

The Pros and Cons of Producing and Consuming Transgenic Crops

Stengths/limitations, opportunities lost

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Facts

Transgenic (GMO) foods are among the most tested products in the world.¹

Transgenic crops pose no more risk than conventionally bred crops.¹

There is limited/no feasible mechanism that they would be harmful.¹

The genes/proteins inserted have been well studied for decades.¹

Transgenic crops have decreased pesticide use and help farmers remain competitive.¹

In 17 years since release **there has not been one case** of illness or death related to the products.

¹ The Impact of Genetically Modified Crops on Farm Sustainability in the USA. National Academies Press, 2010

Fantasy

Transgenic (GMO) cause cancer, autism, arthritis, asthma, ADHD, obesity, morgellian's disease, parkinson's, and 100 other ailments.

Farmers must use GM crops because companies force them to.

Farmers are sued for a few GM seeds in their fields if they don't have contract with the company.

There have been no long term studies and nobody knows what the genes do.

There are unknown effects and we should not use the technology.

GM crop are engineered to displace all other crops and give a few companies world domination and control of the food supply.

Many others!

GM Acreage

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THE IMPACT OF GE CROPS ON FARM SUSTAINABILITY

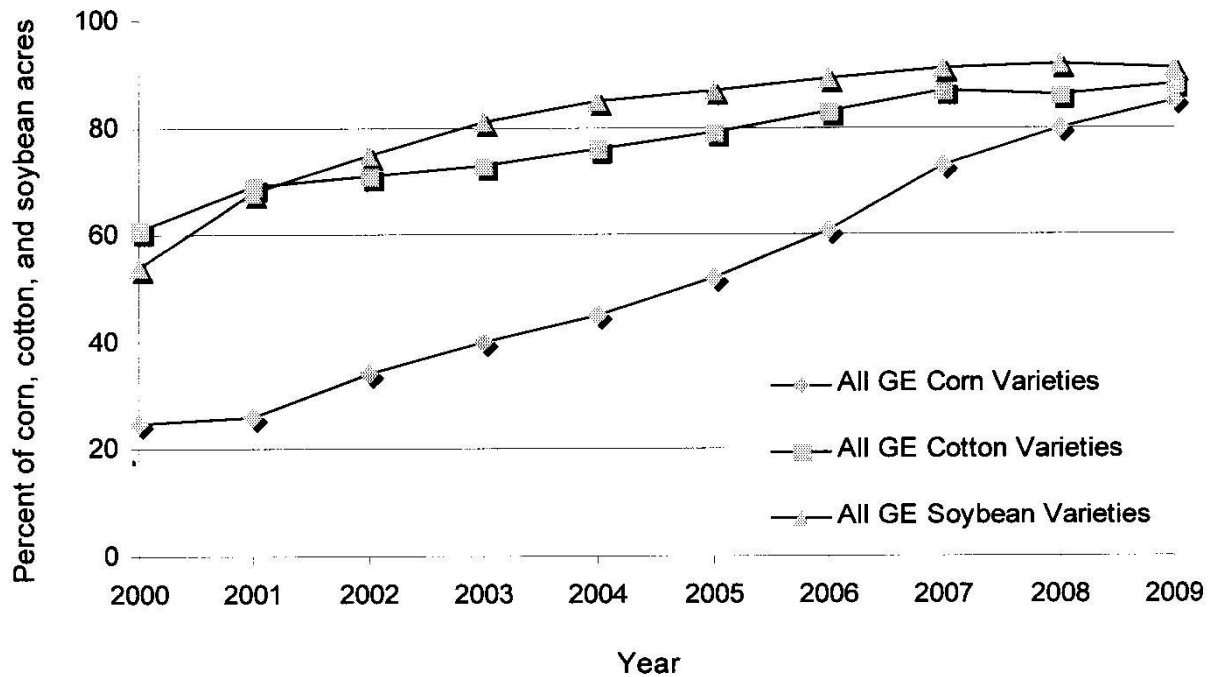


FIGURE 1-3 Nationwide acreage of genetically engineered soybean, corn, and cotton as a percentage of all acreage of these crops.

SOURCE: USDA-NASS, 2001, 2003, 2005, 2007, 2009b.

GM Crops Available Now

Corn (field corn, some sweet corn)

Canola

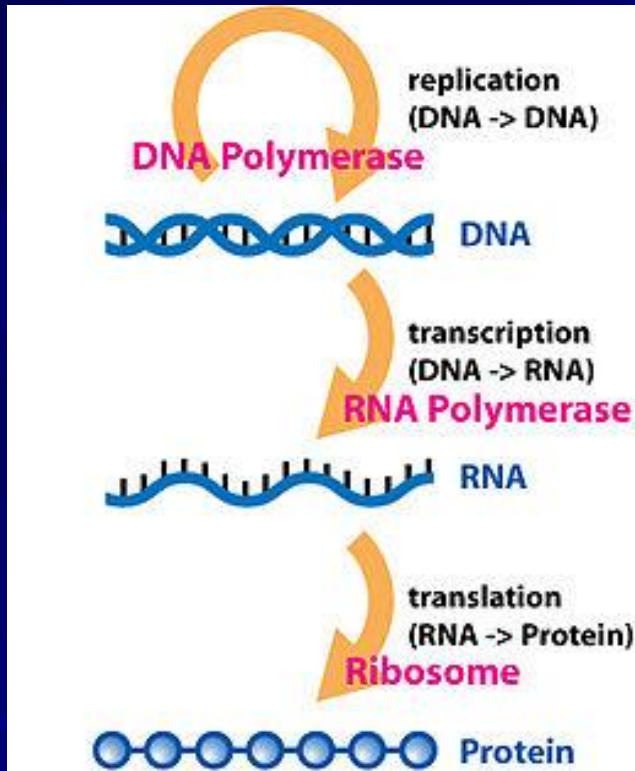
Cotton

Soybean

Sugar beet

Papaya - Squash

Central Dogma of Molecular Biology



DNA – genetic material, Hard copy safe in the nucleus of a cell



RNA – Transient copy of the same information (+/-)



Protein – Does the work!
Enzymes, structures, etc.



Papaya Ringspot Virus

Good example of RNAi suppression





Gene Silencing

GM papaya saved an industry, not a Big Ag product

Share the vision, what else could we silence?

- allergens
- anti-nutrients
- physiology associated with post-harvest decay
- many others!!

Turn something ON that isn't there normally



GMO Crops Make Pesticides

Corn

engineered to grow
its own pesticide

[learn more >](#)



You're Eating WHAT?

Stop eating GENETICALLY ENGINEERED FOODS,
and please copy this for your friends!

*Caution! This corn
contains pesticides.*

**Say NO
to GMO!**



**A Pesticide
in Every
Bite?**

**Stop
Monsanto
GMO Corn**

 CENTER FOR
FOOD SAFETY

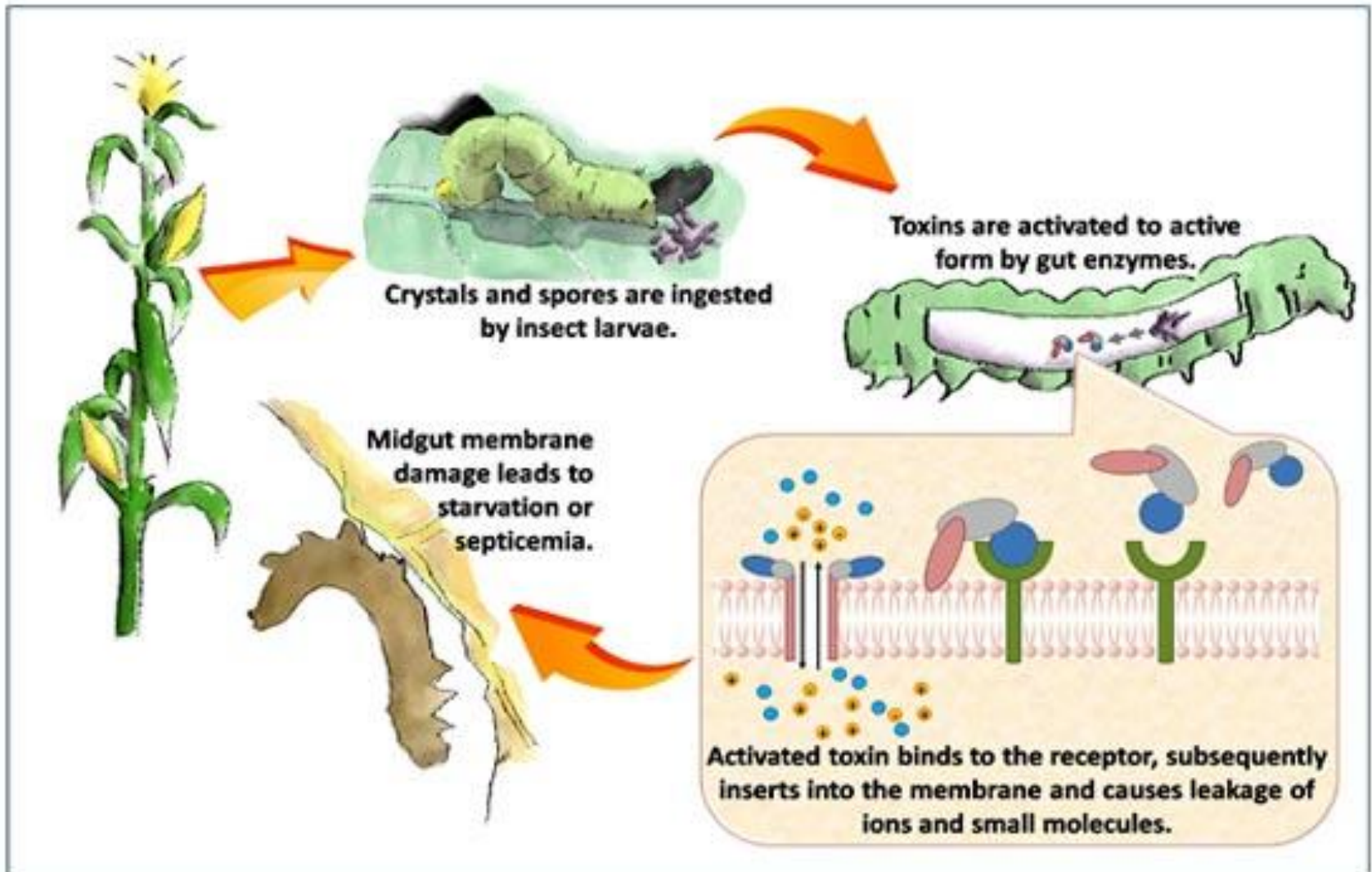


CEH



DeepIllustrations.com

How Bt Works



Advantages of the Bt trait

- Less insecticide sprayed on fields
- Lower costs to farmers
- Lower impact on environment (in China 2003, Bt cotton prevented >300,000 tons of insecticide use)
- 50-75% less pesticide used since 2003
- lower chance for resistance
- targeted to larvae of specific insects, not beneficials
- no insecticidal residues

Limitations to Bt

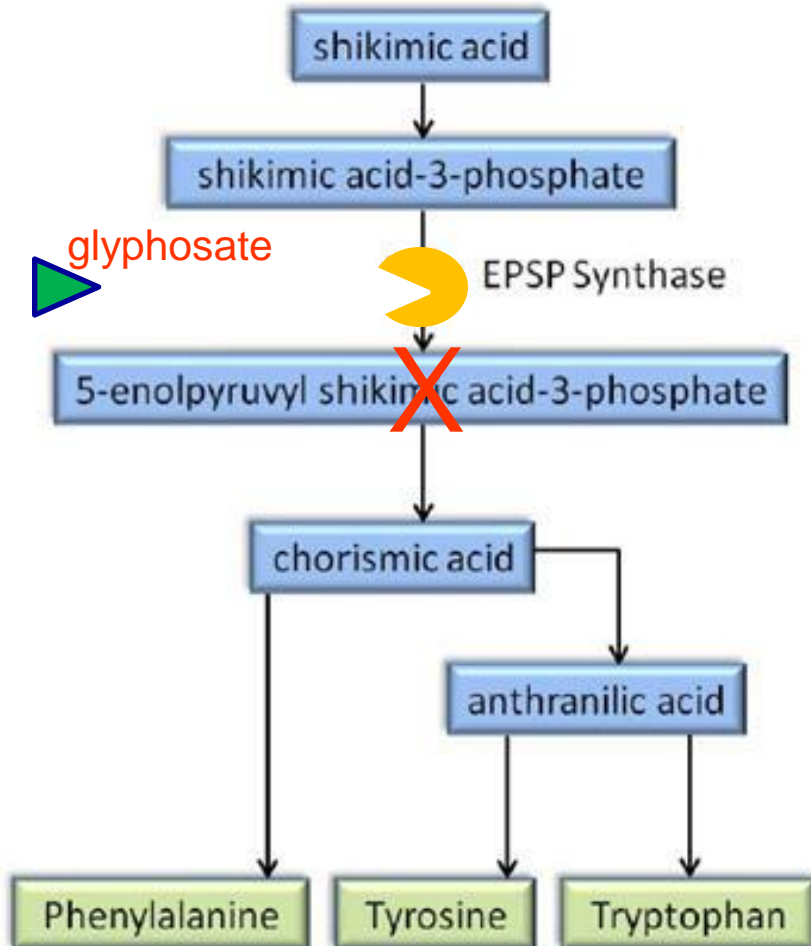
- **The need to include non-Bt refugia**
- **Development of resistance**
- **Does not work well on rootworms**

Roundup Ready Products

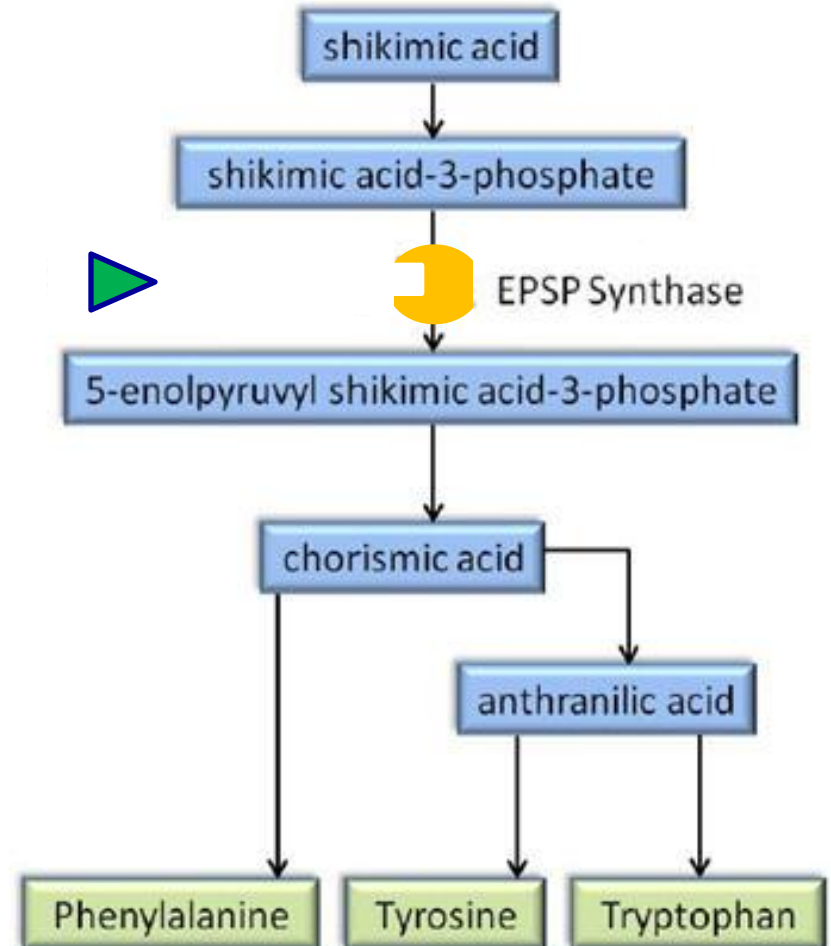


A gene is inserted that allows plants to survive in the presence of the herbicide. Farmers can spray to kill non-transgenic plants.

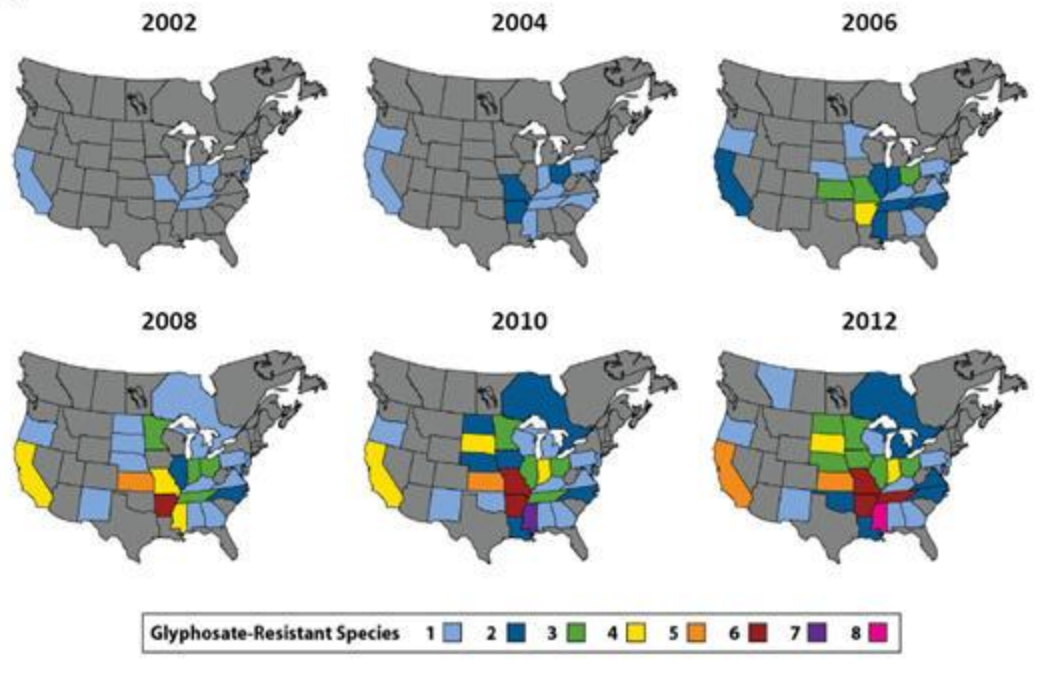
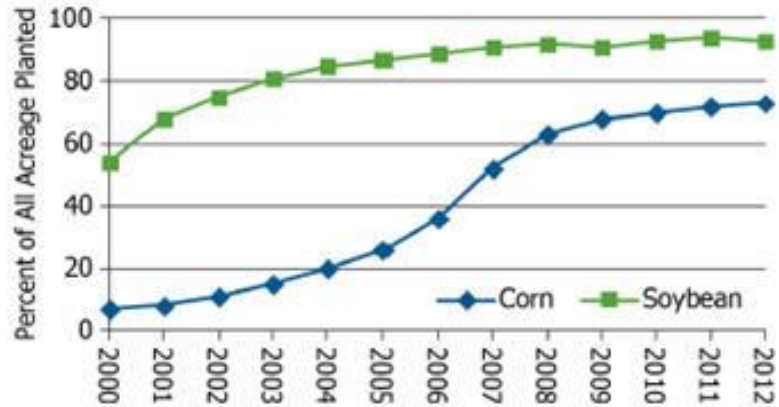
Conventional Hybrid



Glyphosate Resistant



•Significant Down Side



The Social Interface

Calls for increased regulation

Calls for labeling, preceding bans and boycotts

Emotional, scare tactics

Allegations, accusations, mischaracterization of scientists

Problem – Who are the ‘Experts’?



These are the people most influencing the conversation. They are not scientists, they hold positions contrary to science. They operate using fear.

Problem – How They Fool You

Publishing in “predatory” or pay-to-publish journals with low impact and standards

Public cannot discern reviews from primary research

Fooled by façade organizations / “news” sources that claim danger

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Genetic Roulette - The Gamble of Our Lives is the Award Winning Film!

Genetic Roulette - The Gamble of Our Lives has won the 2012 Movie of the Year by the Solari Report and the Top Transformational Film of 2012 by AwareGuide!

Rent or purchase the film today!
<http://geneticroullettemovie.com>

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Action Alerts!

Gluten Disorders linked to GMOs - New Report

A report was released today proposing a link between genetically modified foods and gluten-related disorders: everything you need to know – including a **brief article summarizing the findings** – can be found at www.gdfransandgmos.com

WATCH Genetic Roulette

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Weight loss-obsessed girls eating GMO cotton balls soaked in lemon juice

Wednesday, December 04, 2013 by **Dan G. Hughes, M.D.**
The cotton ball diet eating disorder, vegetarian obsession

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Nespresso Official Site | **Recycle a 97¢ Club Credit, Free Shipping on Machines Over \$179.** | www.nespresso.com/rollback

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1 Tip To Lose Belly Fat | **Outcomes of research may need to vary by eating fat: it's not all fat.** | www.dietdoctor.com/gps.com

Nursing School Online | **Save your \$8 To \$28 in 3 Days! See, Online, Affordable & Free Here!** | www.classofnurses.com

(NaturalNews) A practice being promoted on YouTube as a fad diet is actually a form of disordered eating that can pose serious health risks, health professionals are warning.

In video promoting "the cotton ball diet," young girls soak cotton balls in lemonade or orange juice and then swallow them. The girls claim that the cotton balls expand in the stomach, producing a feeling of fullness and thereby making them eat less during the day. In this, the cotton ball diet may seem at first to resemble appetite-suppressing drugs such as Lorcaserin.

But everything about the diet is dangerous, experts warn, from the specifics of the practice to the attitude behind it.

"Like eating your t-shirt"

To start with, most cotton balls are not actually made from cotton, but rather from synthetic, bleached polyester fibers full of dangerous chemicals.

"Swallowing a synthetic cotton ball is like dipping your T-shirt in orange juice and eating it," said Brandi Koskie, managing editor of the website **Chzr in a View**.

But even swallowing an expensive, organic cotton ball is highly dangerous. Ingesting any fibrous, indigestible material can lead to clumps known as bezoars, producing life-threatening obstructions in the intestinal tract.

Most Popular

- **Health Ranger Warns that Pure from 5¢ Health News Pore-Clearing Food Lip**
- **Top-rated book 'Latter Age, Say on Goodbye' in media**
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Help Save Hubsy, CNY
Collective Tribute Media to make Los Angeles' largest GEM-ONE Day in DC
Like dog manpage, the secret of the Hubsy
Video just that takes the 'Tribal' but others can make it to be born with autism
Cancer CURE



Scientific decisions and policy.
Should we rely on science, evidence and reason, or fear?

The Problem – the Mommy Factor



Deception

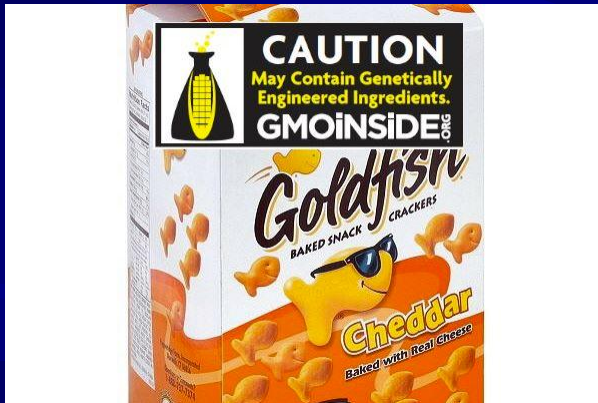


Poison



Caution Gmos

Food Terrorism



Bad Science and the “Link” to Tumors



Table 2. Summary of the most frequent anatomical pathologies observed.

Organs and associated pathologies	Controls	GMO 11%	GMO 22%	GMO 33%	GMO 11% + R	GMO 22% + R	GMO 33% + R	R (A)	R (B)	R (C)
Males, in liver	2 (2)	5 (4)	11 (7)	8 (6)	5 (4)	7 (4)	6 (5)	11 (5)	9 (7)	6 (5)
In hepatodigestive tract	6 (5)	10 (6)	13 (7)	9 (6)	9 (6)	13 (6)	11 (7)	23 (9)	16 (8)	9 (5)
Kidneys, CPN	3 (3)	4 (4)	5 (5)	7 (7)	5 (5)	4 (4)	4 (4)	6 (6)	5 (5)	3 (3)
Females, mammary tumors	8 (5)	15 (7)	10 (7)	15 (8)	10 (6)	11 (7)	13 (9)	20 (9)	16 (10)	12 (9)
In mammary glands	10 (5)	22 (8)	10 (7)	16 (8)	17 (8)	16 (8)	15 (9)	26 (10)	20 (10)	18 (9)
Pituitary	9 (6)	23 (9)	20 (8)	8 (5)	19 (9)	9 (4)	19 (7)	22 (8)	16 (7)	13 (7)

After the number of pathological abnormalities, the number of rats reached is indicated in parentheses. In male animals pathological signs are liver congestions, macroscopic spots and microscopic necrotic foci. Hepatodigestive pathological signs concern the liver, stomach and small intestine (duodenum, ileum or jejunum). Only marked or severe chronic progressive nephropathies (CPN) are listed, excluding two nephroblastomas in groups consuming GMO 11% and GMO 22% + Roundup. In females, mammary fibroadenomas and adenocarcinomas are the major tumors detected; galactoceles and hyperplasias with atypia are also found and added in mammary glands pathological signs. Pituitary dysfunctions include adenomas, hyperplasias and hypertrophies. For details of the various treatment groups see Fig. 1.

Seralini et al 2012
Figure 3

Cancer row over GM foods as study says it did THIS to rats... and can cause organ damage and early death in humans

- French team claim bestselling brand of GM corn caused tumours and multiple organ damage
- Leading scientists have questioned the study and its results, claiming it has 'no value'

By SEAN POLLTER

PUBLISHED: 09:21 CST, 19 September 2012 | UPDATED: 02:49 EST, 20 September 2012

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Rats fed a lifelong diet of one of the bestselling strains of genetically modified corn suffered tumours and multiple organ damage, according to a controversial French study published today.

Scientists said the results raised serious questions about the safety of GM foods and the assurances offered by biotech companies and governments.

The first lifetime trials involving rats fed on GM corn found a raised incidence of breast tumours, liver and kidney damage.



Site Web



Today's

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New Proof: GMOs Cause Tumors, Organ Damage, and Premature Death in Rats

The first long-term study shows the devastating effects of Roundup herbicide and genetically modified maize

September 19, 2012 Megan Bedard

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Need another reason to buy organic? Rats fed Roundup GMO corn developed tumors and died prematurely. (Photo: G Robert Bishop/Getty Images)



Logical Lapses- Developing Fear with Correlations



nes

RT QUESTION MORE. **LIVE**

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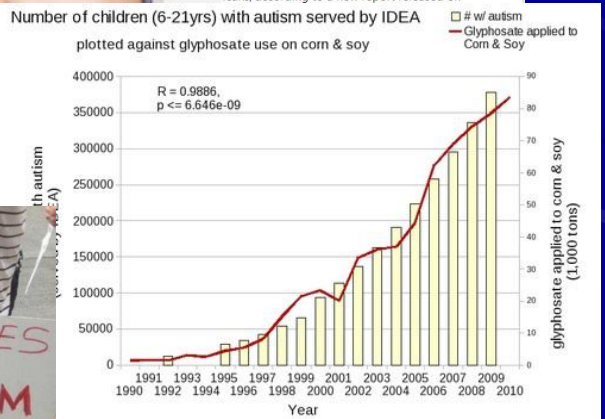
GMOs linked to gluten disorders plaguing 18 million Americans - report

Published time: November 26, 2013 20:20
 Edited time: November 28, 2013 14:20

400% increase in allergies since GMOs were introduced.

Tags: Food, GMO, Health, Science, USA

Good science does not get coverage



Effects

Introduction of bad public policy

Misdirection from legitimate problems

Delaying emerging science that could benefit

Suspicion of proven successes

Mistrust of science/scientists

Reliance on less useful technology

Public labs, small co's can't compete

Harming non-GMO industries



Lost Opportunities

Opposition to this technology has significant costs.

The needy

The environment

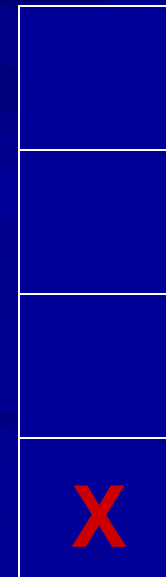
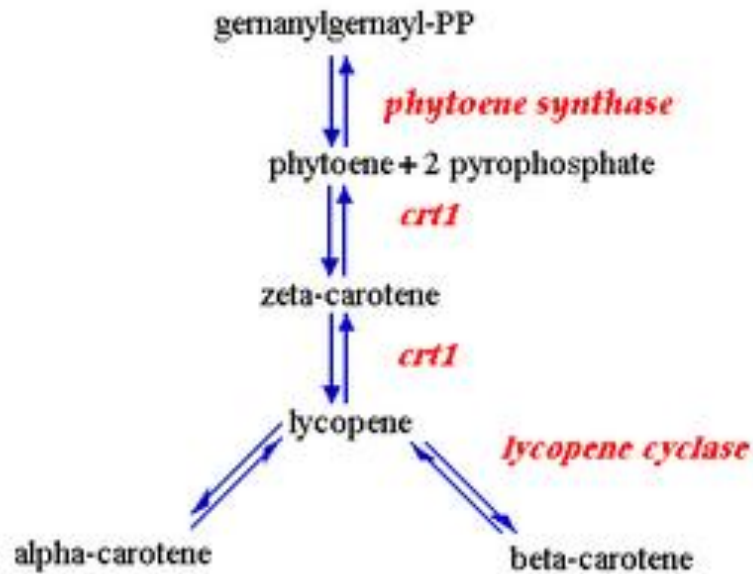
Farmers

Consumers

Golden Rice



Opposition to golden rice cost \$2 billion to farmers in developing countries and 1.4 million human years – Wesseler et al., 2014



Farmers

Consumers

Environment

Needy

Cassava

250 million depend on cassava

50 million tons lost to virus.



Virus Resistant Cassava (VIRCA)

Biocassava Plus (BC Plus)

X

Farmers

Consumers

Environment

X

Needy

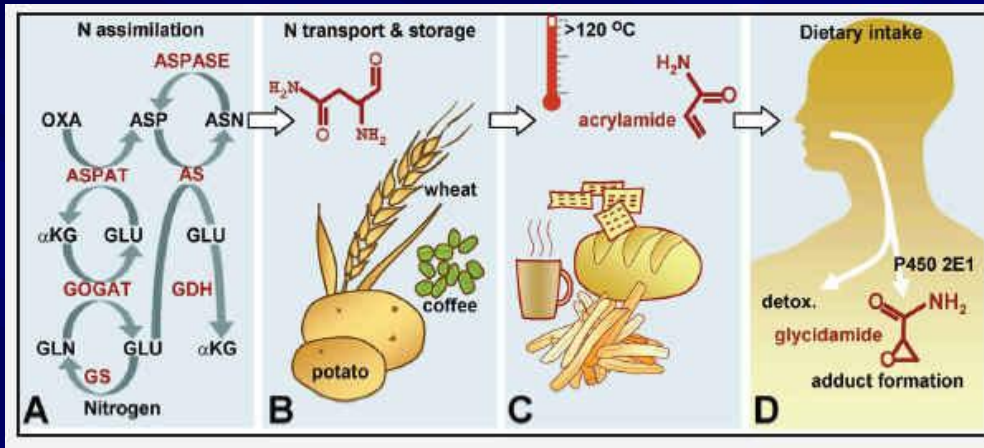
BS2 Tomato

A pepper gene in tomato eases black spot and wilt.



X	Farmers
	Consumers
X	Environment
	Needy

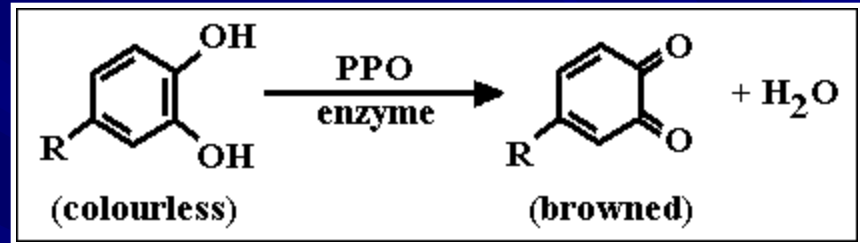
Acrylamide Free, non Browning Potatoes



- Farmers
- Consumers
- Environment
- Needy

Non Browning Apples

Silencing a gene that leads to discoloration



X

Farmers

X

Consumers

Environment

Needy

X

Small Business!

Public Issues

Many calling for labeling of grocery items made from GM crops.

Legislation may eventually be developed in Florida

A “right to know” vs. a new bureaucracy?

Gateway to banning technology that helps farmers and can do much more for the environment and the needy.

IS LABELING REALLY ABOUT OUR “RIGHT TO KNOW” ?

“We are going to force them to label this food. If we have it labeled, then we can organize people not to buy it.”

—Andrew Kimbrell, Executive Director, Center for Food Safety

“Personally, I believe GM foods must be banned entirely, but labeling is the most efficient way to achieve this. Since 85% of the public will refuse to buy foods they know to be genetically modified, this will effectively eliminate them from the market just the way it was done in Europe.”

—Dr. Joseph Mercola, Mercola.com

“By avoiding GMOs, you contribute to the tipping point of consumer rejection, forcing them out of our food supply.”

—Jeffrey Smith, Founder, Institute for Responsible Technology

“With labeling it (GMOs) will become 0%... For you the label issues is vital, if you get labeling then GMOs are dead-end.”

—Vandana Shiva, environmental activist

“The burning question for us all then becomes how—and how quickly—can we move healthy, organic products from a 4.2% market niche, to the dominant force in American food and farming? The first step is to change our labeling laws.”

—Ronnie Cummins, Director, Organic Consumers Association

SOURCES:

In Conclusion

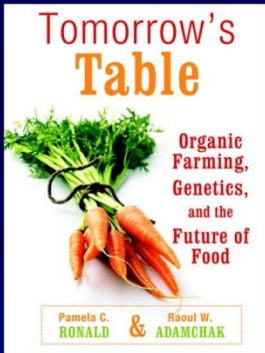
Should we let activists and profiteering booksellers use shock, fear and poor-quality findings to steer production of the next generation of products?

Shouldn't science and reason be steering policy?

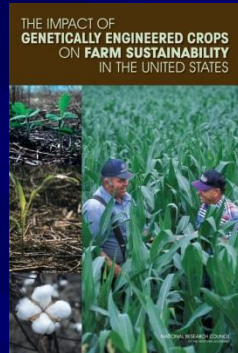
Never make a decision based on fear.

Learn about the topics, make sure you discuss them with family and friends

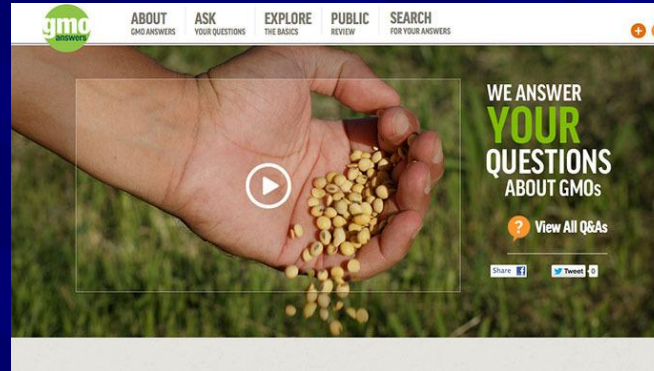
Where do I get good information?



Warm welcome



Cold facts



GMOanswers.com



Biofortified.org



geneticliteracyproject.com