m Euro in R&D. Sales in that year reached 5,764m Euro ($6,500m- 20% increase from the previous year.

Syngenta

Syngenta was established in December 1999 as a merger of two divested agrochemical businesses of two pharmaceutical companies: Astra Zeneca and Novartis. The merger and IPO were completed in late 2000. Since then Syngenta has expanded through further acquisitions.

Currently it is the 2nd biggest company in the crop protection industry, and third in the commercial seeds market. Its most important markets are North America (33%) and Western Europe (30%), followed by Latin America (15%) and East Asia (13%).

In 2000 Syngenta had to divest several products due to regulatory requirements. Today Syngenta has a broad portfolio, and is the world leader in cereal herbicides and fruit fungicides.

Syngenta invested last year about $450m in crop protection R&D, and a further $145m in plant genomics and biotechnology.

In 2003 the crop protection sales of Syngenta increased by 4.7%. Sales in 2003 were approximately $6,600m – mostly from agrochemicals (84%), but over $1,000m from seeds.

BASF

BASF is a major supplier of agricultural products and fine chemicals such as pharmaceutical active ingredients, vitamins and aroma chemicals. The company was also a leading pharmaceutical producer, but sold this business in 2001.

BASF focuses mainly on the West European market (40% of sales), and the North American market (30%). In fact, many of the acquisitions made by the company have been focused on expanding its business in the USA. The largest and most significant acquisition was made in 2000, with the purchase of the worldwide crop protection business of Cyanamid from American Home products, a pharmaceutical company. Also, in 2003, BASF has bought several product rights from Bayer. At the same time, BASF has sold some of its own product lines to Nufarm and other companies.

R&D expenses in 2003 were $270m. BASF is also involved in biotechnological research with two allies specializing on plant genetics. It has formed a new company focusing on plant science, to develop disease resistant crop as well as plants enriched with vitamins, but for now has no sales in this area

63% of sales in 2003 (3,200m Euro-$3,600m) were in the agro business, and another $1,800m in fine chemicals.

Dow

Dow is a leader in science and technology, providing innovative chemical, plastic and agricultural products and services to many markets worldwide.

Dow AgroSciences accounts for 14% of the group's sales, and is the most profitable subgroup. Since 2002 it is divided into three functional groups: crop protection, pest control and seeds and genomics. Other two units are regional: one is in charge of the American market (40% of sales), and the other is responsible for all other markets.

Over the last few years Dow has gone into joint ventures and acquisitions, enhancing its production, distributing and marketing capabilities in Europe, Latin America, South Africa and Japan. It has also introduced a number of new products which contributed to a significant increase in sales.

In 2000 Dow has reached an agreement with Monsanto, so that Dow chemicals will supply intermediates to Monsanto, in return to access to registration packages for glyphosate. On another front Dow cooperates with BASF in R&D aimed at improving input and output traits in canola. Seed sales in 2003 were increased in 8% and amounted to $208m.

In 2003 Dow invested in R&D $300m. Total sales were $3,000m, and grew to $3400m in 2004.

Monsanto

Monsanto was ranked 5th in the agrochemical industry last year, with sales of 2.7B$. Its crop protection sales account for 55% of the entire business, focusing primarily on herbicides (98% of sales). 39% of the sales are generated from seeds and another 6% from animal health products. The main market is North America

(55%), followed by Latin America (21%). Monsanto has been ahead of the market for several years, but sales have declined over the last five years, since its patent for Glyphosate expired. (Glyphosate is the world leading agrochemical product – it's a non-selective herbicide developed to work with herbicide tolerant crops. It is well known in Monsanto's brand name Roundup, and can be used on a wide range of crops). At the same time, seed sales increased by over 20%.

In April 2000 Monsanto a pharmaceutical and agrochemical company merged with Pharmacia & Upjohn, creating Pharmacia Inc. In late 2000, Pharmacia Inc. floated 15% of Monsanto, which became the seed and crop protection chemicals businesses. In 2002, Pharmacia Inc distributed the balance of Monsanto shares to its shareholders. Monsanto is shifting its strategic interest from agrochemicals to seeds and traits. Its strategy is based on life sciences, and most of its R&D is biotechnological, developing seeds based on advanced genomics. Monsanto's investment in R&D is estimated at $490m, which makes it a leader in this area.

Monsanto has purchased several seed companies, but kept some of the original brand names for marketing reasons. The seed business – both conventional seeds and GM sold $1,900m in 2003.

DuPont

DuPont is an R&D company which offers a wide range of innovative products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel. 1997 DuPont embarked on a strategy of fast growth, based on both its chemical and biological industrial capabilities. On the other hand, DuPont gave up its energy business. DuPont Agricultural group is divided into crop protection (37% of sales), seeds (41%) and nutrition & health (22%).

Between 1997 and 2002 its crop protection sales decreased continuously. DuPont's previous advantage in the herbicide product suffered from the introduction of crops with the Roundup Ready trait. In 1998, the company bought Griffin LLC a generic distributor of CPP in North America, with production capacity. In 2003, it acquired the full 100% of the company, integrating its distribution into DuPont. North America accounts for 40% of DuPont's sales the second market is West Europe with 22%).

DuPont has a strong R&D base in the GMO's sector and is the owner of the world's leading corn seed company, Pioneer. In the crop protection business it has lost some of its portfolio strength and needs to make up for it either by purchasing more product lines or by generating new products through R&D.

R&D expenditure in 2003 was $195m. Sales were $5,500m

Sumitomo

Sumitomo is a Japan-based chemical company with crop protection business generating 12.5% of all sales. Sumitomo is also involved in pharmaceuticals (16%). After years of steady growth, Sumitomo's agrochemicals leaped high since 2001, with 47% increase in sales in 2003. This success is attributed to the acquisition of Takeda Agro Company in 2002 – and to the strengthening of the Yen. The company is investing in developing non-crop agrochemicals, for home and garden, golf course, forestry and railroad sectors.

Sumitomo provides insecticides (38%), herbicides and fungicides. It sells mostly in the South-East Asian market (50% of sales) and Western Europe (24%).

Sumitomo invested $105m in crop protection R&D, but most of its growth in this market in the last few years was due to mergers and acquisitions. The company aims at expanding its international activities, and has made acquisitions that would give better access to North America and Western Europe. Sales in 2003 were $1,200m.

Nufarm

Nufarm Limited is an Australian-based company, ranked 9th in the agrochemical market. Its crop protection sales reached 860M$ in 2003, accounting for 90% of the entire business. The other 10% are generated from industrial and fine chemicals. Nufarm is one of the fastest growing companies in the industry. Only last year it managed to increase sales by 28%.

Nufarm focuses mainly on herbicides (90%). Over the last four years it made several acquisitions, including selective Monsanto herbicides in Australia, as well as products from BASF. These were aimed at strengthening product lines and proved successful in enhancing sales in Australia. At the same time, the acquisitions expanded Nufarm's manufacturing capabilities.

Nufarms main market is Australia and East Asia, generating over 52% of sales. Other markets are North America and Western Europe with 20% each.

Nufarm invests only $15m annually in R&D. It focuses on product differentiation by innovative formulation and packaging techniques.

FMC

FMC Crop Protection accounts for a third of the company's sales. Most of FMC's revenue comes from industrial chemicals (40%) and specialty chemicals, which include food ingredients, pharmaceutical intermediates and lithium products. FMC's energy and transport business were moved in 2001 into a separate company (FMC Technologies).

FMC specializes mostly on insecticides (76% of sales) and the rest are herbicides. In 2003 crop protection sales grew by 4%, while the operating profits rose by 18%. The main markets are North America (35%) and Latin America (32%), with 15% in East Asia (increased demand for insecticides) and only 12% in Europe. (The product range doesn't cover well European needs). Part of the sales is made through other agrochemical companies.

FMC crop protection has grown through market and product development, and has not made any significant acquisitions. In 2003 $65m were invested in agrochemical R&D. The research is focused on insecticides.

Sales of the agricultural group in 2003 were approximately $2,000m. $640m were crop protection products.

Exhibit 5

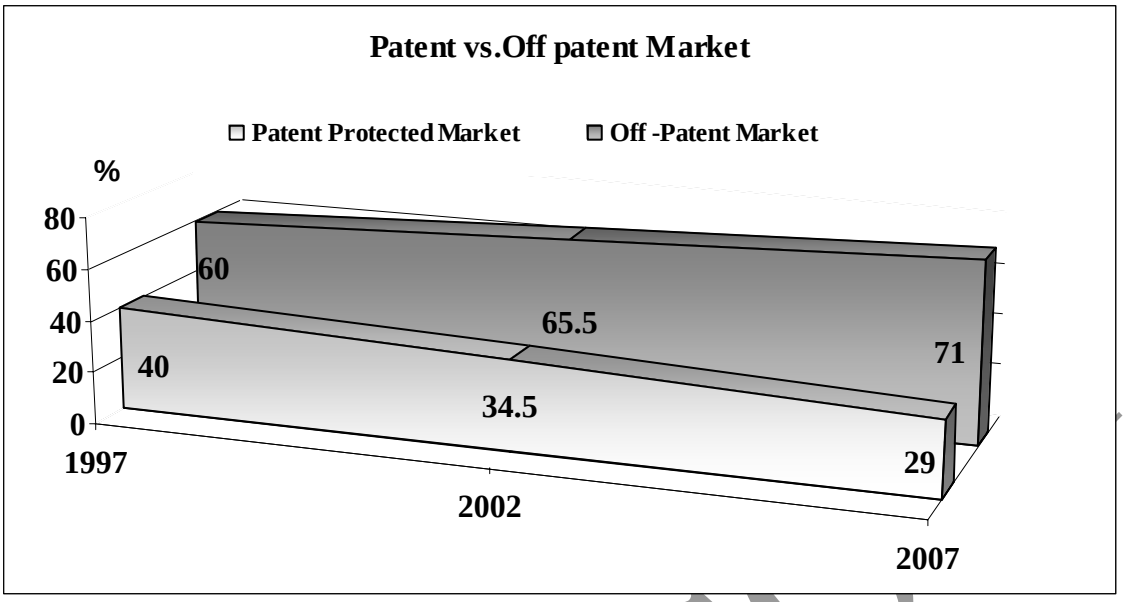

Exhibit 6

SALES BY SECTOR-M$			
	2004	2003	2002
Herbicides	14,656	13,190	12,490
Insecticides	7,681	6,708	6,363
Fungicides	7,343	5,795	5,425
Others	1,045	942	872
Total	30,725	26,635	25,150

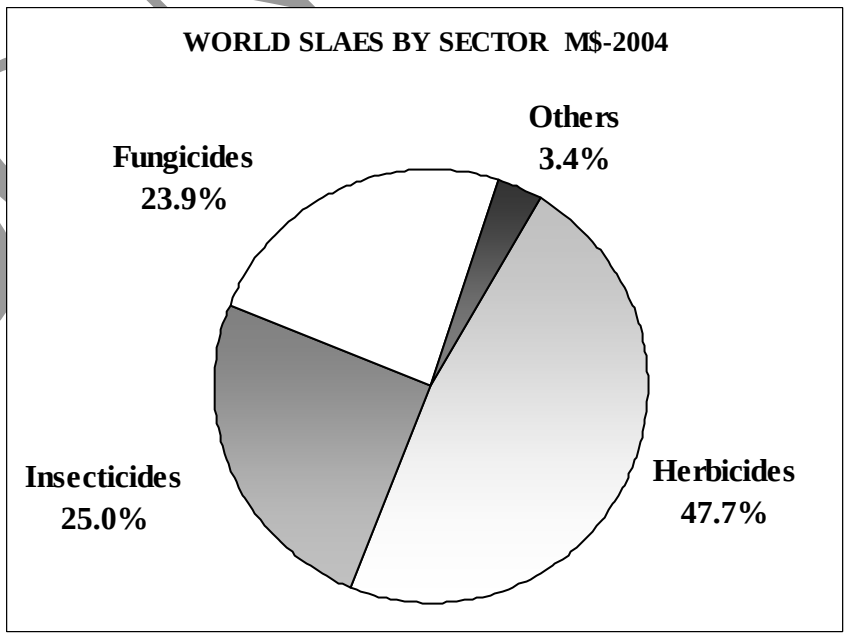

Exhibit 7

GEOGRAPHICAL DISTRIBUTAION-M$			
	2004	2003	2002
North America	7,558	8,052	7,793
Latin America	5,469	4,095	4,000
Europe	9,033	7,445	6,703
Asia	7,558	5,770	5,507
Rest	1,107	1,273	1,147
Total	30,725	26,635	25,150

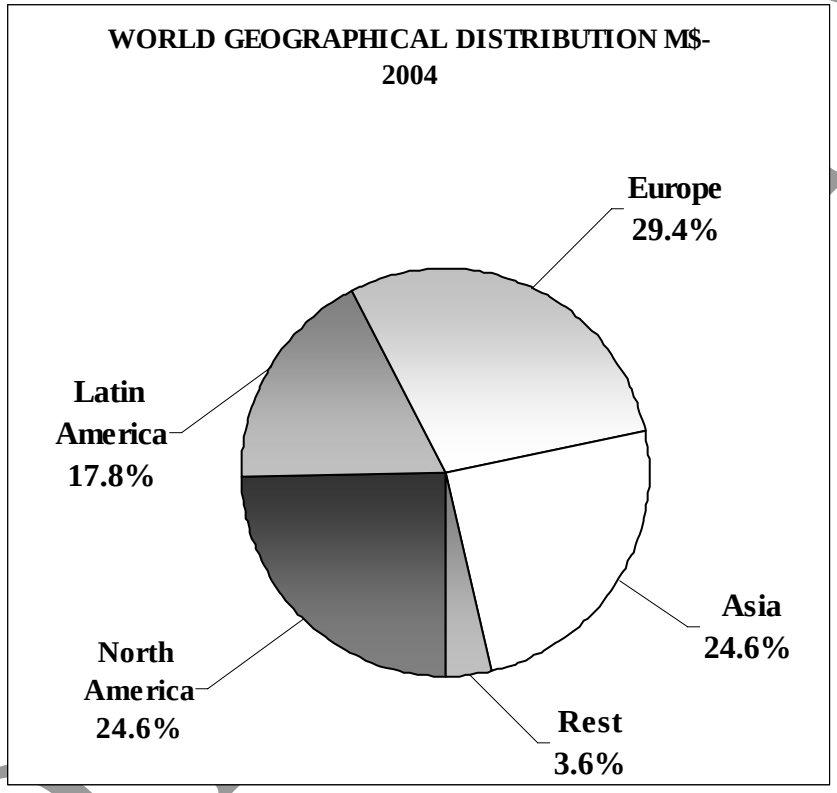

Exhibit 8

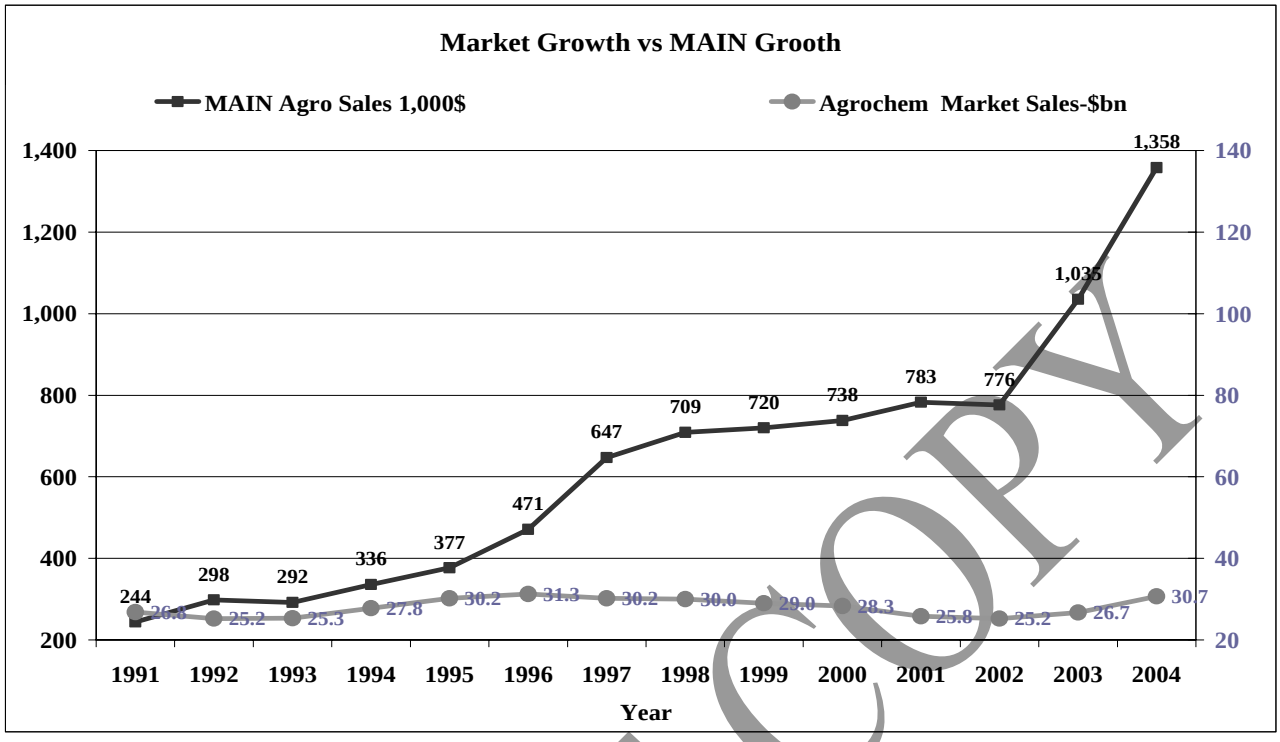

Exhibit 9

SALES BY SECTOR-M$			
	2004	2003	2002
Herbicides	771.4	592.8	432.8
Insecticides	317.9	257.1	196.2
Fungicides	268.6	184.9	146.6
Non Crop & Others	181.8	142.5	115.3
Total	1,539.7	1,177.3	890.9

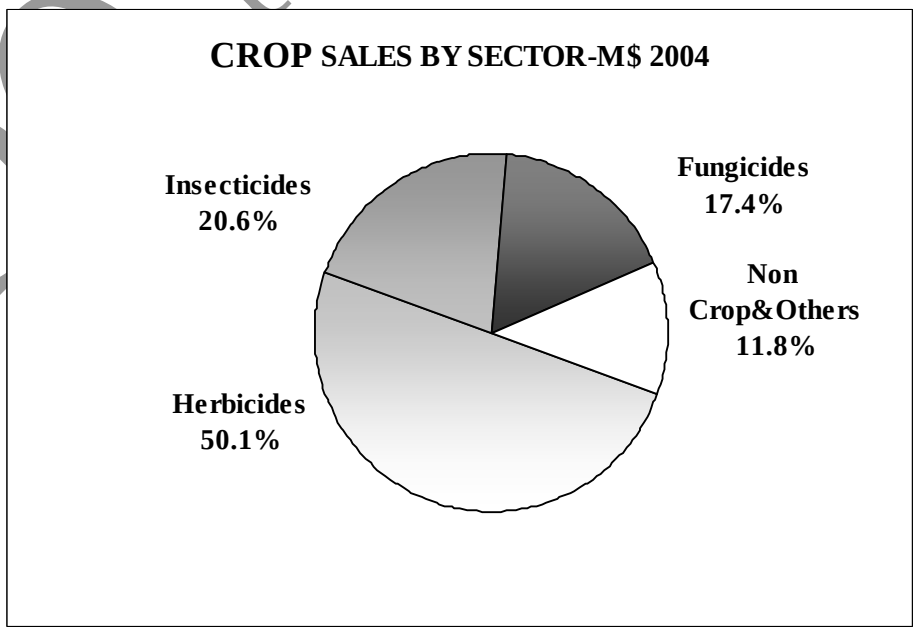

Exhibit 10

MAIN New Products Sales -$m	
2004	473.1
2003	320.4
2202	177.8
2001	157.0
2000	99.0

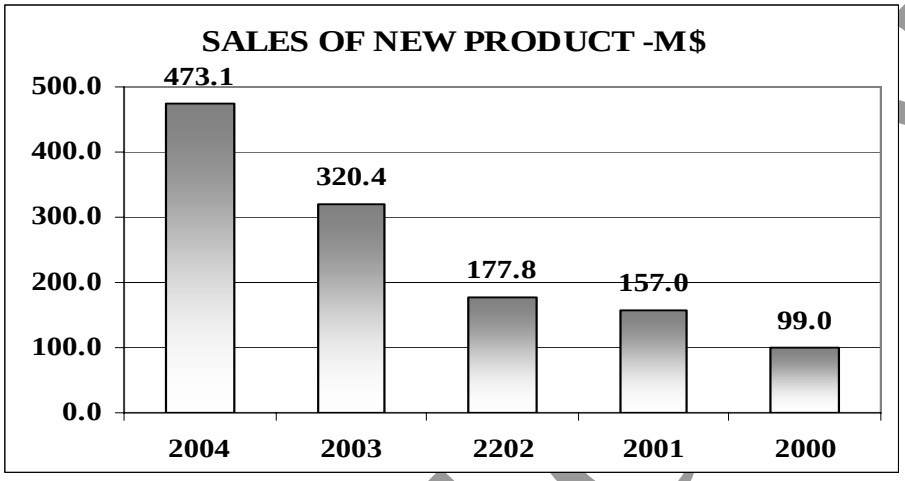

Exhibit 11

GEOGRAPHICAL DISTRIBUTAION-M$			
	2004	2003	2002
North America	198.0	142.3	117.5
South America	428.7	308.6	248.8
Europe	649.8	525.9	350.4
Israel	103.0	86.5	81.2
Rest	160.2	114.0	93.1
Total	1,539.7	1,177.3	891.0

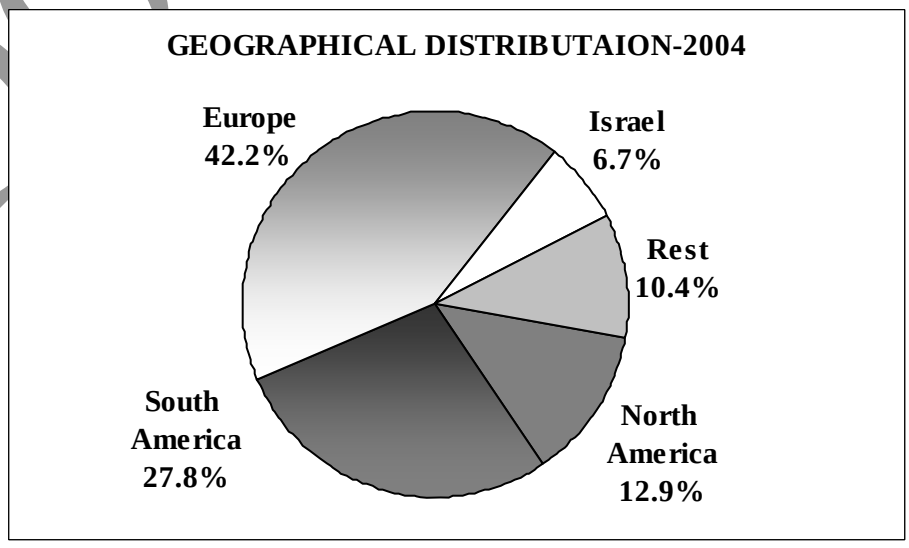

Exhibit 12

Makhteshim-Agan Industries LTD - Balance Sheets US $ thousands

	31/12/2004	31/12/2003	31/12/2002	31/12/2001	31/12/2000
Current assets					
Cash and cash equivalents	40,477	49,849	63,574	65,526	75,739
Short-term investments	1,563	1,100	559	1,112	0
Trade receivables	369,209	301,694	252,637	309,370	393,773
Other receivables	77,129	54,538	56,813	54,583	54,557
Inventories	460,870	360,993	343,548	294,774	263,485
	949,248	**768,174**	**717,131**	**725,365**	**787,554**
Long-term investments, loans and receivables	**22,070**	**18,044**	**15,398**	**16,888**	**27,246**
Fixed assets					
Cost	824,544	786,416	756,681	715,695	666,111
Less-accumulated depreciation	388,805	359,671	333,775	308,100	285,030
	435,739	**426,745**	**422,906**	**407,595**	**381,081**
Other assets and deferred charges					
Cost	743,310	612,275	594,032		
Less-accumulated amortization	215,890	163,873	125,911		
	527,420	**448,402**	**468,121**	**240,245**	**141,473**
Total	**1,934,477**	**1,661,365**	**1,623,556**	**1,390,093**	**1,337,354**
Current liabilities					
Credit from bank and others	140,021	142,817	231,111	187,461	246,142
Trade payables	325,945	243,070	178,937	202,906	227,691
Other payables	192,405	150,541	138,307	87,921	60,942
Proposed dividend	11,200	7,000	0	3,000	0
	669,571	**543,428**	**548,355**	**481,288**	**534,775**
Long- term liabilities					
Loans from banks	93,023	269,233	313,195	231,072	185,153
Convertible debentures	150,000	0	85,527	58,500	0
Other long-term liabilities	9,337	2,470	1,356	2,245	23,242
Deferred taxes, net	54,354	43,778	40,744	33,144	32,512
Employee severance benefits, net	26,709	24,774	20,816	19,758	21,187
	333,423	**340,255**	**461,638**	**344,719**	**262,094**
Minority interest	**18,756**	**6,436**	**5,656**	**7,313**	**7,568**
Liability for acquisition of company shares					**19,925**
Convertible debentures	**38,322**	**77,705**	**0**	**0**	**0**
Shareholder's equity	**874,495**	**693,541**	**607,907**	**556,773**	**512,992**
Total	**1,934,567**	**1,661,365**	**1,623,556**	**1,390,093**	**1,337,354**

Exhibit 13

Makhteshim-Agan Industries LTD - Consolidated Statements of Income US $ thousands					
	31/12/2004	**31/12/2003**	**31/12/2002**	**31/12/2001**	**31/12/2000**
Revenues	**1,539,702**	**1,177,255**	**890,863**	**888,865**	**856,295**
Cost of sales	943,908	730,305	564,763	586,049	582,503
Gross profit	**595,794**	**446,950**	**326,100**	**302,816**	**273,792**
	38.7%	38.0%	36.6%	34.1%	32.0%
Expenses					
Research and development, net	19,480	16,820	15,175	15,475	16,547
Selling and marketing	220,212	163,836	128,986	119,518	106,966
General and administrative	66,915	53,899	42,803	43,149	43,312
	306,607	234,555	186,964	178,142	166,825
Operating income	**289,187**	**212,395**	**139,136**	**124,674**	**106,967**
	18.8%	18.0%	15.6%	14.0%	12.5%
Financing expenses, net	27,571	37,956	34,406	37,345	33,682
Income before other expenses, net	**261,616**	**174,439**	**104,730**	**87,329**	**73,285**
Other expenses, net	42,735	38,245	31,770	38,173	8,714
Income before taxes on income	**218,881**	**136,194**	**72,960**	**49,156**	**64,571**
	14.2%	11.6%	8.2%	5.5%	7.5%
Taxes on income	52,334	32,618	12,458	10,244	14,438
Income after taxes on income	**166,547**	**103,576**	**60,502**	**38,912**	**50,133**
Minority interest in income of subsidiaries, net	1,020	802	424	716	-88
Net income	**165,527**	**102,774**	**60,078**	**38,196**	**50,221**
	10.8%	8.7%	6.7%	4.3%	5.9%

Exhibit 14

Agro vs. Non-Agro Sales -$m					
	2004	2003	2002	2001	2000
Agro*	1,357.9	1,034.7	775.6	783.5	738.3
Non-Agro	181.8	142.6	115.3	105.4	118.0
Total	1,539.7	1,177.3	890.9	888.9	856.3

* including Non -Crop