

Is Biotechnology the Answer? The Evidence From NAFTA

By Gerardo Otero and Gabriela Pechlaner

SINCE GENETICALLY MODIFIED FOOD CROPS were first commercialized in the mid-1990s, they have been touted as a miracle technology that, if only given the chance, will make deserts bloom and put an end to world poverty. The intensity of these claims is not tempered by the fact that most transgenic crops are unintended for direct human consumption.

Grown in large industrial monocultures, transgenic soybeans (which account for two thirds of global biotech food production), corn (one quarter of production), cotton, and canola are sold in volatile global markets as the raw material for cattle feed, agro-fuel, cooking oil, and sweeteners, among other products. Five agrochemical companies—Bayer, Syngenta, BASF, Dow AgroSciences, and the Monsanto Company—dominate the development and production of these products, while their customers are mostly well-capitalized, medium- to large-size farmers looking to mass-produce cash crops.

Even though such a crop system is ill-suited to feeding people, last year's spike in global food prices nonetheless spurred a return to the hopeful industry rhetoric among policy makers and commentators who strongly endorsed transgenic food as a necessary solution to the crisis.¹ World hunger, in this view, can only be eradicated with larger, cheaper, and more efficient crop yields in poor countries, and transgenic crops are said to hold this promise. As one particularly adamant commentator put it recently: "it would be criminal to disregard the hope that biotechnology offers to the world's most malnourished people."²

But to fully answer the question of whether agricultural biotechnology can help solve the food crisis, we must consider its political econ-

omy and the differing power relations that rich and poor countries have with it, especially within the context of trade liberalization, privatization, and what we call "neoregulation" (more on this below). The biotechnology revolution of the 1990s was superimposed on the reforms brought about under neoliberal globalism, and in the years since, transgenic crops have inundated both the countryside and supermarkets. They are the flagship technology of agricultural neoliberalism, going hand in glove with free trade agreements.

For this reason, the three countries of North America, economically integrated since 1994 under NAFTA, provide a good opportunity to analyze the differential impact that transgenic products have had in nations with varying levels of capitalist development. The contrasts are predictably stark, given that one of these countries, the United States, is the top global biotech farmer, home to more than half the world's farmland devoted to growing transgenic crops. Three-quarters of publicly traded biotechnology companies are U.S.-based, and U.S. spending on biotechnology research and development, both private and public, is vastly greater than that of any other country.³ The most prominent U.S.-based producer, the Monsanto Company, sold 88% of transgenic seeds in 2004.⁴ Clearly, the U.S. biotechnology sector has a significant stake in disseminating transgenic agriculture while maintaining its dominant position in both research and development and in patenting new organisms.

Canada, in contrast, invests 1.5% of what the United States does in development and has a much smaller land area dedicated to producing transgenic crops. But as the fourth-highest

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producer by production area (after the United States, Argentina, and Brazil), Canada is a significant player, globally speaking.⁵

The U.S. and Canadian transgenic industries have met with such success partly because of their shared regulatory regime, known as “substantial equivalence,” in which transgenic products are assumed to be practically identical to conventionally bred ones. No special consideration is given to the process in which they are developed, or for any potential deviations that might arise specific to that process. Transgenic products, whether for domestic consumption or export, are not labeled; because of this,

Canada's food consumption surpassed Mexico's and continued growing, approaching U.S. levels by 2003. Mexico was left behind in per capita food consumption by its northern partners, even prior to the sharp food price increases beginning in 2007.

If we break down the analysis by food components—protein, vegetables, and fats—we can also see some interesting contrasts, which give us a clear indication of each country's food strength or vulnerability. In per capita protein consumption (see figure 2, following page), all three countries experienced slight increases, but Mexico's was 15 to 25 grams per day below that of Canada and the United States at any given time between 1985 and 2003. What increase there is in Mexico's protein intake is

