

CROP PROTECTION BUSINESS SEMINAR 2007

The second Crop Protection Business Seminar was held at the Crowne Plaza Hotel in Glasgow on 17 and 18 October. It was organised by Crop Protection Monthly and Enigma Marketing Research and run in conjunction with the International Plant Protection Congress. It was well attended and featured 16 eminent speakers who discussed current issues impacting on the crop protection industry.



The Chairman, Dr Nigel Uttley, opened the Crop Protection Business Seminar

Global market trends and pointers for the future

Gautam Sirur, business analyst and principal consultant for Croprosis, Edinburgh started the seminar with an overview of the agrochemical industry, and the various global factors that will affect future growth trends. He said that the forecast growth for agrochemical sales in 2007 compared to 2006 is 8.4% in US dollars or 3% when currency factors are taken out. The key factors driving the growth are the higher farm incomes based on high grain prices, influenced by low stocks and the demand for biofuels. Areas of maize, sugarcane and cereals are therefore increasing. Also insect infestations and diseases are on the increase because of a rise in minimum or zero tillage cropping and the effects of global warming.

By region the forecast changes in cropping are:

- North America - growth in maize, cereals, oilseeds,
- Latin America - growth in sugarcane, cotton, cereals but the market will stabilise as credit risks are moderated by Governments,
- West Europe - generally stable for cereals, oilseeds, pulses and fruit and vegetables but a decline in sugar beet,
- East Europe - high growth in cereals, oilseeds, maize, fodder crops, fruit and vegetables,
- Far East/ Pacific - growth in grains, oilseeds and in GM cotton,
- Rest of the World - general decline in cotton pesticides due to GM.

Looking at specific crop sectors Mr Sirur identified a number of important agrochemical and seed industry growth areas. He said that there will be fungal diseases and insect attacks on cereals, rice and maize due to higher plantings and warmer climatic conditions. GM plantings will increase in Latin America (maize, soybean, cotton), North America and EU (maize) and Asia (cotton). Soil and seed treatments for corn rootworm and cutworm will increase in the Americas. The use of aphicides and rust fungicides will rise on soybean and there will be a steady growth in all product areas on fruit and vegetables as the demand for these crops grows. In terms of products, fungicides will show the most growth.

Looking further ahead to 2012 Mr Sirur said that agrochemical growth rates have been projected at 3.4% per annum while GM crops based on input traits will grow at 7% per annum. Latin America and East Europe, he anticipates, will see the most growth. Most of the multinationals can be expected to benefit from the developments in biofuels. Maize for bioethanol in North America will increase demand for GM varieties and herbicides. Herbicide and fungicide sales will advance particularly on sugarcane and beet grown for bioethanol production in Latin America and the EU. Biodiesel demand in the EU and North America will bring about growth in oilseed rape and soybean seed sales and increased herbicide and fungicide usage.

Fungicides – a new growth market in North America

The rapid development of the fungicide market in North America was the topic of a presentation by Roy Cleveland of the market research group, dmrkynetec. The fungicide market in North America has, in comparison with herbicides and insecticides, been the poor relation. However, as Mr Cleveland explained, since 2004 it has expanded quite dramatically. The total sales value in 2000 for the US, Canada, Mexico was \$700 million, of which \$550 million was in the US. By 2003 the total had only increased to \$760 million, but by 2005 had leapt to \$950 million. The treated area over the period 2000 to 2005 rose from 20 million ha to 30 million ha. Well over half of the fungicide market value is on fruit and vegetables with 19 million hectares treated in 2005. The growth has continued in 2006 and in the US alone increased from \$730 million to \$845 million. The 2006 figure includes \$210 million from seed treatments, about 25% of the total value. The seed treatment market was mostly on cotton, soybeans and corn. Important products are azoxystrobin, fludioxonil, and mefenoxam targeted at diseases such as Pythium, Rhizoctonia and Phytophthora.

Mr Cleveland said that most of the growth came from the Asian rust scare on soybeans as well as from the general improved performance in fungicides. The 2004 outbreaks of Asian rust on soybeans in South America prompted an awareness programme by advisors fearing potential yield losses to the US crop. Although the industry was geared up to respond and preventative treatments were applied, there was no outbreak in 2005. However, significant yield benefits were recorded. On average there was a 12% yield gain where fungicides were used, amounting to a net financial gain of \$38/ha. Suppliers realised the merit in promoting fungicide use as part of a plant health programme, as well as the insurance against Asian rust. As a result some 1.6 million ha of soybeans were treated in 2006, out of a total crop area of 30 million ha. Mr Cleveland estimates the 2007 figure will have reached 1.8 million ha out of a reduced total area of 26 million ha.

The same plant health opportunity may apply to corn. Growers can expect an 8% yield increase and a net gain of around \$48/ha. In 2007 it is estimated that of the 37 million ha of maize, 2.2 million ha will have been treated with foliar fungicides. There has therefore been a mini boom in the foliar fungicide market for both soybean and corn, possibly reaching \$110 million in 2007, and up from only \$17 million in 2004. An important factor has been the improved training in fungicide recommendations amongst smaller distributors. Mr Cleveland believes the market could double in the next five years. The strobilurins, in particular azoxystrobin, pyraclostrobin and trifloxystrobin have performed well, both technically and commercially.

Domestic distributor to pan-European player

Dr Richard Youngman, Stähler International, gave some background as to how his company had evolved and discussed the strategies that it had adopted. From an import trading company the business had developed into a European based distributor of third-party products for research-based companies especially those in Japan such as Ube Industries, Tokoyama and Agro Kanesho. Strategies that began in the mid 1990s had now been successfully implemented. The company was family owned and had remained so giving it full independence at all times. Stähler had created an international team for development, registration and marketing coordination in the EU27. Whilst defending its existing market position the business had also acquired and licenced further products for use in Europe. There had been additional investment in development and registration data packages and an expansion of production and formulation facilities. As a result Stähler now has modern production and formulation facilities and holds

product registrations in 20 EU countries. The company has also acquired marketing organisations outside Germany giving it a presence in Austria, Switzerland and Bulgaria.

Agrochemical purchasing strategies

Dr Hans Elmsheuser, Syngenta, gave a presentation on what it takes to be a preferred supplier. He said that many suppliers of intermediates in Europe have consolidated or have been spun off from their larger parent companies. Many of these have also restructured and cut costs to regain competitiveness while the weaker companies have closed or exited the agrochemical business. He said that the Chinese chemical industry was now at a crossroads in terms of the current macro-environment and tightening environmental regulations. Consolidation in China over the next few years, however, is likely to lead to the emergence of some world class companies. In India the fine chemical companies have built up their technical capabilities in agrochemicals and speciality chemical markets in order to reduce their dependence on the pharmaceutical industry and the risks associated with it.

Dr Elmsheuser said that a preferred supplier needed to have a lean competitive structure with minimum overheads. It must also have above average technical/process development capabilities. He said that suppliers must also be flexible and responsive and have the ability to meet the required quality standards and promised timelines. It was also essential to have the willingness and ability to take a process and make constant improvements leading to increased efficiencies and cost reductions. Also important was the ability to adopt a flexible approach to contract negotiations without insisting on iron clad indexation clauses which chain the customer to the supplier and put all downstream market risks on the customer. Successful suppliers were able to follow and understand the complex, constantly changing, marketplace and show willingness to adapt to changing customer requirements. They were also willing to run the extra mile for the customer thereby striving to become the supplier of choice.

Third party sourcing for a growing agrochemical organisation

Dr Dirk Steffan in his presentation said that Gowan's model of sourcing allows his company to concentrate on its core strengths in registration, development, marketing and sales. It then combines these with the core competences of its partners in chemistry, synthesis and manufacturing. Gowan chooses highly qualified manufacturing partners based on criteria such as low cost manufacturing capability, having local environmental, health and safety compliance and the ability to cooperate exclusively. Partnering, said Dr Steffan, drives supply chain efficiencies and allows both businesses to co-develop new processes and establish production facilities. That in turn secures long term supply. Gowan are currently sourcing high quality raw materials, intermediates and active ingredients in Asia, Europe and North America.

The company has a partnership arrangement with Chinese manufacturers to produce triallate, a molecule it acquired from Monsanto. Gowan sought to partner businesses with relevant chemistry and technology capabilities but they also had to have a process development capability. Within 14 months of the acquisition commercial production in China had started supported by local Gowan representation. The new plant now produces triallate of higher quality and higher yield than when previously manufactured by Monsanto.

Intermediate suppliers

Dr Uwe Brunk, Saltigo, is chairman of AIME (Agrochemical Intermediates Manufacturers in Europe). He said that AIME was set up to be the forum and voice of the European agrochemical intermediates and active ingredient manufacturers. There are currently 14 member companies - Albermarle, AllessaChemie, Caffaro, Clariant, Degussa, DSM Fine Chemicals, SNPE/Isochem, KemFine, Lonza, Pentagon, Raschig, Rhodia Organics and Saltigo. The aim is to promote the highest level of risk management in the manufacture and use of agrochemical intermediates and active ingredients globally. He said that AIME had produced a set of voluntary guidelines that set minimum requirements for all manufacturers in the fine chemicals industry in order to minimise risks in the food supply chain.

Agrochemical manufacture in China - an opportunity or a threat

Sun Shubao, general secretary of the China Crop Protection Association, gave his presentation on the manufacture of pesticides in China. He said there are over 1800 pesticide companies in China, 450 of

whom actually manufacture active ingredients. The rest are formulators. The Jiangsu province is the most important area for pesticide production accounting for 23% of total production. Shanghai and Guangdong are other important areas. Eight Chinese agrochemical companies have yearly sales that exceed \$135 million (CYN1 billion) while the top 20 companies account for \$3.39 billion or 34% of the total production. Asia is currently the most important market (\$599 million), followed by Europe (\$228 million) and South America (\$181 million). Total pesticide output in 2006 was up 25% on 2005, the average growth rate over the past six years is 12.5% per annum.

Mr Sun said that there were some important challenges facing Chinese manufacturers. One of these was the cost of raw materials, energy and transportation. He also predicted that the competitive advantage based on a low cost workforce will decline in the future. In addition new Maximum Residue Levels (MRL) standards will impact on the export of Chinese pesticide products and may result in a decreasing domestic demand as more Chinese farmers turn to expensive imported products hoping to safeguard the export of their agricultural produce. All of these factors will in turn eventually lead to more mergers and acquisitions of the kind that occurred when the ChemChina Group was set up in 2004. This trend is in line with the Chinese Government's 11th Five Year Plan 2006-2010 which aims to foster the growth of larger, well run enterprises at the expense of smaller and less efficient businesses. Mr Sun said that despite the growth in China's pesticide production its export revenue still comes from the lowest end of the product value chain. In China many enterprises are contracted to manufacture for the multinationals. Examples are Zhejiang Xinan and Nantong Jiangshan who are producing glyphosate for Nufarm and Syngenta respectively.

Chinese companies still have many advantages but excessive competition and a lack of knowledge of international markets are the obstacles to further growth. Chinese pesticides are of high quality and low cost and can reduce the cost of controlling pests for farmers and increase the value to suppliers. Mr Sun said that it was not only Chinese enterprises that benefit from the increasing pesticide input but international investors too. He pointed out that there was also a huge domestic market for overseas businesses to tap into.

New formulations = new products

The value of investing in formulation development was demonstrated by Mark Bell, Battelle UK Ltd. He explained that formulation work can address marketing or technical issues and open up new markets. "Problems" with existing formulations are often picked up through customer feedback. He gave a list of some of the typical issues and discussed how the formulation scientist can respond to them.

- Poor crop tolerance - use solvent free formulations such as WG, SC or encapsulated suspensions.
- Better rainfastness - incorporate stickers or penetrants.
- Damage from vapour drift - use encapsulated suspensions or low volatility salts.
- Antagonism to other products - use controlled release formulations.
- Better activity/lower dose needed - build in adjuvants, minimise particle size.
- Undesirable label statements - remove unnecessary inerts, use solvent free or non volatile organic component solvents.
- Cost too high - use water based or dry formulations, maximise concentration, let the farmer add the adjuvant.
- Unpleasant odours - reformulate, encapsulate.

More positively, formulation technology can bring about new marketing opportunities through market segmentation, moving products into a lower toxicological category, providing own brand options or simply providing something new for the salesman to say. Mark Bell concluded his presentation, stating that: "Sometimes, just sometimes, novel formulation technology can deliver a step-change in performance, market acceptance, image, competitiveness and profit margin and can extend the product's profitable life". He did however add the cautionary note that formulation work does not come free and that the potential value of the benefits must be clear before embarking on the development work.

New approaches to innovation

Dr Alan Baylis, Nuvistix Innovation, presented his philosophy on understanding and implementing innovations. In relating to the crop protection industry, he explained that inventions or discoveries on their own are not enough. An invention generally arises through R & D activities, may be the result of the work of a single individual and is usually patent protected. Innovation, however, comes from all departments of an organisation, involves team effort and may involve other forms intellectual property. The knowledge is with the invention while the value is generally in the innovation. Dr Baylis stressed that successful innovations call for lateral thinking and they have to be central to all business activities. The innovation culture needs to be embedded through training, newsletters, intranet tools, seminars, reporting procedures and regular idea gathering.

The global expansion of a generic agrochemical company

Rotam is a privately owned group of 40 companies that operates globally and has direct operations in 53 countries. Food Retail (59%) and Life Science Chemicals (36%) are the two principal business units of the group which has a total turnover of around \$560 million. In his presentation James Bristow, international general manager for the Agrochemical Division, spoke about the global expansion of Rotam's generic crop protection business. He said that for a generic company to be sustainable it should locate its chemical production in countries which have a good supply of raw materials, a well developed chemical industry, good industrial infrastructure as well as a chemical friendly mentality. China, India and Brazil all fit this profile. He did, however, point out that in order to run any business successfully it is important to use Western best business practice and production technology, its quality standards as well its environment and safety standards. He said the challenges that generic companies face in the future are increasing regulation and the stronger defensive strategies being developed by the multinationals, who now have a much better understanding of the generic business. Mr Bristow stressed the importance of operating in the value driven markets like the US, Brazil and the EU as well as in the large volume markets of India and China. Operate globally, he added but service the business locally.



James Bristow of Rotam spoke of his company's global expansion

Parallel imports into Europe

Rocky Rowe, advisor on trade issues for the European Crop Protection Association (ECPA), said the association fully supports parallel trade. However it believes an open, transparent and robust process is

needed and that this should be linked to any revision of 91/414/EC. He said that Article 49a goes some way to clarifying the parallel trade authorisation process but it still allows for differing interpretations on identity. He said that it needs to be amended to reflect 'common origin' as the only route to parallel trade authorisations. Only then will member states behave consistently. Re-packing must also be stopped, he said, to ensure product integrity. It provides opportunities for substitution with illegal materials and opens the possibility for contamination. "The industry has no issues with fair and equitable application of parallel trade rules", said Mr Rowe. "Legitimate parallel trade is fully supported and encouraged. However, the lack of regularisation of parallel trade rules across all EU member states is causing concern as it is leading to abuse and the proliferation of illegal and counterfeit plant protection products across Europe".

The impact of the new EU regulations

Terry Tooby, regulatory director for JSC International, said that Directive 91/414/EEC, adopted in 1991 had not kept up with scientific advancements. Today there is a requirement to ensure cross-compliance with other EU legislation such as the Water Framework Directive and the 6th Environment Action Programme. The proposed new regulation which will impact on 27 member states reflects increasing public concern and a need for greater guidance in decision making. Mr Tooby pointed out that we are now living in a more risk adverse society. Minimising risk whilst recognising benefit was acceptable in the past but today any uncertainties are considered to be unacceptable.

Cut-off values will now be used to favour less-hazardous chemicals. There will be no provisional authorisations and guidelines for decision-making are likely to remove the possibility of scientific judgement. Mr Tooby believes that the time periods for evaluation are unlikely to be met and the overall impact will be an agriculture with far fewer chemicals available. The world, he said, no longer has stores of key commodities. Agricultural prices are rising as demand begins to outstrip supply. Pests and diseases will change as climate change takes place and Europe will have to produce food, feed, fibre and fuel in this new environment. Mr Tooby stressed that unless a balanced view was taken on regulation of plant protection products it was unlikely that the EU will be able to provide for all of its needs.