

Growing sales of generic pesticides – profiting from the past

With few new pesticide active ingredients coming to market, sales of older pesticides are dominating global agriculture. When patents on these older pesticides expire generic producers can start manufacturing. The original research-based companies seek to maintain control while generic producers try to capture a share of the market. Fierce competition is likely to bring about significant changes over the next five years. A new report from Agrow provides insight into the battle-ground.

Agrochemicals are an aging industry. While over 800 pesticide active ingredients remain on the market, the number of new substances being developed has fallen considerably over the last ten years. In some industrialized country markets older products are losing their registrations. For example, the European Union review has removed over 360 active ingredients to date. But these and many other chemicals are still available elsewhere.

But while aging, the industry has not lost its vigour. The overall global agrochemical pesticide market was valued at US\$32 billion in 2004 with generic products making up an increasing percentage of this market. Latest estimates indicate that generic products account for US\$18 billion, or around 66% of overall sales¹ and by volume, generic active ingredients may account for approximately 95% of all product sales worldwide².

Six research-based agrochemical companies (Bayer, BASF, Dow, DuPont, Monsanto and Syngenta) control around 85% of the overall global market by value. Generic pesti-

cides are key in their product portfolios and these companies play a dominant role in the generic market, with approximately 70% of sales by value, and possibly 65% by volume.

The generic active ingredients

The Agrow report profiles 100 of the most important generic active ingredients. Since its last generics report in 2001, 24 'new' chemicals have entered its 'top 100' list, largely ones that have recently come off-patent. The active ingredients profiled were selected on the basis of the number of generic companies manufacturing them, annual sales and usage figures, and how recently patents expired. The products profiled also reflect the growing size of the industry in India and China, which means that pesticides widely used in these countries are increasing in importance.

The types of generic most sold are herbicides with 57% of the market, followed by insecticides with 34% and then fungicides with 11% of sales. The biggest selling gener-

Table 1. Market profile of the top 12 generic active ingredients

Rank	Active ingredient	Activity	Value sales (\$m)	Sales prospects
1	Glyphosate	Herbicide	5000	Rising
2	Imidacloprid	Insecticide	1000	Rising
3	Malathion	Insecticide	400	Stable
4	Paraquat	Herbicide	400	Falling
5	Acephate	Insecticide	350	Rising
6	Pendimethalin	Herbicide	350	Stable
7	2,4-D	Herbicide	235	Stable
8	Acetochlor	Herbicide	300	Rising
9	Chlorpyrifos	Insecticide	300	Falling
10	Trifluralin	Herbicide	300	Stable
11	Atrazine	Herbicide	280	Stable
12	Imazethapyr	Herbicide	280	Falling

Source: Agrow's Complete guide to generic pesticides. Volume 2, pp22-23.

Table 2. The most popular generics with manufacturers

Rank	AI	Activity	Makers
1	Glyphosate	H	39
2	Chlorpyrifos	I	33
3	Cypermethrin	I	31
4	Carbendazim	F	23
5	2,4-D	H	23
6	Imidacloprid	I	22
7	Acephate	I	20
8	Mancozeb	F	20
9	Endosulfan	I	17
10	Fenvalerate	I	17
11	Deltamethrin	I	15
12	Dimethoate (+malathion)	I	15

Source: Agrow's Complete guide to generic pesticides. Volume 3, p36
I-insecticide; H-herbicide; F- fungicide; AI-active ingredient

ic is glyphosate with annual sales approximating US\$5 billion followed by the insecticide imidacloprid with annual sales of around US\$1 billion. The biggest selling fungicide is mancozeb, seventeenth in the list with sales of \$220 million (see Table 1).

After glyphosate and imidicloprid, market values fall significantly. Malathion and paraquat both generate annual sales of \$400 million. Sixteen products have sales of between US\$200-300, and 44 have a market value of under US\$100. Below this, pesticide active ingredients are of less interest to the generics industry due to market size limitations, manufacturing difficulties, or problems accessing chemicals required for production.

Glyphosate sales are still rising, and exceed that of any patent protected active ingredient. This is unsurprising as most herbicide-resistant crops have engineered resistance to glyphosate. Most significant are 'RoundUp Ready' soybeans and glyphosate's increase is at the expense of other soybean herbicides such as imazethapyr and linuron.

The most commonly produced generic active ingredients are glyphosate, chlorpyrifos and cypermethrin, produced by between 31-39 manufacturers among the profiled companies (see Table 2). Following these, with between 10-14 manufacturers, are atrazine, metalaxyl, monocrotophos, paraquat, chlorothalonil, diuron, lambda-cyhalothrin, methamidophos, permethrin, propanil, benomyl, parathion methyl, propiconazole, quinalphos, ethion, triadimefon, trifluralin, acetamiprid, alpha-cypermethrin, dichlorvos, metamitron, methomyl, metribuzin, metsulfuron-methyl, propargite, thiophanate-methyl.

The manufacturers and their base

The original producers of generic active ingredients often still hold the biggest market

Table 3. Top producers of the main generic active ingredients by sales

Rank	Company	Country	Annual Sales (\$m)	Year*
1	Monsanto **	US	3,180	2004
2	Makhteshim	Israel	1,358	2004
3	Nufarm	Australia	733	2004
4	Cheminova	Denmark	683	2004
5	Griffin	US	350	***
6	Sipcam-Oxon	Italy	308	2003
7	Cerexagri	US	265	***
8	Isagro	Italy	225	2004
9	Amvac	US	151	2004
10	Agripec	Brazil	120	2003
11	Red Sun	China	120	***
12	Sinon	Taiwan	120	***
13	Dongbu Fine Chemicals **	South Korea	118	2003
14	United Phosphorus	India	113	2004
15	Sanonda	China	99	2003

* Depending on end of company's fiscal year; some figures are estimates

** Includes some other animal or chemical products *** Not known

Source: *Agrow's Complete guide to generic pesticides. Volume 3, p40*

share after their patents expire. For example, Monsanto still manufactures and sells around 70% of glyphosate, Bayer CropScience is the largest single manufacturer of imidacloprid and Dow AgroSciences is the main producer of chlorpyrifos³. The leading producers of generic pesticides after Monsanto, are Makhteshim of Israel, NuFarm of Australia, and Cheminova of Denmark (see table 3).

In spite of the dominance of generic products in China and India, their biggest domestic producers only rank eleventh (Red Sun, China) and fourteenth (United Phosphorus, India) in terms of global sales. Both these countries have by far the largest number of generic producers with 31 of the 100 companies profiled in China and 22 in India (see Table 4). Asia generally is the major producing region, followed by Western Europe.

Generic producers based in industrialized countries tend to have developed from spe-

cialized origins, such as suppliers of agricultural equipment or general chemical manufacturers. In developing countries, some larger companies were established by the state or initially protected by tariffs on imported pesticides to encourage the domestic industry.

Market trends and tactics

A number of factors are likely to affect the generics industry over the next five years. With limited new active ingredients coming to market, the research-based companies are likely to intensify their expansion into the generics market⁴. The generic companies generally compete by selling at lower prices. The research-based producers will lower the price of products as the patent expiry date approaches to maintain control of their chemicals. They also compete by selling their branded products in novel mixtures and new formulations, relying on their reputation and

assistance to growers: strategies that are more affordable by farmers and growers in industrialized countries.

According to one industry observer, some of the larger Indian companies may be well placed to compete in the global market. They understand the market well and are prepared to invest in the registration systems of difficult markets such as the EU and the US⁵.

China and India have now joined the World Trade Organisation and signed the TRIPs agreement (trade related aspects of intellectual property rights) limiting their ability to infringe on patents: for example, in 2004 Syngenta successfully prosecuted a Chinese company manufacturing its patent-protected neonicotinoid insecticide thiamethoxam. While generic producers in developing countries may be free to manufacture domestically, they have problems exporting. TRIPs will also prevent these countries from favouring domestic industries over importers. Subsidies to domestic producers must be removed allowing foreign companies to expand. The obligations will make it more costly to establish a small generic company.

Increasingly, the generic companies are forming associations to protect their interests. The current associations are the European Crop Care Association, the Chemical Producers and Distributors Association covering US companies and US operations of foreign companies, the Pesticide Manufacturers and Formulators Association of India (PMFAI), Asociación Latinoamericana de la Industria Nacional de Agroquímicos (ALINA) based in Costa Rica representing the Latin American companies. (BD)

1. *Agrow's Complete Guide to Generic Pesticides. Volume 1 The companies (DS249), June 2005; Volume 2 Products and markets (DS250), August 2005; Volume 3 Successful business strategies for R&D based and generic companies (DS251), T&F Informa UK Ltd, November 2005, London.*
2. *Goulds A, Kynetec, quoted in Generic Agrochemicals, MarketScope Europe Ltd, 31 October 2005. www.crop-protection-monthly.co.uk, www.kynetec.com*
3. *Agrow op cit 1, Volume 3, p19.*
4. *Goulds A, op cit 2.*
5. *Utley N, Agrochemicals – the future. Strategy – get it right or perish, Enigma marketing research. www.enigmamarketingresearch.com*

Table 4. Geographical spread of 100 companies profiled

Regions	No of companies
China	31
India	22
South East Asia: Australia (1), Hong Kong, (1), Indonesia (1), Malaysia (2), Singapore (1), South Korea (3), Taiwan (3)	12
Europe-East: Croatia (2), Hungary (2), Romania (1), Slovenia (1),	6
Europe-West: Belgium (1), Denmark (1), Ireland (2), Italy (4), Norway (1), Portugal (1), Spain (2), Turkey (4), UK (1)	17
Middle East (Israel)	2
North America: US (5), Mexico (2)	7
Latin America: Argentina (1), Brazil (1), Venezuela (1)	3
Total profiled	100

Agrow's complete guide to generic pesticides

Information for this article has drawn substantially from the fully updated 'Agrow's complete guide to generic pesticides'. This excellent resource is an essential guide to the market in generic pesticides.

The three volumes provide: profiles of the 100 most important generic pesticide companies in the world today (volume 1); the 100 most important generic pesticides (volume 2); and analysis of the generic market and industry, with forces that will drive the industry development (volume 3).

www.pjpubs.com/agrow_reports/generic_pesticides.htm, 3 volumes for £1495. Volumes can be purchased separately.