

THE BRAZILIAN CROP PROTECTION MARKET IS RIPE FOR GROWTH



The growing global population, increasing need to improve crop yields, and increasing demand for biologically-based new products are expected to drive the demand for crop protection chemicals in the future. Brazil continues its role as a primary driver of global growth in the crop protection market. Being the seventh largest economy in the world and the largest among those in the Southern hemisphere, Brazil is also one of the fastest growing economies, as well as, most importantly, the largest crop protection country market.

With a 14% increase to nearly \$10 billion in manufacturer level sales, based on interviews gathered and analyzed through November 2013 for the full previous year, 2012 was an excellent year for the crop protection industry across all product categories. For 2013, the estimated sales jumped by 18% to some \$11.5 billion. This remarkable growth was driven by three main drivers:

- Primarily, export demand for corn and soybeans generated steady increases in acreage of these crops and a corresponding increase in use of crop protection products. Although the export growth may be slowing somewhat, it is far from mature as China rebounded as a customer of Brazilian soybeans and corn.
- Secondly, increasing domestic food consumption by a growing population

increases produce crops and the associated inputs.

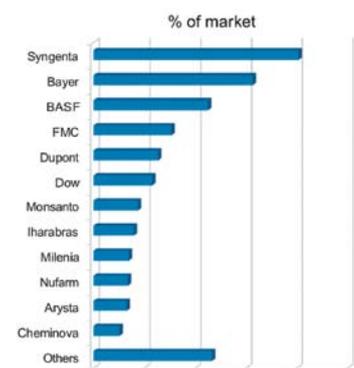
- Lastly, the adoption of high value seed technology and the related seed protectant products purchased as insurance policies.

Crop protection manufacturers have long focused on Brazil as a potential growth target. Syngenta is the long-term leading company with an estimated 20% market share. Bayer and BASF are strong and consistent second and third players, and fast-growing FMC jumped five spots from the ninth position to the fourth position in the last 10 years, passing companies such as Monsanto, DuPont, and Dow AgroSciences in the process due to the historical strength of its sugar cane and strong performing soybean positions in recent times.

While these major crop protection producers are holding onto their sizable market share in the face of generic competition from smaller companies, this may change as the speed of registering new products appears to be increasing due to pressure from growers and manufacturers to increase the efficiency of the product registration infrastructure. Nowadays, approval for a chemical pesticide can take up to five years, but a biological may be registered within 60 days as registration of biological products is a government's priority. Additionally, those companies

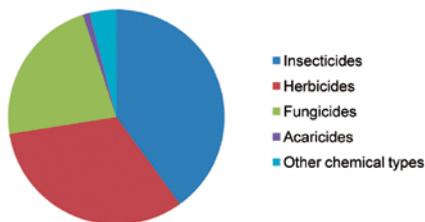
that do not have share in the four major crop markets in Brazil are investing in products for these segments now.

Brazil Crop Protection Company Market Shares



Among the leading indicators of crop protection market changes was growth in herbicides sales, driven by increases in the planted areas of winter corn and soybeans, which increased by over 14% in 2012. Additionally, glyphosate resistance in weeds continues to be an industry concern, forcing an increase in selective herbicide sales. Moreover, the increase in insect pests, such as *H. armigera*, which is a new pest for Brazil, aided the heightened use of insecticides, which grew over 21% and was the second leading category, representing over 30% of the total market. Notably, seed treatments also reaped double-digit growth despite its minor presence in the Brazilian crop protection market.

Market Share by Product Type, 2013
(preliminary findings)



Some of the leading trends in recent years include integrated marketing by companies that sell both seeds and crop protection products to offer one-stop shopping platform, consolidation of distribution, and increasing market power of mega growers among others. For new crop protection companies entering the market, distribution is significant in a country the size of Brazil, which has such large regional variations in crops, climate, and culture. Other trends include growth in biological products based on favorable

registration regulations and government encouraging organic farming. Bayer and BASF have acquired leading companies in the biological arena, and others have negotiated technology agreements to stay competitive with biopesticide technology.

Furthermore, farm economics are favorable for growers now. Despite higher input costs for seeds and chemicals, commodity prices have remained high in Brazil. As a result, farming is seeing record setting profitability in this region and is not showing signs of slowing down in the near future. Growing pest issues will also play a role in developing this potent market as weed and pest resistance is emerging as a key issue in Brazil. Glyphosate weed resistance is growing and *Bacillus thuringiensis* (Bt) insect resistance is becoming prevalent.

Global population growth, biologically-

based new products, continued seed and/or chemical integration, and the emergence of plant health as a distinct market segment will be future drivers in the Brazilian market. Moreover, external factors that will shape Brazil's agribusiness sector include sustainability of crop production, water management, climate change, logistics, and governmental registration time lag.

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