Who Benefits from GM crops?

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Friends of the Earth Europe

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GM crops in the world

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GM crops in the world

- **Grown significantly in only 5 countries in the world**
  - US and Canada
  - Argentina, Brazil, Paraguay
  - These countries represent 90% of all GM crops grown in the world
- **The US grows 50% of all GM crops in the world**
- **The US and Argentina together grow 70%**

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GM crops in the world

- **GM soy, maize and cotton = 95% of world GM acreage, virtually all the rest is GM oilseed rape (canola)**
- **Stagnation of traits:**
  - 81% of these crops are herbicide tolerant (mainly to Monsanto's Round Up Ready)
    - 68% are HT alone
    - 13% have both HT and IR traits
  - 19% are insect resistant

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- **Only 5 countries**
- **Only two traits**
- **Only 4 crops**
- **Less than 2.4% of global agricultural land**

- **Nations with highly-industrialized export-oriented agriculture sectors: not to be under-estimated**
- **GM crops currently are for meat production and processed foods**
  - EU imports approx 75% of its needs for animal feed (plant protein, mainly soy)

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- United States, as « lead » grower, is isolated in the world
  - **It authorizes GMOs more quickly than any other country, including its export markets (European Union)**
  - **Unlike Brazil and Argentina, it has no legal requirement for export markets to be analysed before authorising a new GM crop for cultivation**
  - **This means that – as well as being less competitive than Brazil and Argentina – it cannot meet EU import requirements on contamination (“zero tolerance”)**
  - **Voluntary scheme being pushed by BIO**
- Major lobby underway, using the panic caused by increased ag commodity prices and concerns of EU livestock sector, to force EU to weaken import rules

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In Europe

- Area under cultivation is tiny. This forced the biotech industry to inflate its figures for 2008 by dropping France!

- 2% rather than +21%!

- GM crops are 0.06% of agricultural land

74% of this is located in one country, Spain

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13 years of commercial growing: the evidence

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- Pesticide use
- Yields
- “Beneficial” traits

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Pesticide use

- **Weeds develop resistance to chemicals designed to kill them**
- **This first emerged in the US in the 1970s**
- **There have been three major waves since the 70s**
  - 1970s - Weeds resistant to atrazine and related herbicides of the photosystem II inhibitor class
  - 1980s – Weeds resistant to ALS inhibitors
  - 2000s – glyphosate resistant weeds

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GM crops and pesticide use in the U.S.

- **1994-2005: 15-fold increase** in the use of glyphosate on soybeans, maize and cotton. In 2006, glyphosate use on soybeans jumped by **28%.**

- an epidemic of glyphosate-resistant weeds, and rising use of other herbicides to control them: the amount of **2,4-D** (a component of Agent Orange) applied to U.S. soybeans **more than doubled** from 2002 to 2006.
- The use of **atrazine** (banned in the EU due to links to health problems) on corn/maize increased by **12%** between 2002 and 2005.

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GM crops and pesticide use in the U.S.

- **US Department of Agriculture confirms that farmers have begun to apply higher doses of glyphosate**
- **Agricultural scientists are sounding the alarm:**

  “*Glyphosate is as important to world agriculture as penicillin is to human health*”

  Stephen Powles, Agronmist, Western Australian Herbicide Resistance Initiative

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- **Monsanto, 2007 and the American Soybean Association, 2007:** return to multiple-herbicide weed control systems on RR soy
- **BUT, weed resistance is not leading to a review of HT crops, quite the opposite:**
  - 62% of field trials in the US are for Roundup Ready crops
  - Roundup Ready Flex cotton (to withstand higher applications of Roundup)
  - Monsanto developing “Dicamba” resistant crops (same class as 2,4 D), partnership with BASF
  - Other HT GM crops for ex by DuPont Pioneer

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Syngenta Crop Science CEO:

“[Weed] Resistance is actually quite healthy for our markets, because we have to innovate”

(source: ETC)

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Brazil

- Brazilian government authorities have documented an **76.9%** increase in glyphosate use from **2000 to 2005**, together with the rapid emergence of weeds that are resistant to the chemical.

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Argentina:

the case of Johnsongrass

- **Considered to be one of the worst weeds in the world**
- **In 2007, reported in 6 provinces in Argentina**
- **Recommendation to control resistant weeds is to use a cocktail of herbicides including some of the most toxic.**
- **Estimations are that additional 25 million litres of such herbicides will be needed each year**

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The case of Johnsongrass:

- **Estimation that herbicide costs will double in affected areas**
- **Increase in production costs of between USD 160 to USD 950 million per year**
- **Bill drafted by Argentinean Congressman in 2007**
  - Calls for an eradication of johnsongrass
  - Acknowledges that "***market forces cannot control this pest***" and that a special fund is needed to fund eradication measures. Fund would include taxpayers money, and contributions for International organisations

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Yield

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- **Yield depends on numerous factors (weather, irrigation, fertilizers, soil quality, farmer management skills …)**
- **HT crops and “yield drag” caused by glyphosate hindering uptake of essential nutrients which reduces yield and makes plants more susceptible to disease**
- **Countries like Paraguay have low yields due to drought: RR soy may perform worse in dry conditions**

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- **Bt cotton infested with by secondary pests resulted in farmers having to spend as much on chemical pesticides as farmers that did not pay the premium for GM seed.**
- **Average cotton yields have stagnated since the adoption of Bt cotton in the US**

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- “Beneficial” traits

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Will GM crops feed the world?

- **No GM crop have been marketed with**
  - Increased yield
  - Enhanced nutrition
  - Drought-tolerance
  - Salt-tolerance
- **All companies research these traits but this is a small part of their R&D and despite years of research still a long way off commercialisation**
- **Main focus of all companies is HT, and IR plants**

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The Food Price Crisis

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The Food Price Crisis

- **Number of hungry and poor to 1 billion**
- **Food riots and protests in a number of countries**
- **Average prices:**
  - +60% maize
  - +76% soy
  - +54% wheat
  - +104% rice

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The Food Price Crisis

"Exerts say that we'll need to double agricultural output by 2050 to feed a growing world. That's challenge enough. But with a changing climate, the challenge becomes greater.

[.....]

Monsanto's advanced seeds not only significantly increase crop yields but use fewer key resources – like land fuel – to do it

That's a win-win for people, and the earth itself"

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"The recent surge in agricultural commodity prices could be exacerbated by trade obstacles related to GMOs"

José Manuel Barroso,

President of the European Commission

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"I think the debate about higher prices and being able to meet the demand of people in the world for food is a perfect opportunity to make the case [for GM crops] …We may have a window of opportunity here and I would encourage you to exploit this"

President of the American Farm Bureau (at a UK National Farmers Union conference)

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- **Prices and profit: the case of the US**

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- Price of soy seed **+50%** over the last **2** years
- Price of cotton and maize seed **+50%** over the last **3** years
- Price of Roundup **+134%** over the last **2** years

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- If Monsanto's new Roundup Ready Soy 2 were to replace half of the current RR soy crop in the US: price increase for farmers would be **$788 million**
- "Trait penetration" strategies increase prices in such a way to push farmers to new GM crops even if they are not interested in the traits
- Predicted revenue for Monsanto 2007 – 2010: **+74%** (Goldman Sachs)
- With the food price crisis, biotech and agrochemical companies' profits have increases **EXPONENTIALLY**
- Farmer profit has been dented

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- Monsanto has 75 employees and an annual budget of $10 million allocated to target farmers (@500/year)

- Taking out of court settlements into account, Monsanto has collected between $85 and $160 million from farmers

There is a shift away from GM seed but, in the case of soy for example: farmers can't access GM free seed

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Brazil

- Parana and Mato Grosso moving away from GM soy because of
  - **Lower yield**
  - **Higher glyphosate prices**
  - **Higher seed prices**
  - **Lower price for GM soy than for non GM**

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“Satisfying the demand curve [of the food crisis] is a great business”

Hugh Grant

Monsanto CEO

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To conclude

- **After 13 years of commercial growing, the evidence is there:**
  - Increase in weed resistance
  - Increase in glyphosate use but also in more toxic pesticides
  - Yield GM vs conventional at best same or less (yield drag)
  - GM seeds more expensive, input costs increasing
  - Farmer convenience effect being eroded
  - Shift away from GM crops
- **Food price crisis profits the biotech companies**

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- 5 year global assessment of agriculture (IAASTD): critical of intensive farming and of GM crops
- An opportunity to push for real solutions and a GM free world

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“The essential purpose of food, which is to nourish people, has been subordinated to the economic aims of a handful of multinational corporations that monopolize all aspects of food production, from seeds to major distribution chains, and they have been the prime beneficiaries of the world crisis”

Miguel D’Escoto Brockmann

President of the General Assembly of the UN

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Thank you

GMOs and pesticide use

http://www.foeeurope.org/GMOs/Who_Benefits/FULL_REPORT_FINAL_FEB08.pdf

http://www.foeeurope.org/GMOs/Who_Benefits/QA_FINAL_FEB08.pdf

Who Benefits from GM crops in a food price crisis?

http://www.foeeurope.org/GMOs/Who_Benefits/full_report_2009.pdf

GMO crops in the EU, factsheet 2008

http://www.foeeurope.org/GMOs/Who_Benefits/EU_briefing_2009.pdf

Animal feed price increase and GMOs (« zero tolerance »)

http://www.foeeurope.org/GMOs/animal_feed/Briefing_animal_feed_GMOs_May_2008.pdf

http://www.foeeurope.org/GMOs/ZERO_TOLERANCE_Campaigner_briefing_FINAL.pdf

Jobs and competiveness

http://www.foeeurope.org/publications/2007/FoEE_biotech_MTR_midlifecrisis_March07.pdf

Analysis of certification schemes for soy and palm

http://www.foeeurope.org/agrofuels/sustainabilitysmokescreen.html

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