

Genetically engineered (GE) seeds - corn, soybean and cotton - now dominate the U.S. market.

GE technology has dramatically driven up the average cost of seed, cutting deeply into farmers' income.



The Unsettling Story of Seeds

Impacts on Farm Income

Farm income has taken a direct hit due to the diametric rise in GE seed prices. In comparison, organic corn and soybean seed are much cheaper than GE RoundUp Ready (RR) versions.

From 1975 through 1997, soybean farmers spent 4% to 8% of crop income on purchased seed. In 2009, farmers planting GE soybean seeds spent 16.4% of soybean crop income on seed – more than twice the historic norm.

Farmers planting Monsanto's RR 2 soybeans in 2010 spent an estimated 22.5% of gross income per acre on the purchase of these GE seeds.

Corn growers spent 4% to 11% of crop receipts per acre on seed from 1975 through the beginning of the GE era in

1996. Seed accounted for 12% to 15% of operating costs on a per acre basis. Since 1996, the price of conventional seed has risen just marginally above historic levels as a percent of gross income and operating expenses.

GE cotton seed price inflation has dwarfed the pace of increases in the price of GE soybean and corn. From 1975 through 1996, the price of cotton seed only doubled, but in the GE cotton era, it has risen from \$73 to \$589 per one hundred pounds (CWT).

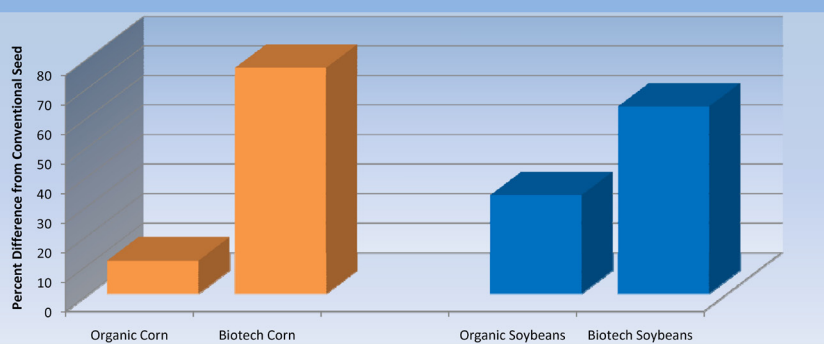
In contrast, GE corn seed prices have skyrocketed. In 2009, GE corn seed accounted for 19% of gross income and 34% of operating costs per acre, about twice historic norms.



Choices for Non-GM Processed Foods Become Limited

One of the consequences of the near total domination of the conventional corn and soybean seed markets by GE seeds is that consumers rarely can find processed and packaged conventional foods free of GE food content. The only reliable ways to avoid GE processed foods are to seek out certified organic options or foods bearing the Non-GMO Project verified logo.

Figure 1. The Biotech and Organic Seed Price Premium Relative to the Cost of Conventional Seed in 2010F



The Non-GMO Project is currently working with the food industry to expand the availability of non-GMO seeds, ingredients, animal feeds and processed food products. The demand for Non-GMO labeled food is rising faster than the demand for organic food and products.

"He who controls the seeds, controls..."



The Organic Seed Price Premium

The organic soybean seed price premium was about 11% in 2010, compared to the price of conventional soybean seed. The GE seed price premium was about 64%. Accordingly, the biotech soybean seed price premium exceeds the organic seed price premium by 5.8-fold.

The story is similar in the case of conventional and GE corn seed. In 2009, the GE corn to conventional corn seed premium was 69%, with GE seeds costing \$235 per unit (enough to plant about 2.5 to 3 acres). Conventional corn seed prices were less than \$100 per unit through 2007.

The premium paid for GE corn seed in 2010 was almost seven-times greater than the organic corn seed premium.

Corn growers planting "SmartStax" corn, the first-ever, eight-trait,



stacked GE variety in 2010, will pay 2.1-times more per unit than farmers planting conventional seeds, and almost four-times more per unit of seed than conventional corn farmers paid just ten years earlier.

Organic corn seed is much cheaper than GE seed, with the 2010 organic price premium at about 11%, as in the case of organic soybeans. The biotech corn seed price premium is 6.9-times bigger than the organic seed price premium.

GE cotton seed price inflation has dwarfed the pace of increases in the price of GE soybean and corn. Over two decades from 1975 through 1996, the price of cotton seed only doubled, but in the GE cotton era, it has risen from \$73 to \$589 per CWT. Today, GE cotton seed costs \$700 per CWT, an amazing 5.9-fold more than conventional cotton seed.



For more details on how the biotech and organic seed price premiums are calculated, see The Organic Center report entitled "The Magnitude and Impacts of the Biotech and Organic Seed Price Premium", along with the "Seed Premium-Farm Income Database", compiled by The Organic Center. The report and database are available free of charge via the The Organic Center's website (<http://www.organic-center.org/science.tocreports.html>).

The Biotech Seed Price Premium

Farmers have traditionally paid about a two-fold premium for soybean seed, compared to the market price of soybeans. The ability of farmers to plant last year's soybeans in order to produce the next year's crop kept a lid on soybean seed prices, until the GE era.

But when GE seeds were introduced in 1996, the companies developing GE crops insisted that farmers buying GE seeds sign a "technology agreement" that prohibits the replanting of harvested GE soybeans. This requirement severed the historic linkage between soybean market prices and soybean seed prices, since farmers planting GE soybeans had to buy new seed each year.

The result was predictable. In 2006, the GE soybean seed price premium, relative to the price of soybeans, had reached 5.5-fold.

Farmers purchasing Monsanto's Roundup Ready (RR) 2 soybeans in 2010 paid about 42% more per bag than they paid for RR soybeans in 2009. The RR 2 soybean seed-to-soybean price ratio was around 7.1 in 2010, more than three times the historic norm.

In the 25 years from 1975 through 2000, soybean seed prices rose a modest 63%. Over the next ten years, as GE soybeans came to dominate the market, average prices rose an additional 230%. The \$70 per bag price set for RR 2 soybeans in 2010 is twice the cost of conventional seed and reflects a 143% increase in the price of GE seed since 2001.



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sometimes the greatest ideas are the simplest.

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