

Monsanto

When Pharmacia (which was acquired by Pfizer in 2003) merged with troubled Monsanto in 1999, investors complained that Monsanto would weigh down Pharmacia's profits. Pharmacia apparently felt the same way, keeping Monsanto's drug unit, Searle, but selling 15% of the remaining company as a precursor to dumping it altogether.

Investors couldn't have been more wrong. Between Monsanto's IPO in October 2000 and August 2001, its share price jumped 80%. Shares of Pharmacia (which still owned 85 percent of Monsanto during that period) fell almost 20%.

How did Monsanto do it?

Monsanto

St Louis-based Monsanto was founded in 1901 to manufacture Saccharine. It soon added vanilla, phenol, and aspirin. By 1990, Monsanto was a large diversified chemical company producing nylon, plastics, films, hydraulic fluids, aspartame (NutraSweet), and pharmaceuticals (the last two through its Searle unit, acquired in 1985).

In the mid-1990s, Monsanto positioned itself as a high-growth "life sciences" company, focusing on agriculture, food ingredients, and pharmaceuticals. When Robert Shapiro took over as CEO in 1995, he pursued a vision of using cutting-edge science to generate profits, raise living standards in developing countries, and produce a cleaner environment. He added seed and genomics companies and spun off the basic chemicals business. The strategy was to use the revenue generated by its hugely profitable Roundup to finance research and development. Uncertainties associated with biotechnology research and consumer fears of genetically modified foods, particularly in Europe, led to the departure of Shapiro and the merger with Pharmacia.

Roundup

Monsanto's leading product was Roundup, the trademarked name of glyphosate, a chemical herbicide developed and patented by Monsanto in the 1970s. Roundup is referred to as a nonselective herbicide, meaning it kills most plants. In the late 1990s, it became the best-selling agricultural chemical of all time and an enormously profitable product for Monsanto. This success was the result of several factors. One was a conscious strategy to reduce price in the US, where patent protection gave it an effective monopoly until September 2000. (Prices were lower outside the US, where patents expired earlier.) Between 1995 and 2000,

This case was written by NYU Stern faculty for the purpose of class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. The case was motivated by the article "A weed killer is a block to build on," by David Barboza, *The New York Times*, August 2, 2001. The authors thank Frank Mitsch at Bear Stearns for supplying the data in Exhibits 1 and 2. © 2005 NYU Stern School of Business.

Monsanto reduced the price by an average of 9% a year. When volume increased by an average of 22% a year, revenue and profits exploded. See Exhibits ?? and ??. Glyphosate-based herbicides produced net sales for Monsanto of \$2.4b in 2001 alone, nearly half the company's total.

Another factor in Roundup's success was the increasing popularity of conservation tillage, an environmentally friendly method of farming in which crops are planted without first plowing the fields. With less plowing, there is less loss of topsoil and moisture. The problem is weeds. Instead of plowing them under, farmers eliminate weeds before planting by applying a nonselective herbicide such as Roundup. Analysts suggest that conservation tillage is sensitive to the price of herbicides, an important element in its cost.

A third factor was the development of herbicide-tolerant crops. Monsanto's Roundup Ready corn was approved in 1998, and soybeans followed shortly thereafter. Monsanto argued that Roundup and Roundup Ready seeds were complementary products, with price reductions in one increasing demand for the other.

Even as patents expired, Monsanto was able to maintain high market shares. In Brazil, for example, Monsanto's patent expired in 1981, yet its 2001 market share was 81%. High market share, in turn, allowed Monsanto to exploit economies of scale and work its way down the learning curve.

Postscript

Monsanto remains a high-risk company with strong upside potential. When the US patent expired, Roundup revenue dropped sharply, leaving Monsanto increasingly reliant on biotechnology. With exposure to Latin America compounding the fall in Roundup revenue, the share price fell 50% in mid-2002, leading to the December resignation of CEO Hendrik Verfaillie.

Table 1

Roundup's price and sales (US and overseas)

Year	Price (\$ per gallon)		Quantity (millions of gallons)	
	US	Overseas	US	Overseas
1995	45	21	13	25
1996	44	20	16	30
1997	40	18	20	40
1998	35	16	28	54
1999	33	15	33	64
2000	28	14	40	73
2001	25	15	45	72
2002	23	14	39	55

Source: Bear Stearns proprietary data, with thanks to Frank Mitsch.

Exhibit 1

Roundup's price and sales (US and overseas)

