



The Generic Agrochemical Market 2013

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In 2013 the global market for crop protection products increased by 9.2% to \$54,208 million; if products used in non-crop situations are included then the total market for agrochemicals rose by 8.5% to \$60,689 million. Against this market background the majority of companies operating globally in the agrochemical sector reported improved sales performances during the year.

The following table lists the sales results in 2013 for the leading five agrochemical companies whose sales are based mainly on generic products.

Leading Generic Company Agrochemical Sales 2013

Rank	Company	Sales 2013	\$m. 2012	Growth 2013/12 %
1	Adama	2,876	2,649	+8.6
2	Nufarm	2,297	2,246	+2.3
3	UPL	1,607	1,448	+11.0
4	Cheminova	1,101	1,027	+7.2
5	Sipcam	514	459	+12.0

The data in the above table indicates variable growth rates for the leading generic companies in the industry, the actual overall performance depending to a significant extent on the regional exposure of each company. A factor that may influence the sales outcome of these companies has been acquisitions, inclusion of which will have enhanced sales performance. However, in comparison with previous years the number of events is fewer.

Generic company transactions that may have affected 2013 sales include:

- United Phosphorus acquired Agrichem in the Netherlands in 2012

- Arysta acquired the Indian company Devidayal in 2012
- Nufarm acquired Cleary Chemicals in the USA in 2013
- Makhteshim (now Adama) acquired a majority stake in ChileAgro (Chile) and Agrovita (Slovakia) in 2013

In analysing the generic sector, a key element is the definitions that are used. For the purposes of this analysis, a generic company is defined as one that manufactures active ingredients and receives the majority of its sales from products that are off patent, and that were researched, developed or first introduced by another company. Due to product acquisitions there is now a proprietary element to sales within the leading 'generic' companies, however this still equates to a relatively low share of turnover overall.

The following graph indicates the share of the global agrochemical market attributable to the sales of generic companies since 1995. For markets such as China and India, where the sales of some smaller companies are not known, the generic sector of these countries has been assumed to be the value of the entire market minus imports: imports being the primary source of proprietary chemistry in these countries.

A major factor in the development of the generic sector of the agrochemical market has been glyphosate. Volume demand for glyphosate continues to increase, however the product is now a commodity with prices directly affected by supply and demand. Since the banning of the 10% solution in China at the end of 2011, volume demand in the country has risen significantly resulting in a shortage of supply and rising prices leading to more companies coming



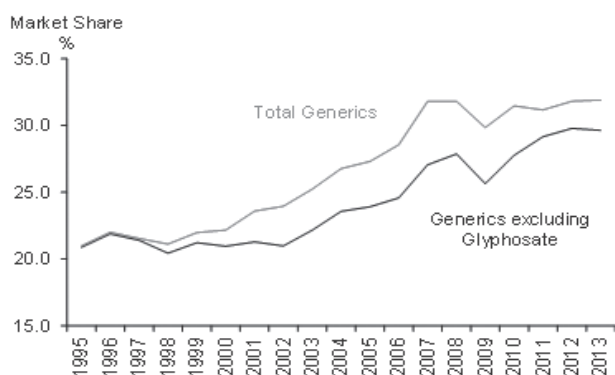
back into glyphosate manufacture. By the end of 2013, supply again exceeded demand such that prices again began to weaken.

Generic Companies Share of the Global Agrochemical Market

The analysis shows that in 2013, the overall sales of the generic companies increased by 8.9% in comparison with 2012, slightly ahead of world market growth, however since 2006 the generic share of the agrochemical market has remained essentially static at just over 30%. The impact of

glyphosate is evident, with the generic company share excluding glyphosate falling in 2013.

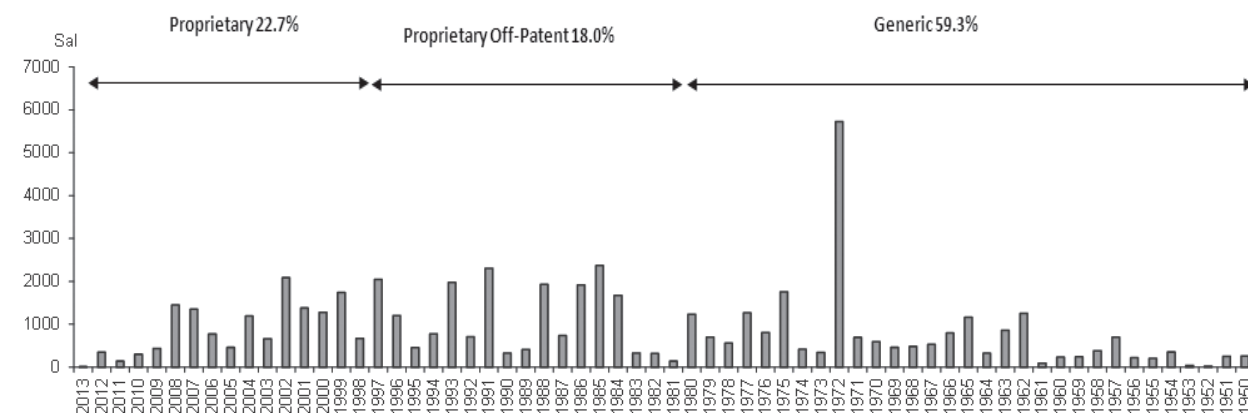
The charts on the following page present a similar analysis, but based on individual product sales. In this analysis, Proprietary relates to the sales of patented active ingredients (this is taken to be products that have been on the market for 15 years or less); Proprietary Off-Patent relates to the sales of products that are off-patent, but where the company that first introduced the molecule still has a share of sales of >90%, and hence has a dominating position with the product. A product is deemed generic when the share of sales for the company that first introduced the product falls below 90%. The lower graph presents the number of active ingredients that were on the market in 2013 listed by their year of their original market introduction.



Market Breakdown 2013

Sector	Share %
Proprietary	22.7
Proprietary Off-Patent	18.0
Generic	59.3

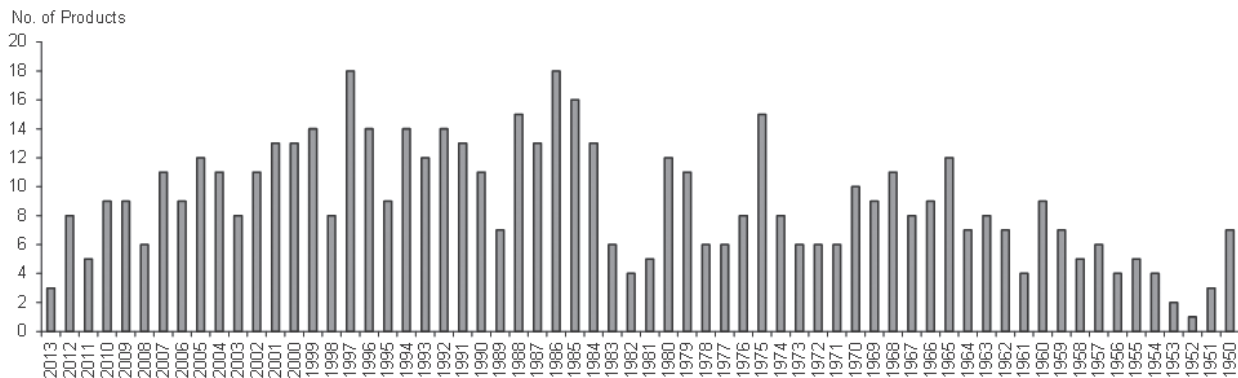
Product Sales in 2013 by Year of Introduction



Product groupings are representative only, and do not relate directly to the graph



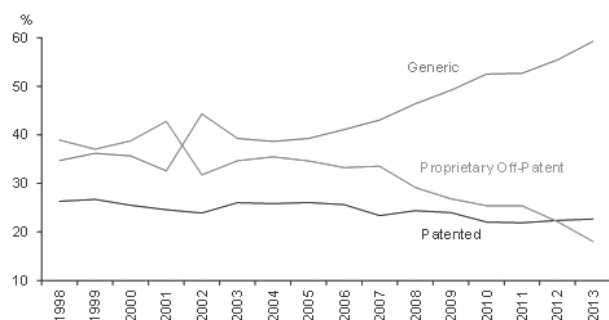
Active Ingredients on Market in 2013 by Year of Introduction



The following figure tracks the change in proportion of the three major product categories with time. As stated previously, the patent expiration for glyphosate has had a major impact on the off-patent sector and, by our analysis, in 2002 the product moved from the Proprietary Off-patent sector into the Generic sector, as Monsanto's share of sales of the product declined to below 90%.

Agrochemical Market Share by Product Group Since 1998

In 2013, the share of sales due to generic products increased as glyphosate sales improved and more significant products fell out of the Proprietary Off-Patent sector, which lost share. The patented section of the market gained share due to the success of new introductions, notably chlorantraniliprole, flubendiamide and the SDHI fungicides. In dollar terms the sum of sales of Proprietary products rose by 9.8% in 2013, but the Proprietary Off-Patent sector fell by 11.6%, whilst the value of the generic sector rose by 16.1%.



Overall, it is our estimation that 22.7% of agrochemical sales in 2013 were due to patented products and that by definition 77.3% were due to off-patent products. However, from the company sales analysis, generic companies make up 31.9% of total sales, hence again by definition 68.1% of industry sales can be attributed to the R&D driven companies, not only with patented molecules (22.7%), but also a further 45.4% from products that are off-patent and either of Proprietary Off-Patent or Generic status. The analysis shows that although the market share due to generic products increased in 2013, the overall share attributable to generic companies remained essentially stable, indicating a greater influence by the R&D driven companies in the generic sector of the market.

This analysis is however based on active ingredients, with a growing trend now being R&D investment on products when they undergo patent expiry, particularly the development of brands that contain mixtures with patented products. This trend is increasing with the slowdown in the rate of new active ingredient introductions. As a result some active ingredients in the 'Proprietary off patent' or even 'Generic' sectors achieve significant sales in 'patented' brands. In addition many 'generic' companies create proprietary brands with off-patent active ingredients through the use of patented formulation technology. It is in this 'patented' brands sector where we currently see the greatest competition in the market place.