WE ARE WHAT WE EAT

The poisoning of our food supply

"*We now live in a world where it is considered beneficial and necessary to spray poison over all our food and to add more poison (dye, preservatives, flavor enhancers, etc) in processing our food. Then we take more poison to counteract the poisons. Beam me up Scotty, the inmates are insane*." Dr Nancy Swanson; on the history of how corporations have successfully changed the laws in the US to poison our food: 03/04/2014
http://www.examiner.com/article/the-poisoning-of-our-food-supply

"***The world of systemic insecticides is a weird world, surpassing the imaginings of the brothers Grimm. It is a world where the enchanted forest of the fairy tales has become a poisonous forest. It is a world where a flea bites a dog and dies…where a bee may carry poisonous nectar back to its hive and presently produce poisonous honey***." Rachel Carson on systemic insecticides in "Silent Spring": 27/09/1962

"I listened and heard nothing, no bird, no click of insect. There were no bees. The air, the ground, seemed vacant…It felt like another planet entirely."
"Yet, 100 years ago, these same fields, these prairies, were home to 300 species of plants, 60 mammals, 300 birds, hundreds and hundreds of insects. This soil was the richest, the loamiest in the state. And now, in these patches, there is almost literally nothing but one kind of living thing. We've erased everything else. There's something strange about a farm that intentionally creates a biological desert to produce food for one species: us. It's efficient, yes. But it's so efficient that the ants are missing, the bees are missing, and even the birds stay away. Something's not right here. Our cornfields are too quiet. Adapted from the words of Craig Child and Robert Krulwich about a 600 acre farm in Ohio growing GMO corn: 29/11/2012

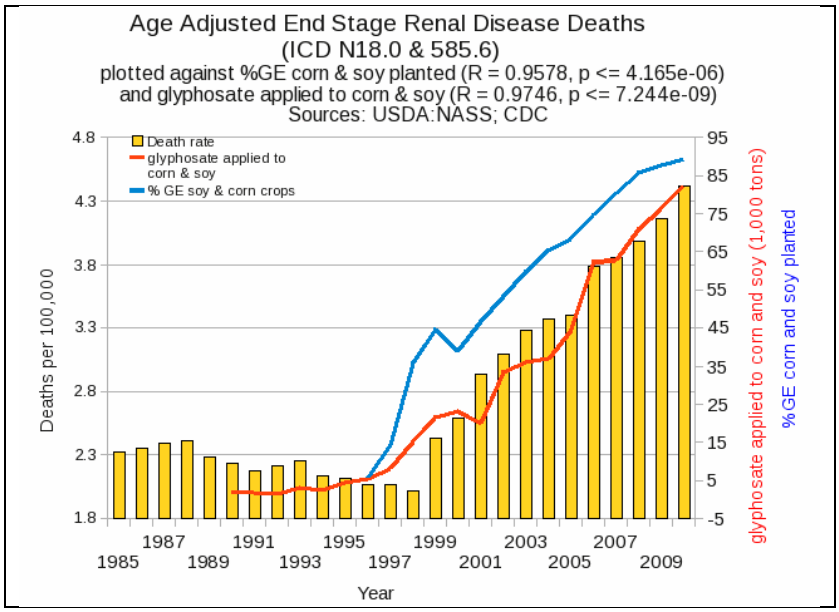
Three different patents have been filed and granted for glyphosate

- As a chelator of heavy metals and a wetting agent in 1961[1]
- As a herbicide in 1968[2]
- As an antibiotic in 2002[3]
- As an anti-protozoal agent in 2003[4]

Independent research shows that glyphosate,[5] (together with atrazine[6]) are endocrine disruptors, yet an assessment of the State of Science of Endocrine Disruptors was prepared for the United Nations Environment Program and the World Health Organization by a group of approximately 50 expert scientists. This eminent body failed to reach a conclusion on atrazine, and did not even consider glyphosate, the most widely used herbicide in the world.[7] There is something wrong with the State of Science.

[1] http://www.google.com/patents/US3160632
[2] http://www.google.com/patents/US3455675
[3] http://www.google.com/patents/US7771736
[4] http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=7771736.PN.&OS=PN/7771736&RS=PN/7771736
[5] http://www.ncbi.nlm.nih.gov/pubmed/19539684
[6] http://www.ncbi.nlm.nih.gov/pmc/?term=10.1289/ehp.9758
[7] http://unep.org/pdf/9789241505031_eng.pdf

Chelation of metals The Sri Lankan Government has recently banned glyphosate because researchers showed that the epidemic of kidney disease in rice paddy fields which started in 1994 was due to glyphosate being used in geological areas with heavy metals and hard water. "*Glyphosate acts as a carrier or a vector of these heavy metals to the kidney*," said Dr Jayasumana, the study's principal author.[8] You can read an interview with the author[9] to find out how he proved the link between the world's number one selling herbicide known as Roundup® (Glyphosate) and a series of mysterious epidemics of fatal chronic kidney disease of unknown origin (CKDu) affecting several poor farming regions around the world. Eleven countries on three continents are affected by CKDu. This includes sugar cane workers in Central America and Louisiana where glyphosate, sprayed by air 6 weeks before harvest, is used to ripen the sugar cane.[10] The aerial spraying of glyphosate could also explain the mass extinction of amphibians across Central America from chytrid fungus.[11]
Asked to explain the lack of concern by authorities he said "*This is not a disease of the Western World; hence, a low visibility in print and electronic media.*" But he is wrong. Chronic kidney disease is an increasing problem in the Western world and glyphosate may be playing a rôle in this epidemic. In a Review article by Samsel & Seneff: Glyphosate, pathways to modern diseases II: Celiac Sprue and Gluten Intolerance,[12] the plot of deaths due to end-stage renal disease in the US aligned with glyphosate usage rates on corn and soy shows strong correlation. In the UK, the incidence of sudden loss of kidney function has increased dramatically. On 28/08/2013 the National Institute for Health and Care Excellence (Nice) said that acute kidney injury (AKI) costs the NHS between £434m and £620m a year – more than it spends on breast, lung and skin cancer combined.[13] "*Only half of patients with AKI had received 'good' care, with delays in diagnosis due to only a third receiving adequate investigations…Between 262,000 and 1 million people admitted to hospital as an emergency in a year will have AKI, of which just under a quarter will die.*"



[8] http://www.mdpi.com/1660-4601/11/2/2125
[9] http://sustainablepulse.com/2014/03/24/scientist-slams-biotech-industry-deadly-kidney-disease-epidemic-exclusive-interview/#.U0AC13xOXcs
[10] http://www.nature.com/ki/journal/v68/n97s/full/4496413a.html
[11] http://www.pnas.org/content/103/9/3165.abstract
[12] http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/ page 172
[13] http://www.theguardian.com/society/2013/aug/28/kidney-care-lives-nice

Graph 1 Deaths per 100,000 from End Stage Renal Disease Deaths plotted against glyphosate applications on corn and soy. Data from USDA and CDC. By kind permission of Dr Nancy Swanson in Samsel and Seneff Glyphosate, pathways to modern diseases II: Celiac Sprue and Gluten Intolerance. [14]

Herbicide Residues of Glyphosate and its breakdown products are present in all our staple foods because Monsanto recommended its use throughout the crop year, including for desiccation (drying) of crops a week before harvest.[15] Foods include bread, cereals, rice, lentils, potatoes, chick peas, beans, sugar cane, beer and whisky less than 7 years old.[16] You can only avoid these residues from disrupting your gut bacteria by eating a totally organic diet. When the CRD Head of Regulatory Policy replied to defend the authorisation of glyphosate on 28/02/2014, he told me that the capability to detect individual pesticides in food had increased from 150 in 2003 to 393 in 2012. He stated: "*In the 2012 Report, although there were a large number of residues found in bread, none of these were at a level to suggest a risk to consumer health.*"[17] However, he failed to reply to my question as to why EFSA was regularly increasing the Maximum Residue Limits (MRLs) of glyphosate in foods at the request of Monsanto to accommodate their practice of desiccation of crops and to protect their imports into Europe.[18] Even as early as 1994, the Joint FAO/WHO meeting on Pesticide Residues granted increased Maximum Residue Limits (MRLs) for glyphosate on soya (from 5 mg/kg to 20 mg/kg) and soya bean fodder (from 20 mg/kg to 200 mg/kg).[19]

Glyphosate as an antibiotic In March 2013, the Chief Medical Officer announced that antibiotic-resistant diseases posed an 'apocalyptic' threat to humans.[20] She pinned the blame on vets, farmers and GPs for overuse of antibiotics. At that time she told MPs that this issue should be added to the national risk register of civil emergencies. A month ago I informed her that glyphosate had been patented as an antibiotic. I have finally had a reply: "*Given the detailed regulatory regime for plant protection products, this is the most appropriate place for these issues to be considered*." However, there was a Press Release: To announce an 'Independent' Report of advice to the government calling for GM crops to be fast-tracked (in fact the Daily Mail revealed that all five GM scientists had vested interests).[21] Right at the top of the Government's shopping list is Monsanto's Roundup Ready Soy, which would vastly increase the use of glyphosate.[22]

Don Huber's letter to Tom Vilsack US Secretary of State for Agriculture (January 2011) about a Pathogen New to Science Found in Roundup Ready GM Crops[23]

Dear Secretary Vilsack:

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[14] http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/
[15] http://www.monsanto.com/products/Documents/glyphosate-background-materials/Agronomic%20benefits%20of%20glyphosate%20in%20Europe.pdf
[16] http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRiF/about-PRiF
[17] February13/hm05
[18] http://www.efsa.europa.eu/en/search/doc/2550.pdf
[19] http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/JMPR/Evaluation94/glyphos.pdf
[20] http://www.theguardian.com/society/2013/jan/23/antibiotic-resistant-diseases-apocalyptic-threat
[21] http://www.dailymail.co.uk/news/article-2581387/Scientists-hidden-links-GM-food-giants-Disturbing-truth-official-report-said-UK-forge-Frankenfoods.html
[22] http://www.testbiotech.de/en/node/898
[23] http://www.i-sis.org.uk/newPathogenInRoundupReadyGMCrops.php

A team of senior plant and animal scientists have recently brought to my attention the discovery of an electron microscopic pathogen that appears to significantly impact the health of plants, animals, and probably human beings. Based on a review of the data, it is widespread, very serious, and is in much higher concentrations in Roundup Ready (RR) soybeans and corn-suggesting a link with the RR gene or more likely the presence of Roundup. This organism appears NEW to science!

This is highly sensitive information that could result in a collapse of US soy and corn export markets and significant disruption of domestic food and feed supplies. On the other hand, this new organism may already be responsible for significant harm (see below). My colleagues and I are therefore moving our investigation forward with speed and discretion, and seek assistance from the USDA and other entities to identify the pathogen's source, prevalence, implications, and remedies.

We are informing the USDA of our findings at this early stage, specifically due to your pending decision regarding approval of RR alfalfa. Naturally, if either the RR gene or Roundup itself is a promoter or co-factor of this pathogen, then such approval could be a calamity. Based on the current evidence, the only reasonable action at this time would be to delay deregulation at least until sufficient data has exonerated the RR system, if it does.

For the past 40 years, I have been a scientist in the professional and military agencies that evaluate and prepare for natural and manmade biological threats, including germ warfare and disease outbreaks. Based on this experience, I believe the threat we are facing from this pathogen is unique and of a high risk status. In layman's terms, it should be treated as an emergency.

A diverse set of researchers working on this problem have contributed various pieces of the puzzle, which together presents the following disturbing scenario:

Unique Physical Properties

This previously unknown organism is only visible under an electron microscope (36,000X), with an approximate size range equal to a medium size virus. It is able to reproduce and appears to be a micro-fungal-like organism. If so, it would be the first such micro-fungus ever identified. There is strong evidence that this infectious agent promotes diseases of both plants and mammals, which is very rare.

Pathogen Location and Concentration

It is found in high concentrations in Roundup Ready soybean meal and corn, distillers meal, fermentation feed products, pig stomach contents, and pig and cattle placentas.

Linked with Outbreaks of Plant Disease

The organism is prolific in plants infected with two pervasive diseases that are driving down yields and farmer income-sudden death syndrome (SDS) in soy, and Goss' wilt in corn. The pathogen is also found in the fungal causative agent of SDS (*Fusarium solani* fsp glycines).

Implicated in Animal Reproductive Failure

Laboratory tests have confirmed the presence of this organism in a wide variety of livestock that have experienced spontaneous abortions and infertility. Preliminary results from ongoing research have also been able to reproduce abortions in a clinical setting.

The pathogen may explain the escalating frequency of infertility and spontaneous abortions over the past few years in US cattle, dairy, swine, and horse operations. These include recent reports of infertility rates in dairy heifers of over 20%, and spontaneous abortions in cattle as high as 45%.

For example, 450 of 1,000 pregnant heifers fed wheatlege experienced spontaneous abortions. Over the same period, another 1,000 heifers from the same herd that were raised on hay had no abortions. High concentrations of the pathogen were confirmed on the wheatlege, which likely had been under weed management using glyphosate.

Recommendations

In summary, because of the high titer of this new animal pathogen in Roundup Ready crops, and its association with plant and animal diseases that are reaching epidemic proportions, we request USDA's participation in a multi-agency investigation, and an immediate moratorium on the deregulation of RR crops until the causal/predisposing relationship with glyphosate and/or RR plants can be ruled out as a threat to crop and animal production and human health.

It is urgent to examine whether the side-effects of glyphosate use may have facilitated the growth of this pathogen, or allowed it to cause greater harm to weakened plant and animal hosts. It is well-documented that glyphosate promotes soil pathogens and is already implicated with the increase of more than 40 plant diseases; it dismantles plant defenses by chelating vital nutrients; and it reduces the bioavailability of nutrients in feed, which in turn can cause animal disorders. To properly evaluate these factors, we request access to the relevant USDA data.

I have studied plant pathogens for more than 50 years. We are now seeing an unprecedented trend of increasing plant and animal diseases and disorders. This pathogen may be instrumental to understanding and solving this problem. It deserves immediate attention with significant resources to avoid a general collapse of our critical agricultural infrastructure.

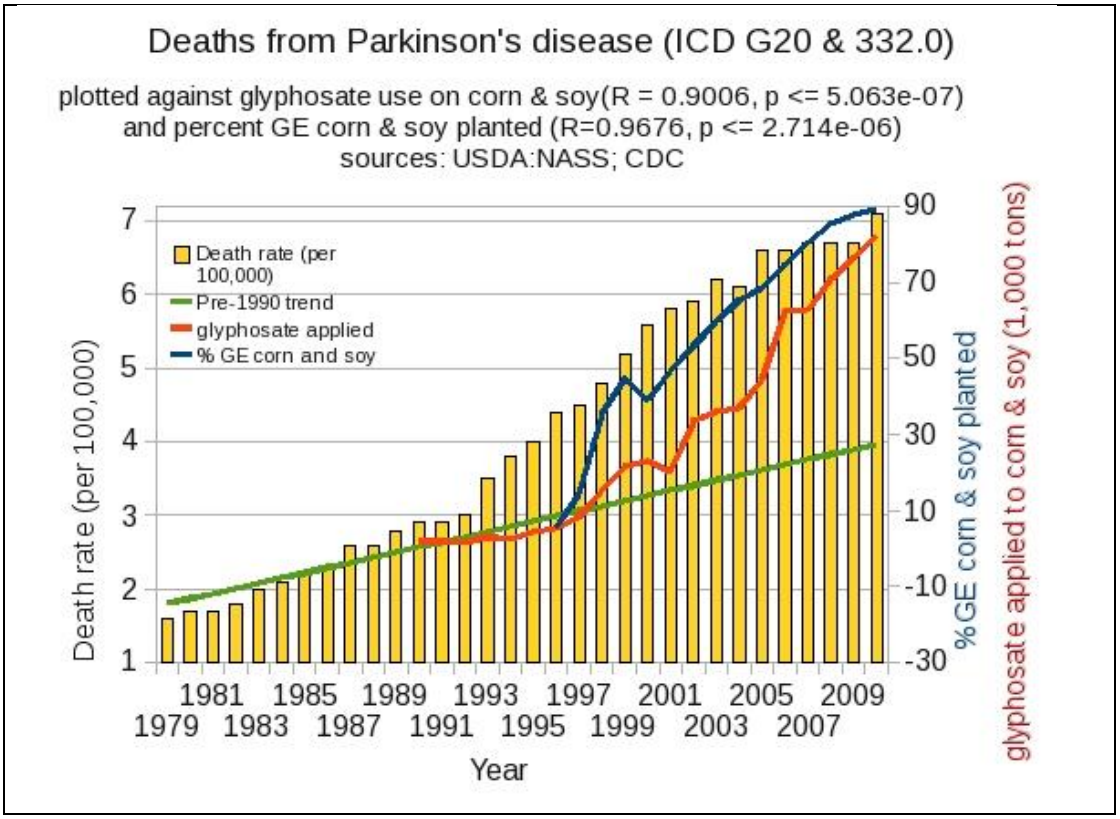
Sincerely,

COL (Ret.) Don M. Huber
Emeritus Professor, Purdue University

Despite this letter, Vilsack announced his decision to authorize unrestricted commercial planting of GM alfalfa

China puts the spotlight on glyphosate and GMO

Part of our global network has included Chen I-wan, an English-speaking Adviser to the Chinese Government (who has translated our documents from English into Chinese) and Prof Gu Xiulin at Yunnan University of Finance and Economics, and author of *GM War: China s food security in the 21st century* (in Chinese). A GMO safety symposium has been organised for July 25 - 29 2014 in Beijing. Chen I-wan wrote on March 3 2014: "*China is the largest importer of RR soybeans from USA, Argentine and Brazil; some reports say China imports about 50% of total RR soybean. The American Soybean Association confirmed to us that China imports about 30-35% of USA's RR soybean production… Most if not all those diseases rapidly increasing during the past 10 years in USA with close correlation with glyphosate have also rapidly increased in China* (in particular Parkinson's Disease and severe depression) *with close correlation with imports of RR soybeans*".



On December 6 2013 Chen I-wan went to Los Angeles with Mr. Cui (a well-known film star and activist) to make a documentary of interviews on film in the USA. "*We will try to put a documentary film together before the People's Conference in early March*."

TIANJIN, March 24 2014 China's Tianjin municipality has returned a batch of corn shipment tainted with a genetically-modified (GM) strain not approved by the country's agriculture ministry, the local quality watchdog said. [24] "*The 21,800-tonne shipment from the United States was to be used as animal feed but was found to contain the unapproved MIR162, a strain of insect-resistent transgenic corn"* said an official with the Binhai branch under Tianjin Entry-Exit Inspection and Quarantine Bureau. China found the first batch of MIR162 tainted corn shipment last October in Shenzhen in south China's Guangdong Province, and detected several other batches at the country's ports. This was the first case in Tianjin.

The whole GM industry is based on flawed science and misconceptions

- **ERROR 1** GM Scientists and Regulators make repeated claims that: *Glyphosate is not poisonous to mammals- it inhibits EPSP (5-enolpyruvylshikimate-3 phosphate) synthase an enzyme that mammals lack because we obtain aromatic amino acids in our diet."* Prof Jonathan Jones, GMO researcher and Head of the Sainsbury Laboratory made that claim in an email in 2011. This misconception was repeated in the press release by the German Federal Institute of Risk Assessment (BfR) [25] Symposium on reassessment of the health effects of glyphosate-containing pesticides. Professor Dr Dr Andreas Hensel said on behalf of BfR: *These new studies do not suggest that glyphosate has carcinogenic or embryo-damaging properties or that it is*

[24] http://english.people.com.cn/90883/8577023.html

[25] http://www.bfr.bund.de/en/press_information/2014/03/glyphosate__no_more_poisonous_than_previously_assumed__although_a_critical_view_should_be_taken_of_certain_co_formulants-188898.html

toxic to reproduction in test animals. The data do not warrant any significant changes in the limit values of the active ingredient.
Worldwide, glyphosate is one of the most common active ingredients in pesticides used to prevent unwanted plant growth in plant cultivation or to accelerate the ripening process of crops (desiccation). Glyphosate inhibits an enzyme which is essential for the biosynthesis of certain amino acids. This enzyme is not found in animals and humans.

- **REPLY 1 This is totally wrong**. Humans and animals have exactly the same pathway as in plants; they can only absorb nutrition via the bacteria in their gut; the gut microbiome. **The gut microbiome is the collective genome of organisms inhabiting our body.** Glyphosate residues in food disrupt the pathway which involves 5-enolpyruvylshikimate-3-phosphate synthase. Beneficial bacteria are destroyed, causing inflammatory changes in the gut lining, destroying its absorptive capacity in humans and animals, chelating minerals, depleting micronutrients and interfering with multiple metabolic processes resulting in obesity, type 2 diabetes, autism, dementia, cancers, inflammatory bowel diseases (Ulcerative Colitis and Crohn's disease), celiac disease, hypercholesterolaemia and many other disorders associated with those on a Western diet.[26]
  Chatelier, E.L. *et al.* Richness of human gut microbiome correlates with metabolic markers *Nature* 29 August 2013; 500: 541-550. [27]
  "*We are facing a global metabolic health crisis provoked by an obesity epidemic*." In a multi-author study of obese and non-obese individuals, those with "*low bacterial richness in the gut (23% of the population) are characterized by more marked overall adiposity, insulin resistance and dyslipidaemia and a more pronounced inflammatory phenotype when compared with those with high bacterial richness.*" "*Low richness of gut microbiota has been reported in patients with inflammatory bowel disorder*". "*Also notable diversity differences were observed between the urban US population and rural populations from two developing countries*". Current research is underway to try to find the links between obesity, type 2 diabetes and cancers. Diet rapidly and reproducibly alters the human gut microbiome[28] "*Long-term dietary intake influences the structure and activity of the trillions of microorganisms residing in the human gut*"*… In concert, these results demonstrate that the gut microbiome can rapidly respond to altered diet, potentially facilitating the diversity of human dietary lifestyles*.
  An obesity-associated gut microbiome with increased capacity for energy harvest[29]
  "The worldwide obesity epidemic is stimulating efforts to identify host and environmental factors that affect energy balance. Comparisons of the distal gut microbiota of genetically obese mice and their lean littermates, as well as those of obese and lean human volunteers have revealed that obesity is associated with changes in the relative abundance of the two dominant bacterial divisions, the Bacteroidetes and the Firmicutes."
- **ERROR 2** GM Scientists said that super-weeds do not occur; or that the problem of super-weeds has been exaggerated.
- **REPLY 2 This is totally wrong.** In the US, the first confirmed Glyphosate-Resistant weed, rigid ryegrass, was reported in 1998. Super-weeds in the US in GE cropping

[26] http://www.mdpi.com/1099-4300/15/4/1416
[27] http://www.nature.com/nature/journal/v500/n7464/abs/nature12506.html
[28] http://www.nature.com/nature/journal/vaop/ncurrent/full/nature12820.html
[29] http://www.ncbi.nlm.nih.gov/pubmed/23571517

systems are now a massive problem.[30] A press release from Dow in January 2014 urges the USDA to authorise their new GM corn and soy tolerant to a combination of 2,4-D (part of the Agent Orange defoliant) and glyphosate.[31] "*New data from November of 2013 indicate an astonishing 86 percent of corn, soybean and cotton growers in the South have herbicide-resistant or hard-to-control weeds on their farms. The number of farmers impacted by tough weeds in the Midwest has climbed as well, and now tops 61 percent. Growers need new tools now to address this challenge."*

Increasing glyphosate application rates and/or the number of applications will usually buy a little time, but invariably accelerates the emergence of full-blown resistance. This is the classic definition, and regrettable outcome, of what scientists call the "pesticide treadmill." Below, we present case studies of three particularly troubling GR weeds: pigweed, horseweed and giant ragweed. GR Palmer amaranth infestations can trigger abandonment of cropland. Some 10,000 acres of cotton in Georgia in 2007 were abandoned because of the presence of GR Palmer amaranth,[32] 20 examples of farm fields pushed over the "cliff" by resistant weeds.

In fact, one mechanism for weed resistance has already been identified

Two articles appeared in the same issue of PNAS. In a commentary on the second, Bowles stated:[33] *"Now an important new resistance mechanism is evident in glyphosate resistant populations of the particularly damaging weed species, Amaranthus palmeri. This weed infests large areas of US crop land, can devastate crop yield, and, together with some other Amaranthus species, must be controlled to ensure productivity of global crops. The report by Gaines et al. in this issue of PNAS, documents that this weed species has shown yet another evolutionary tool, gene amplification, to resist an herbicide. Although gene amplification is a well-characterized phenomenon in plant evolution, here we see this response evolving in plants under anthropogenic selection pressures."*

Insecticides and super-pests

In a similar manner, target pests have become resistant to insecticides **and** Bt toxins. Bt-resistant rootworms are now plaguing Minnesota, Iowa and Illinois. This year's severe drought has just made the problem worse. Bruce Potter, an entomologist, said at a workshop in Minnesota: *"In fields with a rootworm problem, the bug damages the cornstalk's ability to absorb water just when it is needed most. With the roots weakened, the plants can also be vulnerable to wind.*" A review published recently reveals that resistance has evolved in five of 13 key pest species, three against Bt maize and two against Bt cotton. In 2006, just one species was resistant.[34] In India, pests are becoming resistant to GM cotton. India now has a pink boll worm resistant to Bolgard I.[35] "*Monsanto introduced Bolgard II in 2006 and is now readying with an insecticide—Round Up Ready Flex (RRF), selectively used for Bt cotton and*

[30] http://www.enveurope.com/content/24/1/24

[31] http://newsroom.dowagro.com/press-release/dow-agrosciences-statement-about-usda-announcement-regarding-draft-environmental-impac

[32] http://www.pnas.org/content/107/3/1029.abstract?ijkey=e2066eddc44aa8e0f054b2e1ccb0fdcc5a6b000c&keytype2=tf_ipsecsha Gene amplification confers glyphosate resistance in *Amaranthus palmeri*

[33] http://www.pnas.org/content/107/3/955.full Accompanying article by Gene amplification delivers glyphosate-resistant weed evolution by Stephen B. Powles.

[34] http://www.newscientist.com/article/dn23688-superpests-are-fighting-back-against-killer-crops.html

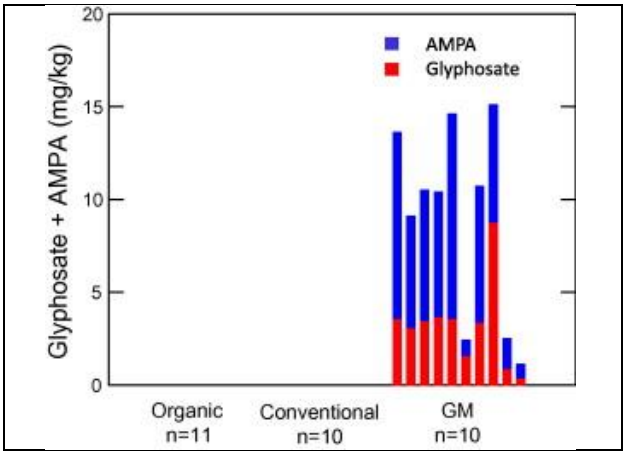
[35] http://newindianexpress.com/opinion/Failure-of-Monsanto-Bt-Cotton/2013/12/06/article1930013.ece

Bollgard III. Monsanto Corporation is laying the foundation to tie the Indian farmer permanently to its seed and insecticide. And, its strategy is to completely eliminate all native cotton varieties in future, perhaps, 10-15 years from now." Wang in 2008 showed *that Nilaparvata lugens* (the brown planthopper, a pest on rice) was able to develop 1424-fold resistance to imidacloprid in the laboratory after the insect was selected with imidacloprid for 26 generations.[36] Gao *et al.* 2012[37] reported similar problems with western flower thrips: "*insecticide resistance continues to be one of the most important issues facing agricultural production.*"

- **ERROR 3** GM Scientists said that GM would reduce the amounts of pesticide used.
- **REPLY 3 This is totally wrong.** The Total Herbicide Volume applied to Corn, Cotton and Soybeans (millions of pounds per year) went from 240,474,000 in 1995 to 309,954,000 in 2009. (Source:USDA.NASS. Quickstats).[38]
- **ERROR 4 '**GM foods are substantially equivalent to Non GM foods'. US Federal Drug Administration (FDA) is responsible for regulating the safety of GM crops that are eaten by humans or animals. According to a policy established in 1992, FDA considers most GM crops as "substantially equivalent" to non-GM crops.[39] In such cases, GM crops are designated as "Generally Recognized as Safe" under the Federal Food, Drug, and Cosmetic Act (FFDCA) and do not require pre-market approval.
- **REPLY 4 This is totally wrong.** A new study from Norway finds that GM soya is not 'substantially equivalent' to non-GM.[40] It describes the nutrient and elemental composition, including residues of herbicides and pesticides, of 31 soybean batches from Iowa, USA.
  Prof Thomas Bøhn *et al.* found:
  - Glyphosate tolerant GM soybeans contain high residues of glyphosate and aminomethylphosphonic acid (AMPA) (mean 3.3 and 5.7 mg/kg, respectively).
  - Soybeans from different agricultural practices differ in nutritional quality.
  - Organic soybeans showed a more healthy nutritional profile than other soybeans; more sugars, protein, and zinc. Organic soybeans also contained less total saturated fat and total omega-6 fatty acids than both conventional and GM-soy.

  "*Using 35 different nutritional and elemental variables to characterise each soy sample, we were able to discriminate GM, conventional and organic soybeans without exception, demonstrating substantial non-equivalence" in compositional characteristics for' ready-to-market' soybeans.*"

[36] http://www.researchgate.net/publication/23149216_Susceptibility_to_neonicotinoids_and_risk_of_resistance_development_in_the_brown_planthopper_Nilaparvata_lugens_(Stl)_(Homoptera_Delphacidae)
[37] http://www.ncbi.nlm.nih.gov/pubmed/22566175
[38] http://www.motherjones.com/tom-philpott/2014/01/usda-prepares-greenlight-chemical-war-weeds
[39] http://www.fas.org/biosecurity/education/dualuse-agriculture/2.-agricultural-biotechnology/us-regulation-of-genetically-engineered-crops.html
[40] http://www.sciencedirect.com/science/article/pii/S0308814613019201



From: Compositional differences in soybeans (Organic, Conventional and GM.) from Iowa, USA. By kind permission of Prof Thomas Bøhn, Genøk, Centre for Biosafety, Norway.

- **ERROR 5** Regulators state that Bt Proteins are not toxic to human cells.
- **REPLY 5** Cytotoxicity was demonstrated on human cells of Cry1Ab and Cry1Ac Bt insecticidal toxins alone, or with a glyphosate-based herbicide.[41]
- **ERROR 6** No GM protein survives intact in the intestinal tract to enter the blood stream.
- **REPLY 6** A Canadian Study found the pesticide toxin from GMO crops in 93 percent of maternal blood samples and 80 percent of fetal blood samples in women eating a typical Canadian diet.[42] Another study showed that Bt insecticidal toxins similar to those engineered into GM Bt crops were not broken down in digestion, as is claimed by the industry and regulators, but had toxic effects on the blood of mice.[43]
- **CLAIM 7** by Monsanto Glyphosate does not accumulate By: Dan Goldstein, Senior Science Fellow and Lead, Medical Sciences and Outreach, Monsanto on Friday, 12/20/2013 3:16 pm: "*It is a common misunderstanding that pesticides, in general, accumulate in body fat. While this phenomenon may occur with some older compounds and a very few compounds currently in use, pesticides that bioaccumulate to any significant degree have been removed from use or are highly restricted to specialized applications needs that limit environmental exposures. Glyphosate is structurally related to the amino acid (protein component) glycine and is readily soluble in water, as demonstrated by the fact that you can buy water-based formulations containing as much as 62% glyphosate salts in agricultural formulations. If ingested, glyphosate is excreted rapidly, does not accumulate in body fat or tissues, and does not undergo metabolism in humans. Rather, it is excreted unchanged in the urine (EU Review Report of the active substance glyphosate, 2002)* http://ec.europa.eu/food/plant/protection/evaluation/existactive/list1_glyphosate_en.pdf
- **REPLY 7** by Zen Honeycutt of the organisation Moms Across America: *"The levels found in the breast milk testing of 76 ug/l to 166 ug/l are 760 to 1600 times higher than the European Drinking Water Directive allows for individual pesticides.*[44] *They are however less than the 700 ug/l maximum contaminant level (MCL) for glyphosate*

[41] http://onlinelibrary.wiley.com/doi/10.1002/jat.2712/abstract
[42] http://www.ncbi.nlm.nih.gov/pubmed/21338670
[43] http://www.esciencecentral.org/journals/hematotoxicity-of-bacillus-thuringiensis-as-spore-crystal-strains-cry1aa-cry1ab-cry1ac-or-cry2aa-in-swiss-albino-mice-2329-8790.1000104.php?aid=11822
[44] http://www.momsacrossamerica.com/glyphosate_testing_results

in the U.S., which was decided upon by the U.S. Environmental Protection Agency (EPA) based on the now seemingly false premise that glyphosate was not bio-accumulative. The glyphosate testing (1) commissioned by Moms Across America and Sustainable Pulse also analyzed 35 urine samples and 21 drinking water samples from across the US and found levels in urine that were over 10 times higher than those found in a similar survey done in the EU by Friends of the Earth Europe in 2013."

Moms Across America had also commissioned a composition analysis of GM and non-GM corn from adjacent Midwest fields in the US. Note the high levels of formaldehyde in the GM…200ppm. Also the low levels of nitrogen, phosphorus, potassium, calcium, magnesium, sulphur, manganese, iron, zinc, copper, molybdenum, boron and cobalt; most importantly, the presence of glyphosate residues as noted by Bøhn *et al*. in their compositional study. This confirms on GM corn, Bøhn's findings on GM soya, as being not 'substantially equivalent' to non-GM.[45]

	Parts per million (ppm)	
Ingredient	**GM corn**	**Non-GM corn**
Glyphosate	13	0
Formaldehyde	200	0
Nitrogen	7	46
Phosphorus	3	44
Potassium	7	113
Calcium	14	6 130
Magnesium	2	113
Sulphur	3	42
Manganese	2	14
Iron	2	14
Zinc	2.3	14.3
Copper	2.6	16
Molybdenum	0.2	1.5
Boron	0.2	1.5
Selenium	0.6	0.3
Cobalt	0.2	1.5

The results of a comparison of GM and non-GM corn from adjacent Midwest fields in the US that first appeared on the Moms Across America March website are reproduced in the Table. [46]

- **CLAIM 8** by Bayer Experts about the elimination of imidacloprid. In 2001, in response to claims in a pesticide fact sheet, Bayer experts from different scientific fields issued a 'position paper' on imidacloprid. "*The use of imidacloprid in agriculture does not entail unacceptable harmful effects for the environment as the substance will disappear under all circumstances from the compartments soil, water and air." "Although the substance is stable in sterile water in the dark, it decomposes readily under the influence of light. Biotic processes under the influence of microbes*

[45] http://www.sciencedirect.com/science/article/pii/S0308814613019201
[46] http://www.i-sis.org.uk/Stunning_differences_of_GM_from_non_GM_corn.php

present in natural water and its sediments present another mechanism for the elimination of imidacloprid."

- **REPLY 8** No-one told the Bayer experts that microbes are invertebrates. They will be poisoned just as readily as the target organisms, non-target invertebrates (other pollinators) and the organisms that break down the soil, with disastrous effects on aquatic systems.[47] In fact, at the UK Parliamentary Environmental Audit Committee Enquiry into Insect Pollinators, Dr Julian Little of Bayer Crop Science was challenged about a study in the UK in which the imidacloprid levels plateaued i.e. in the lifetime of the study, it never completely disappeared.
- **COMPLAINT 9** We wrote to the European Commission about the illegality of authorisation of clothianidin. "*It was only recently, when we studied (EC) 1107/2009 more closely, that we found that clothianidin should never have been registered in the first place because it failed to fulfil the EU criteria for half-life in soil; this should be no greater than 120 days. (The US EPA conditional registration document for clothianidin in 2003 stated that the aerobic soil metabolism half-life under a variety of soil conditions was 148-1,155 days and the terrestrial field dissipation was 277-1,386 days.) The US EPA had excluded a figure at the top end, the extrapolated half-life of which was 6,931 days (2005). However, other EPAs have recorded soils in which there was no dissipation of clothianidin*."
- **REPLY 9** On 10 July we had a brief reply from Michael Flüh on behalf of the EC. Ref:Ares (2012) 826257. An observation on point 3 of Michael Flüh's reply from the European Commission was as follows: "*The allegation as regards the illegality of the registration of clothianidin is strongly rejected. The assessment of clothianidin, carried out by a Rapporteur Member State (RMS), and peer reviewed by experts from all Member States, concluded that safe uses for this substance exist. The assessment covered the persistence of the substance in soil as well as its toxicity and leaching potential*."
- **CLAIM 10 BY DEFRA, SYNGENTA, NFU and the BBKA** that pesticides have nothing to do with bee deaths; infection with the Varroa mite was the prime cause.
- **REPLY 10** Italy suspended neonicotinoid insecticides on maize for 3 years without problems. In Italy in September 2008 the Ministry of Health and the Ministry of Agriculture had decided to apply the precautionary principle and suspended on an annual basis the insecticides on maize treated seeds (*clothianidin, thiamethoxam, imidacloprid and fipronil*). According to a letter of 08/07/2011, sent by Dr Porrini and Professor Maini to the European Commission Enquiry into Bee Health: "*Winter beehive losses declined from 37.5% in 2007-2008 to around 15% in 2010-2011. No major ground-based pest attacks were observed even without using treated seed."*
  As a result, in a court in Turin, July 2011, Prosecutor Guariniello, who had conducted an investigation into the memory of bees, sent a warning to the managing directors of Bayer CropScience in Milan and Syngenta Crop Protection in Italy. They would be charged with the spreading of disease to animals (or plants) which pose a danger for the national economy.
  On 07/04/2014 a landmark study has revealed the UK is suffering one of the worst rates of honeybee colony deaths in Europe.[48] In the cold winter of 2012-13, 29% of honeybee colonies in the UK died, with only Belgium suffering a higher rate of losses

[47] http://www.abcbirds.org/abcprograms/policy/toxins/Neonic_FINAL.pdf
[48] http://www.theguardian.com/environment/2014/apr/07/britain-honey-bee-colony-deaths-worst-europe-study

(34%) of the 17 countries surveyed. By contrast, only 5% of colonies in Italy were lost.

Below is a picture of Venice where the Italians are rejecting GM as well. It was sent today by my colleague Dr Graciela Gomez, a lawyer from Argentina. In March 2012 she petitioned European Commissioner John Dalli to ban glyphosate and warned him of the dangers to human health (including neural tube defects e.g. spina bifida and meningo-myelocoele) which had affected farmers in the rural communities where GM Glyphosate-Resistant Soy Beans had been cultivated since 1996. She cited research from Carrasco, Bellé and Séralini. Her petition was ignored and the EU delayed the reassessment of glyphosate (which was due in 2012) until 2015.

Genetic Engineering is claimed to be a precision science

But there is plenty of evidence from independent scientists who disagree. Dr Mae-Wan Ho is Director and co-founder of the Institute of Science in Society (ISIS). It is an organisation which seeks to reclaim science for the public good and to promote social responsibility and ecological sustainability in science. She was winner of the 2014 prestigious Prigogine Medal[49] for her work in the physics of organisms and sustainable systems pioneered for more than 20 years. She wrote the following paper about artificial Genetic Modification.

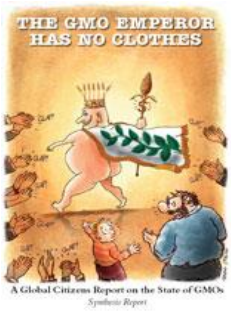
The New Genetics and Natural *versus* Artificial Genetic Modification[50]

Abstract: *The original rationale and impetus for artificial genetic modification was the "central dogma" of molecular biology that assumed DNA carries all the instructions for making an organism, which are transmitted via RNA to protein to biological function in linear causal chains. This is contrary to the reality of the "fluid genome" that has emerged since the mid-1970s. In order to survive, the organism needs to engage in natural genetic modification in real time, an exquisitely precise molecular dance of life with RNA and DNA responding to and participating in "downstream" biological functions. Artificial genetic modification, in contrast, is crude, imprecise, and interferes with the natural process. It drives natural systems towards maximum biosemiotic entropy as the perturbations are*

[49] http://www.i-sis.org.uk/ISIS_Director_Wins_Science_Award.php,
[50] http://www.mdpi.com/1099-4300/15/11/4748/pdf

propagated and amplified through the complex cascades of interactions between subsystems that are essential for health and longevity.

Genetic Engineering and Bt Toxins: The GMO Emperor has no clothes



"*We have been repeatedly told that genetically engineered (GE) crops will save the world by increasing yields and producing more food. They will save the world by controlling pests and weeds. They will save the world by reducing chemical use in agriculture. They will save the world with GE drought tolerant seeds and other seed traits that will provide resilience in times of climate change."*

All of these claims have been established as false over years of experience all across the world. The Global Citizens Report: "The Emperor Has No Clothes"[51] brings together evidence from the ground of Monsanto's and the industry's false promises and failed technology. *The fable that GMOs are feeding the world has already led to large-scale destruction of biodiversity and farmers' livelihoods. It is threatening the very basis of our freedom to know what we eat and to choose what we eat. Our biodiversity and our seed freedom are in peril. Our food freedom, food democracy and food sovereignty are at stake.*

No consensus on GM Crops: a statement by The European Network of Scientists for Social and Environmental Responsibility (ENSSER)[52]

There is no scientific consensus on the safety of genetically modified foods and crops, according to a statement released on 21/10/2013 by an international group of more than 90 scientists, academics and physicians. The statement comes in response to recent claims from the GM industry and some scientists, journalists, and commentators that there is a "*scientific consensus*" that GM foods and crops were generally found safe for human and animal health and the environment. The statement calls these claims "misleading", adding, "*This claimed consensus on GMO safety does not exist*."

"*Such claims may place human and environmental health at undue risk and create an atmosphere of complacency*," states Dr. Angelika Hilbeck, chairperson of ENSSER and one of the signatories. "*The statement draws attention to the diversity of opinion over GMOs in the scientific community and the often contradictory or inconclusive findings of studies on GMO safety. These include toxic effects on laboratory animals fed GM foods, increased pesticide use from GM crop cultivation, and the unexpected impacts of Bt insecticidal crops on beneficial and non-target organisms*," Dr Hilbeck continues.

This statement is released by ENSSER the week after the World Food Prize was awarded to employees of the GM seed giants Monsanto and Syngenta. This award has provoked outrage worldwide and stands in stark contrast to recent rulings in several countries restricting or banning the field release or commercialisation of certain GM crops. These include 9 countries in Europe and Mexico, but also developing countries like Bangladesh, Philippines, India, where an indefinite moratorium on field release trials was recommended by the Technical Expert Committee of the Supreme Court unless certain conditions are met, including proper safety testing. Furthermore, GMO approvals are under legal challenge in Argentina and Brazil due to questions over the scientific basis of approvals. Most if not all of them underline the lack of proof of safety and insufficient testing.

[51] http://www.navdanya.org/component/content/article/19-frontpage-content/118-the-gmo-emperor-has-no-clothes-a-global-citizens-report-on-the-state-of-gmos

[52] http://www.ensser.org/increasing-public-information/no-scientific-consensus-on-gmo-safety/

Prof C. Vyvyan Howard, a medically qualified toxicopathologist based at the University of Ulster and a signatory to the statement, said: "*A substantial number of studies suggest that GM crops and foods can be toxic or allergenic. It is often claimed that millions of Americans eat GM foods with no ill effects. But as the US has no GMO labeling and no epidemiological studies have been carried out, there is no way of knowing whether the rising rates of chronic diseases seen in that country have anything to do with GM food consumption or not. Therefore this claim has no scientific basis*."
The signatories to the statement call for the compliance to the precautionary approach to GM crops and foods internationally agreed upon in the Cartagena Protocol on Biosafety and UN's Codex Alimentarius. More than 230 scientists have now signed.[53] Dr Mae Wan Ho, who has studied molecular genetics for more than 30 years, is one of the signatories.

EFSA GMO Panel approved many GM crops on the grounds that they were safe for human health and the environment
This is despite the many papers that show that super weeds are massively destructive to the environment[54] and that over a period of 30 years there has been uncontrolled spread and contamination globally by many Genetically-Engineered (GE) plants which are herbicide resistant.[55]

International Life Sciences Institute (ILSI): Is it a private club for Corporations?
Harry Kuiper left as Chairman of the EFSA GMO Panel in 2012 because Corporate Europe Observatory, Christoph Then of Testbiotech, CRIIGEN and Earth Open Source had all complained about Conflicts of Interest in EFSA because of Kuiper's links with ILSI.
The current membership of ILSI Europe consists of 61 organisations.[56] This list represents Global Corporations (including the six Agrochemical Giants) with massive resources that are seeking to control the world's food supply. The Project Team Members consist of 18 members from around the world. Many of the individuals and organisations are names that are familiar from our 3 years of research. There are members from the US EPA and the USDA, from Dow and from the Japanese Mitsui Chemicals Agro. ILSI is an industry organisation based in Washington, DC, USA. It claims to be *"a non-profit, worldwide organization whose mission is to provide science that improves human health and well-being and safeguards the environment*" and allegedly has charity status.

Vice Chairman of GMO Panel found a snag; but the paper didn't appear on his CV
Jonathan Latham, PhD, Editor of *Independent Science News* wrote a Synopsis of the paper and, together with Allison Wilson published a pdf.[57]
Synopsis: *A scientific paper published in late 2012 shows that US and EU GMO regulators have for many years been inadvertently approving transgenic events containing an unsuspected viral gene. As a result, 54 different transgenic events commercialized internationally contain a substantial segment of the multifunctional Gene VI from Cauliflower Mosaic Virus (CaMV) within them. Among these are some of the most widely grown GMOs, including Roundup® Ready Soybean (40-3-2) and MON810 Maize. The oversight occurred because regulators failed to appreciate that Gene VI overlaps the commonly used CaMV 35S gene regulatory sequence.*

[53] http://www.ensser.org/fileadmin/user_upload/signatories_as_of_131210_lv.pdf
[54] http://www.enveurope.com/content/24/1/24
[55] http://www.testbiotech.org/sites/default/files/Testbiotech_Transgene_Escape.pdf
[56] http://www.ilsi.org/Europe/Pages/currentmembers.aspx
[57] http://www.independentsciencenews.org/commentaries/regulators-discover-a-hidden-viral-gene-in-commercial-gmo-crops/

The authors of the paper, working for the European Food Safety Authority, concluded that functions of Gene VI were potential sources of harmful consequences. They further concluded that, if expressed, the fragments of Gene VI are substantial enough for them to be functional (Podevin and du Jardin (2012) GM Crops and Food 3: 1-5).
This discovery has multiple ramifications for biotechnology. Foremost, there is the immediate question of GMO safety and whether the 54 events should be recalled, but secondly, the failure implicates regulators and the industry in a circle of mutual incompetence and complacency.
The discovery will also strengthen the argument for GMO labelling: if regulators and industry cannot protect the public then why should they not be allowed to protect themselves?

In Norway, on 24.01.2013 GenØk[58] published a similar assessment at the request of the Norwegian Directorate for Nature Management.[59]

Uncontrolled spread of GE crops: Report on the spread of GE Oil Seed Rape[60]
GE plants have been grown for 30 years and commercially for 20 years. The Report provides a global overview of the uncontrolled escape of GE oil seed rape (OSR) in various regions of the world (US, Canada, Japan, Australia, Switzerland and Germany). In Switzerland where no imports of GE OSR have been allowed since 2008: "*Transgenic OSR was able to survive along rail tracks for long periods because extensive glyphosate spraying of these areas offer them selective advantages*." In Japan: "*plants that proved to be resistant to glyphosate or glufosinate were found at ports and along transportation routes to industry plants where OSR is processed*."

Transgene Escape: Global atlas of uncontrolled spread of genetically engineered plants[61]
This report makes several recommendations. Most importantly, measures should be put in place immediately to stop any further uncontrolled spread of genetically engineered plants into the environment as far as possible. Comprehensive regulation should be established to strengthen the Precautionary Principle and the release of genetically engineered organisms should not be allowed if they cannot be retrieved.

The Innovation Principle should replace the Precautionary Principle
The European Environment Agency had published two Reports on the Precautionary Principle: Late lessons from Early Warnings in 2001[62] and 2013.[63]
However, many pesticide lobbyists in Europe are calling for the 'precautionary principle' to be abandoned and be replaced by the 'innovation principle' where risk-taking is acceptable (when it is for the benefit of businesses). Twelve of the largest corporations in Europe (the majority of which are Agrochemical Corporations) submitted an Open Letter to the President of the European Commission, Mr Jose Manuel Barroso, Mr Herman Van Rompuy, President of the European Council and Mr Martin Schulz, President of the European Parliament urging

[58] GenØk – Centre for Biosafety is a non-commercial foundation located in the research environment at the University of Tromsø and Forskningsparken (the Science Park). GenØks vision is safer use of biotechnologies.
[59] http://genok.com/arkiv/723/
[60] www.testbiotech.de/node/891
[61] http://www.testbiotech.org/sites/default/files/Testbiotech_Transgene_Escape.pdf
[62] http://www.eea.europa.eu/publications/environmental_issue_report_2001_22
[63] http://www.eea.europa.eu/publications/late-lessons-2

them to adopt an **"Innovation Principle"** to be taken into full consideration during policy and legislative processes in order to "*Stimulate Economic Recovery*"[64]

The recommendation of the Environmental Audit Committee on GMOs 30/04/2012[65]
The UK Environmental Audit Committee recommendation: *Unless and until there is both clear public and political acceptance of GM, it is proven to be both beneficial to the environment and to producers, and evidence that demand for these products is based on understanding by consumers and transparent product labeling, the Government should not license its commercial use in the UK nor promote its use overseas. The Government must ensure that the public and Parliament is well informed on this issue. It should establish an independent body to research, evaluate and report on the potential impacts on the environment of GM crops, and their impacts on farming and on the global food system. An initial focus of such research should be on the scope for, and risks of, the co-existence of GM crops with conventional and organic farming regime(n)s.*

The Government Response to the EAC[66]
The Government recognizes that GM technology could deliver benefits providing it is used responsibly, in particular as one of a range of tools to address the longer term challenges of global food security, climate change and the need for more sustainable agricultural production. The Government therefore supports farmers having access to developments in new technology, including GM, and being able to choose whether or not to adopt them. The Government takes a science-led approach to GM, and the protection of human health and the environment are our overriding priorities… We will only agree to the planting of GM crops, the release of other types of GM organism or the marketing of GM food or feed products if a robust risk assessment that has taken full account of the scientific evidence indicates that it is safe"… "The Government does not agree that a new independent body should be established to research, evaluate and report on the potential impacts on the environment of GM crops, and their impacts on farming and on the global food system. In 2010, the European Commission published a report entitled "A decade of EU-funded GMO research" which summarised the results of 50 research projects addressing primarily the safety of GMOs for the environment and for animal and human health… The Commission also concluded that there was no scientific evidence associating GMOs with higher risks for the environment or for food and feed safety than conventional plants and organisms."

Why is Owen Paterson so naïve? Doesn't he know that many countries are now banning GMs? So the biotech industry needs 'virgin' markets on which to dump their poisons
Just as the UK is trying to get GM crops in, many countries are enacting laws to ban GMs. In India, 250 Indian scientists have written to the Indian PM Manmohan Singh[67].and urged him to accept the Final Report submitted by the Supreme Court-appointed Technical Expert Committee (TEC) on modern-biotechnology regulation. The latest to pass laws to ban GMOs are two of the Hawaiian Islands, Kauai[68] and the Big Island.[69] Industry is trying to find new

[64] http://www.scienceindustries.ch/_file/13682/erf-communication-innovation-principle.pdf
[65] http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvaud/567/56704.htm
[66] http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvaud/567/56704.htm
[67] http://sustainablepulse.com/2013/11/20/indian-scientists-warn-pm-manmohan-singh-gm-crop-dangers/#.UqlpUPRdU64
[68] http://www.civilbeat.com/articles/2013/11/16/20426-kauais-gmo-and-pesticide-bill-is-set-to-become-law-after-veto-override/ Kauai on 16/11/2013
[69] http://www.huffingtonpost.com/2013/12/05/big-island-biotech-ban_n_4395521.html?ncid=edlinkusaolp00000003

markets. Other countries considering a ban include Russia and China. Even the USDA is having second thoughts.

USDA Report on GM Crops in 2014: the US finally displays some disenchantment[70]
Extract from Summary: "Despite the rapid increase in the adoption of corn, soybean, and cotton GE varieties by U.S. farmers, questions persist regarding their economic and environmental impacts, the evolution of weed resistance, and consumer acceptance."

How industry tried to remove scientists who found an inconvenient truth about GMs. Prof Gilles-Eric Séralini and colleagues at CRIIGEN in Caen had questioned the adequacy of Monsanto's testing both for glyphosate and GM crops[71]
"*The 90-day-long tests are insufficient to evaluate chronic toxicity, and the signs highlighted in the kidneys and livers could be the onset of chronic diseases. However, no minimal length for the tests is yet obligatory for any of the GMOs cultivated on a large scale, and this is socially unacceptable in terms of consumer health protection. We are suggesting that the studies should be improved and prolonged, as well as being made compulsory, and that the sexual hormones should be assessed too, and moreover, reproductive and multigenerational studies ought to be conducted too."*

Séralini's 2-year feeding study provoked chronic hormone and sex dependent pathologies in rats; males developed tumours at 4 months and females at 7 months[72]
"*The health effects of a Roundup®-tolerant genetically modified maize (from 11% in the diet), cultivated with or without Roundup® and Roundup® alone (from 0.1 ppb in water) were studied for 2 years in rats. In females, all treated groups died 2–3 times more than controls, and more rapidly. This difference was visible in 3 male groups fed GMOs. All results were hormone and sex dependent, and the pathological profiles were comparable. Females developed large mammary tumours almost always more often than and before controls, the pituitary was the second most disabled organ; the sex hormonal balance was modified by GMO and Roundup® treatments. In treated males, liver congestions and necrosis were 2.5–5.5 times higher. This pathology was confirmed by optic and transmission electron microscopy. Marked and severe kidney nephropathies were also generally 1.3–2.3 greater. Males presented 4 times more large palpable tumors (kidney) than controls which occurred up to 600 days earlier. Biochemistry data confirmed very significant kidney chronic deficiencies; for all treatments and both sexes, 76% of the altered parameters were kidney related. These results can be explained by the non- linear endocrine-disrupting effects of Roundup®, but also by the overexpression of the transgene in the GMO and its metabolic consequences."*
Authors' highlights:

- A Roundup®-tolerant maize and Roundup® provoked chronic hormone and sex dependent pathologies.
- Female mortality was 2–3 times increased mostly due to large mammary tumours and disabled pituitary.
- Males had liver congestions, necrosis, severe kidney nephropathies and large palpable tumours.

[70] www.ers.usda.gov/publications/err-economicresearch-report/err162.aspx
[71] Séralini, G-E. *et al*. Genetically modified crops safety assessments: present limits and possible improvements *Environmental Sciences Europe* 2011, 23:10 doi:10.1186/2190-4715-23-10.
[72] http://dx.doi.org/10.1016/j.fct.2012.08.005

- This may be due to an endocrine disruption linked to Roundup® and a new metabolism due to the transgene.
- GMOs and formulated pesticides must be evaluated by long term studies to measure toxic effects.

The following 12-minute You Tube video explains the whole 2-year experiment by Séralini's team in the CRIIGEN laboratory[73].

What Séralini's team discovered in rats is happening in humans

Rats in Séralini's study developed severe kidney nephropathies. Acute Kidney Injury (AKI) deaths in the US and the UK have risen since glyphosate was introduced

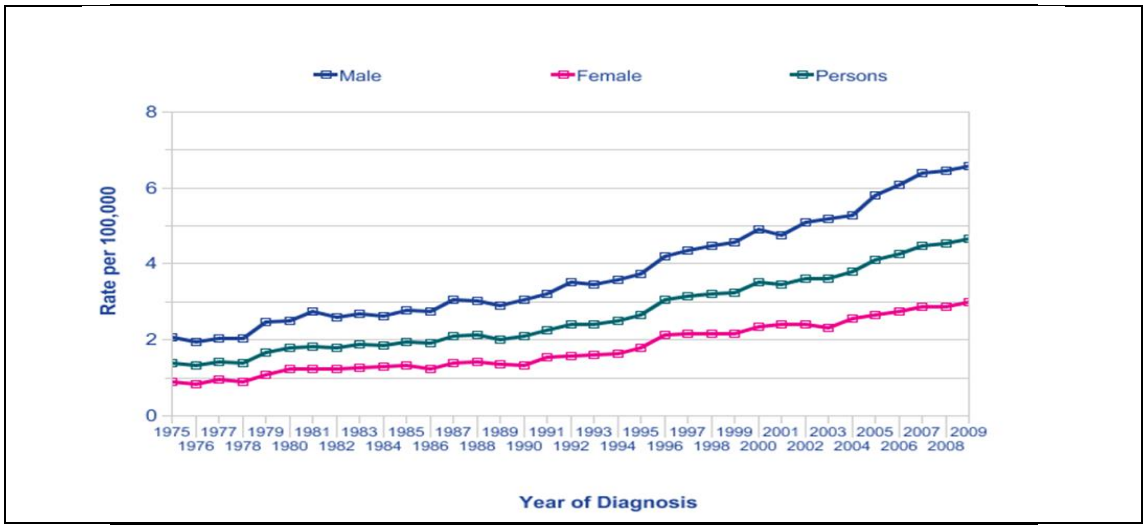
In the US there is a correlation between deaths from Acute Kidney Injury and glyphosate applied to corn and soy and %GE corn and soy planted. (See graph 1 page) ****

In the UK a new guideline report issued on 28/08/2013 from the National Institute for Health and Care Excellence (NICE) says AKI (a sudden loss of kidney function) costs the NHS between £434m and £620m a year – more than it spends on breast, lung and skin cancer combined.[74] The former national clinical director for kidney care said 32 people die needlessly every day from AKI. He said AKI represents a "*human tragedy."*

Rats in Séralini's study suffered liver damage, particularly in males. In the UK and the US incidence of Liver Cancers have increased, in the UK particularly in males

Cancer Research UK (CRUK) [75] "*In 2010, there were 4,241 new cases of liver cancer in the UK 2,672 (63%) in males and 1,569 (37%) in females, giving a male:female ratio of around 17:10. The crude incidence rate shows that there are 9 new liver cancer cases for every 100,000 males in the UK and 5 for every 100,000 females.*"

"Liver cancer incidence rates have increased overall for all of the broad age groups in Great Britain since the mid-1970s: European Age-Standardised incidence rates increasing by almost four times between 1975-1977 and 2008-2010."



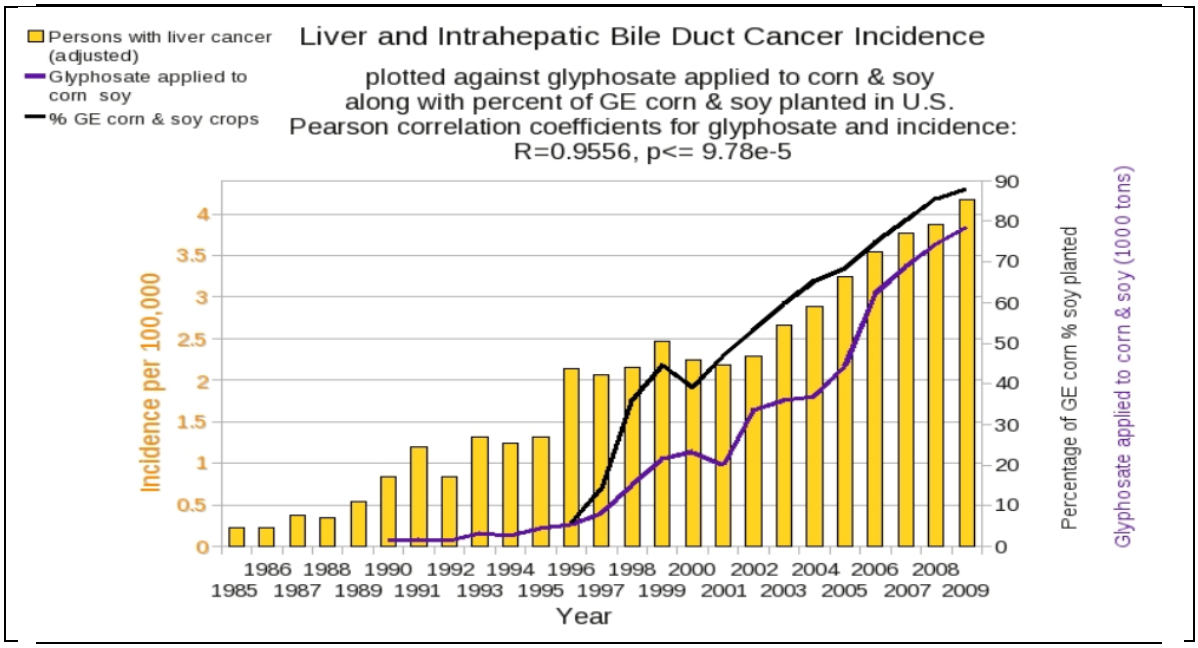
Graph 2 Cancer Research UK (CRUK) Liver Cancer: European Age-Standardised Incidence Rates per 100,000 male and females, Great Britain, 1975-2009[76]

[73] http://www.youtube.com/watch?v=Njd0RugGjAg&feature=player_embedded

3 http://www.theguardian.com/society/2013/aug/28/kidney-care-lives-nice

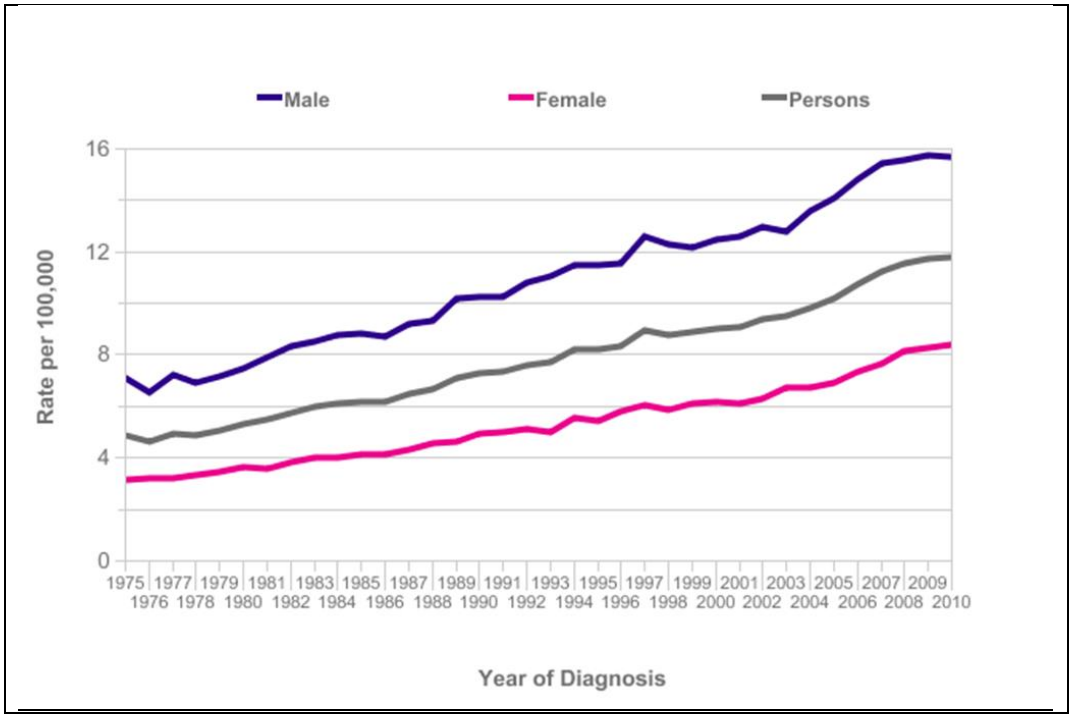
[75] http://www.cancerresearchuk.org/cancer-info/cancerstats/types/liver/incidence/#trends

[76] http://www.cancerresearchuk.org/cancer-info/cancerstats/types/liver/incidence/#trends



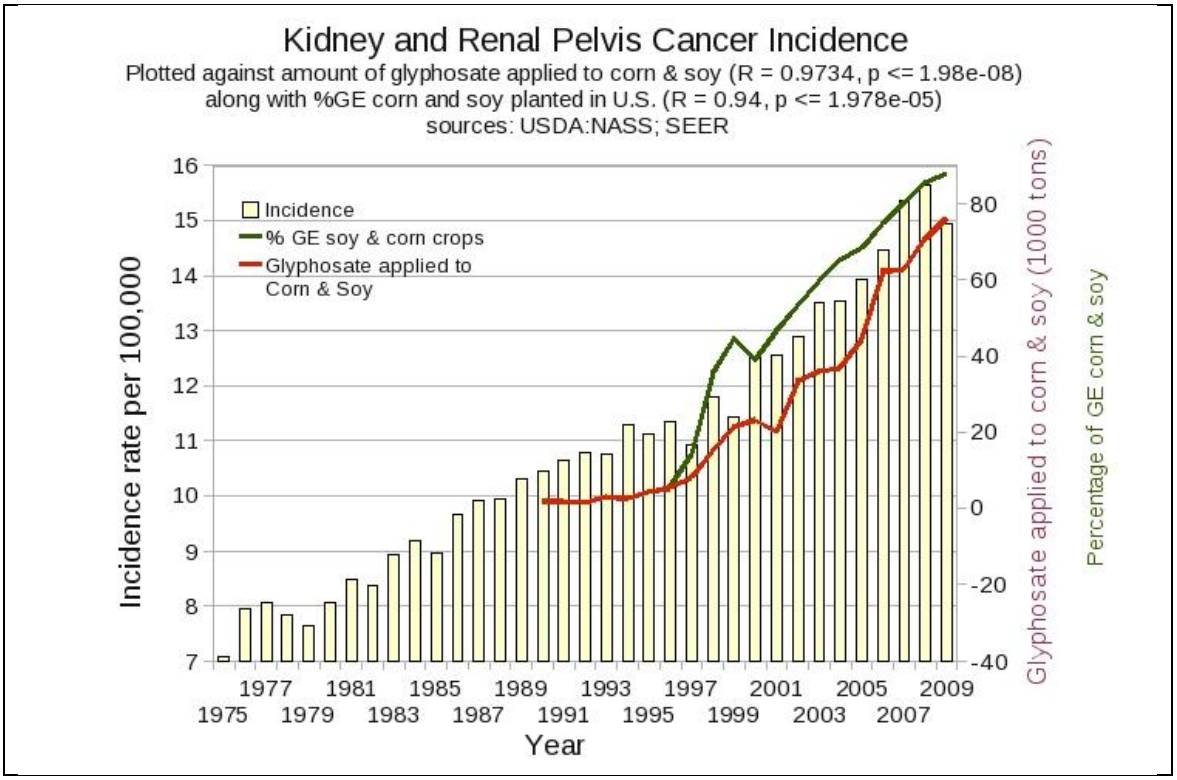
Graph 3 Persons with liver and bile duct cancer plotted against glyphosate applied to corn and soy and % GE corn & soy planted in the US By kind permission of Dr Nancy Swanson. Data from USDA and US CDC

Séralini's rats had tumours that were sex and hormone dependent. They started appearing at 4 months, one month after Monsanto's and EFSA's 90 day testing

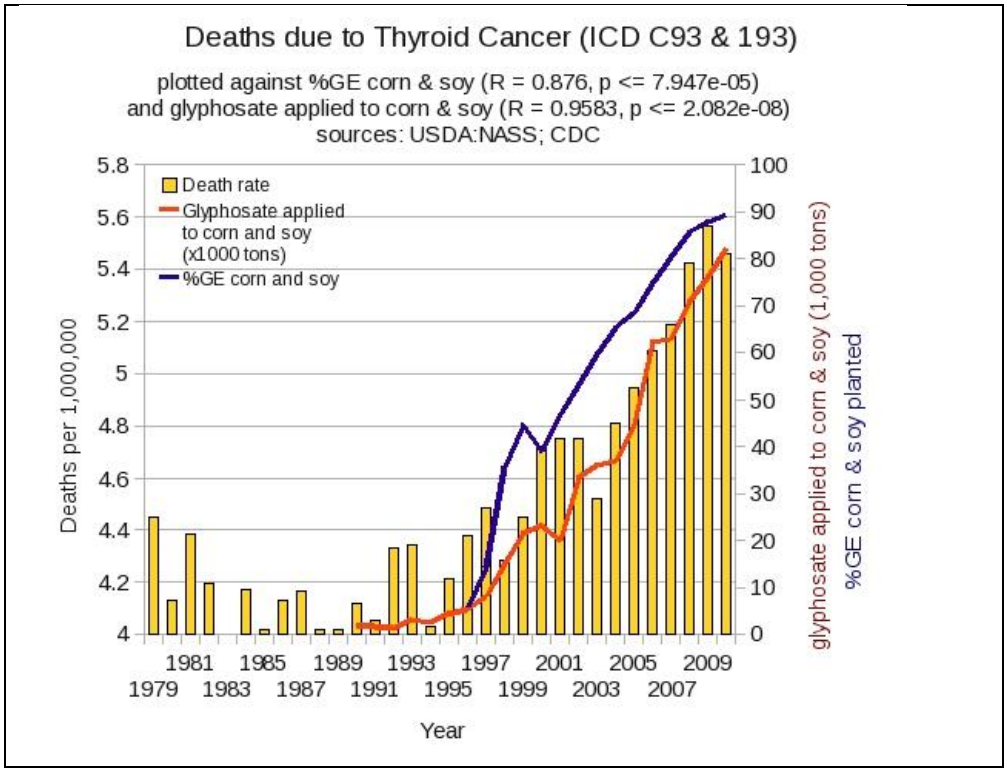


Graph 4 Cancer Research UK (CRUK) Kidney Cancer: European Age-Standardised Incidence Rates per 100,000, by sex, Great Britain, 1975-2010.[77]

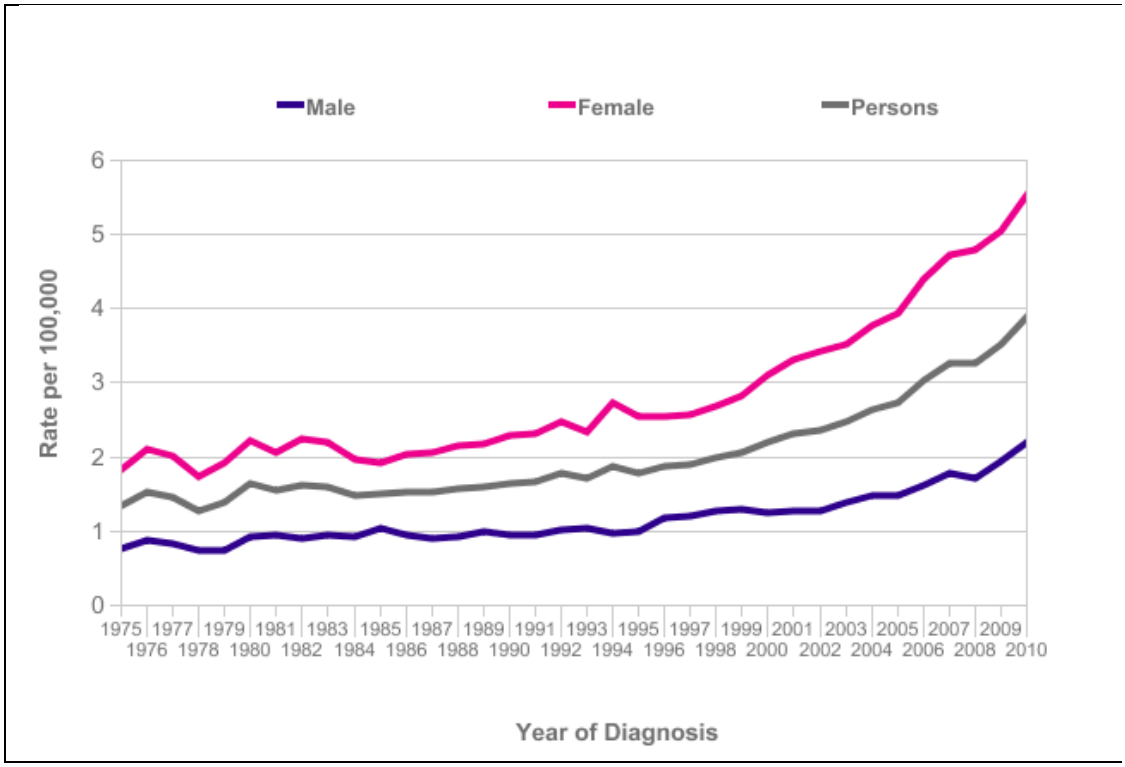
[77] http://www.cancerresearchuk.org/cancer-info/cancerstats/types/kidney/incidence/#trends



Graph 5 Incidence of Kidney and Renal Pelvis Cancer plotted against glyphosate applied to corn and soy and % GE corn & soy planted in the US By kind permission of Dr Nancy Swanson. Data from USDA and US CDC.



Graph 6 Deaths due to Thyroid Cancer plotted against glyphosate applied to corn and soy and % GE corn & soy planted in the US By kind permission of Dr Nancy Swanson. Data from USDA and US CDC.



Graph 7 Thyroid Cancer: Cancer Research UK (CRUK): European Age-Standardised Incidence Rates per 100,000, by sex, Great Britain, 1975-2010.[78]

What the global scientific community said about the retraction of Séralini's paper
Claire Robinson on behalf of GMWatch said: *Journal retraction of Séralini study is illicit, unscientific, and unethical.*[79] *It violates the guidelines for retractions in scientific publishing set out by the Committee on Publication Ethics (COPE), of which FCT is a member.*
COPE guidelines state that the only grounds for a journal to retract a paper are:

- *Clear evidence that the findings are unreliable due to misconduct (e.g. data fabrication) or honest error*
- *Plagiarism or redundant publication*
- *Unethical research.*

Prof Séralini's paper does not meet any of these criteria and Hayes admits as much. In his letter informing Prof Séralini of his decision.[80] *Hayes concedes that an examination of Prof Séralini's raw data showed "no evidence of fraud or intentional misrepresentation of the data" and nothing "incorrect" about the data.*
Hayes states that the retraction is solely based on the "inconclusive" nature of the findings on tumours and mortality, given the relatively low number of rats used and the choice of rat strain, which Hayes says naturally has a "high incidence of tumours".
"Crucially, however, inconclusiveness of findings is not a valid ground for retraction. Numerous published scientific papers contain inconclusive findings, which are often mixed in with findings that can be presented with more certainty. It is for future researchers to build on the findings and refine scientific understanding of any uncertainties".

[78] http://www.cancerresearchuk.org/cancer-info/cancerstats/types/thyroid/incidence/#Trends
[79] http://www.gmwatch.org/index.php/news/archive/2013/15184
[80] http://www.prnewswire.co.uk/news-releases/elsevier-announces-article-retraction-from-journal-food-and-chemical-toxicology-233754961.html

European Network of Scientists for Social and Environmental Responsibility ENSSER[81]
"In short, the decision to retract Séralini's paper is a flagrant abuse of science and a blow to its credibility and independence. It is damaging for the reputation of both the journal Food and Chemical Toxicology and its publisher Elsevier. It will decrease public trust in science. And it will not succeed in eliminating critical independent science from public view and scrutiny. Such days and times are definitively over. Prof. Séralini's findings stand today more than before, as even this secret review found that there is nothing wrong with technicalities, conduct or transparency of the data – the foundations on which independent science rests. The conclusiveness of their data will be decided by future independent science, not by a secret circle of people."

Euronews[82] A new editor at the journal, Richard Goodman, is a biologist who formerly worked for Monsanto – the leading producer of GM foods.
"*If this magazine, which just hired a former Monsanto employee as an editor, withdraws this study, it'll mean it never existed. What we have tried to do, to try and carry out studies of the long-term effects of genetically-modified foods and pesticides on human health, will be permanently shut off*." said French MEP Corinne Lepage.
At the European level, GM crops are generally tested for no more than three months by the manufacturers who produce them. These studies are used to authorise the products.
Meanwhile, the European Commission has proposed authorising a new GM corn crop. The decision could be made early next year.

Séralini's responded to his critics twice and finally to the retraction
Twice in 2013, Séralini answered his critics[83,84].
Read Séralini's full response to the *Food and Chem. Tox* retraction.[85] Here is an abstract on double standards: *"A factual comparative analysis of the rat feeding trial by the Séralini's group and the Monsanto trials clearly reveals that if the Séralini experiments are considered to be insufficient to demonstrate harm, logically, it must be the same for those carried out by Monsanto to prove safety. Basically, all previous studies finding adverse effects of GE crops have been treated by regulators with the attitude: only those studies showing adverse effects receive a rigorous evaluation of their experimental and statistical methods, while those that claim proof of safety are taken at face value. All studies that reported no adverse effects were accepted as proof of safety regardless of these manifest (but deemed irrelevant) deficiencies of their methods.*

Séralini argues that: *"FCT should retract the Hammond et al. paper on Roundup® tolerant maize for all these reasons, published for Monsanto's authorization, or consider that each of these papers is part of the scientific debate."* [If Séralini's paper has to go, Hammond's, which formed part of Monsanto's submission for authorisation, should be retracted as well!]

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[81] http://www.ensser.org/democratising-science-decision-making/ensser-comments-on-the-retraction-of-the-seralini-et-al-2012-study/
[82] http://www.euronews.com/2013/11/28/french-researcher-claims-gm-food-lobbyists-pulled-study-from-journal/
[83] http://www.ncbi.nlm.nih.gov/pubmed/23146697
[84] http://www.sciencedirect.com/science/article/pii/S0278691512008149
Séralini, G.E., Mesnage, R., Defarge, N., Gress, S., Hennequin, D., Clair, E., Malatesta, M., Spiroux de Vendômois, J. (2013) Answers to critics: why there is a long term toxicity due to NK603 Roundup-tolerant genetically modified maize and to a Roundup herbicide. *Food and Chem. Tox*. 53:461-468
[85] http://gmwatch.org/index.php/news/archive/2013/15188-prof-seralini-responds-to-fct

In fact, the appointment of Richard Goodman as Associate Editor of JFCT had already been noted by Claire Robinson and Jonathan Latham PhD on May 2013. They wrote a scathing account of the strategies used by industry to prevent publication of complications of GM: The Goodman Affair: Monsanto targets the heart of Science[86]

Another inconvenient paper was retracted by Journal of Food and Chemical Toxicology
The Brazilian paper, like Prof Séralini's, had been peer-reviewed and published by FCT prior to Goodman's arrival. *After Goodman was installed, FCT withdrew a separate study by Brazilian researchers that also raised questions about GM crop safety. The study showed that Bt insecticidal toxins similar to those engineered into GM Bt crops were not broken down in digestion, as is claimed by the industry and regulators, but had toxic effects on the blood of mice. The Brazilian paper, like Prof Séralini's, had been peer-reviewed and published by FCT prior to Goodman's arrival. After Goodman's arrival, the paper was* ***withdrawn without explanation from FCT[87] – only to be immediately published in another journal.[88]*** See GMO Myths and Truths: A Report by Open Earth Source. [89]

Personal attacks on those who exposed the science of GM as being dangerous to human health
Dr Brian John of GM-Free Cymru wrote:[90] *"For more than a decade now, scientists working in the GM field have mounted vicious personal attacks (sometimes politically rather than scientifically motivated) upon serious scientists who have had the temerity to discover 'uncomfortable things about GM crops and foods.' This trend started with the vitriolic treatment meted out (with the Royal Society in the vanguard) on Arpad Pusztai and Stanley Ewen a decade ago, and continued with the crucifixion of Ignacio Chapela and David Quist, Angelika Hilbeck, Mae-wan Ho, Judy Carman, Gilles-Eric Séralini, Andrès Carrasco, Manuela Malatesta, Christian Velot, Irina Ermakova and many others."* These people have been severely punished by the Agrochemical Corporations, presumably as a warning to others.

Monsanto's persecution of Irina Yermakova: could the belligerent attitude towards President Putin by the US and Britain be explained, in part, by a wish to punish Russia for its rejection of GMO?
Just as Wikileaks showed that France was punished for its rejection of MON 810 maize by agents of Monsanto,[91] are the US and UK currently doing the same to Russia?
In December 2013, an association of Russian scientists called for a 10-year moratorium on the production of genetically modified organisms to give the country's specialists' time to study their effects on the human body. Irina Yermakova, director of the Higher Nervous

[86] http://www.independentsciencenews.org/science-media/the-goodman-affair-monsanto-targets-the-heart-of-science/
[87] Mezzomo BP et al (2012). WITHDRAWN: Effects of oral administration of Bacillus thuringiensis as spore-crystal strains Cry1Aa, Cry1Ab, Cry1Ac or Cry2Aa on hematologic and genotoxic endpoints of Swiss albino mice. Food Chem Toxicol. http://www.ncbi.nlm.nih.gov/pubmed/23146696
[88] Mezzomo BP et al. (2013). Hematotoxicity of Bacillus thuringiensis as spore-crystal strains Cry1Aa, Cry1Ab, Cry1Ac or Cry2Aa in Swiss albino mice. J Hematol Thromb Dis 1(1).
[89] http://earthopensource.org/files/pdfs/GMO_Myths_and_Truths/GMO_Myths_and_Truths_1.3b.pdf
[90] http://www.gmfreecymru.org/open_letters/Open_letter26Jan2011.html
[91] http://wikileaks.org/cable/2007/12/07PARIS4723.htm It appears that the site has been blocked in the US, so if you fail, please try http://www.bibliotecapleyades.net/ciencia/ciencia_monsanto81.htm

Activity and Neurophysiology Institute (PhD Biology) and Vice President of the National Association for Genetic Safety, or NAGS.said:[92]
"*The methods for generating GMOs are imperfect, so at this stage all GMOs are dangerous…The possible negative health impact of GMO products is related to the use of certain bacteria in their production, which can produce tumors in plants by directly transferring genetic material*" Yermakova told Interfax on Sunday. "*It has been proven that in those regions and countries where there are many products containing GMO there has been a surge in oncological diseases and diabetes*," she said, adding that ten years would give scientists time to plan experiments and potentially develop new research methods.
A state system for registering genetically modified organisms intended for use and products created with or containing such organisms was established by the Russian government in September this year and will go into force in July 2014. The order, signed by Prime Minister Dmitry Medvedev, delegated monitoring the effects of GMOs and products containing or created using GMOs to various state agencies, depending on the specific uses of the products.

On 27 March 2014 Voice of Russia reported: [93]
"*Russia has enough mechanisms to protect the market and citizens from genetically modified food, without violating its obligations to the WTO,*" Russian President Vladimir Putin said on Thursday. "*We must build our work so as it will not be contrary to our obligations within the WTO, but even with the circumstance taken into consideration, we nevertheless have lawful methods and instruments to protect the domestic market and citizens*," the president noted during the meeting with members of the council of the parliament's upper house. "*The market and citizens must be protected from poor-quality products and food, consequences of consumption of which are not fully studied yet*", he notes. "*We can, must and will do it*," Putin said, noting that the issue was discussed by the Security Council recently.
"*We must act carefully, not to the detriment of our obligations within the WTO, but it can be done*," the president repeated, noting scientific and laboratory research should be used. "*We will do it together with the public, specialists and deputies*," he said.
Putin with regret noted there was no control over GMO use. "*We cannot 100 percent say what a volume enters our market*," he said.
During the meeting, one of the senators noted the turnover of GMO seeds amounted to about $50 billion. The main holder of the right was the United States, he said. The senator asked the president to control it and noted that a draft law was submitted to ban import of such food into the country.

Tony Blair, Monsanto and the Royal Society combined to discredit Dr Arpad Pusztai when he found that rats fed GM potatoes had complications; his lab was closed down
This scandal involved Tony Blair, the US and the Royal Society.[94] There are many credible witnesses. On 10 August 1998 in a Granada '*World in Action*' broadcast[95] Dr Arpad Pusztai explained his research that showed that rats fed with genetically modified potatoes had suffered immune damage. He raised questions about the safety of GM food in the human diet on the basis of the study. The news flashed around the world. Professor Robert Orskov OBE who had worked at the Rowett Institute for 33 years was told that phone calls went from

[92] http://www.themoscowtimes.com/business/article/scientists-call-for-10-year-moratorium-on-dangerous-gmos/491687.html
[93] http://voiceofrussia.com/news/2014_03_27/Russia-to-protect-citizens-from-GMO-food-without-violating-its-WTO-obligations-Putin-4390/
[94] http://www.psrast.org/pusztblair.htm
[95] http://news.bbc.co.uk/1/hi/health/149882.stm

Monsanto, the American firm which produces 90% of the world's GM food, to Clinton and then to Blair. "*Clinton rang Blair and Blair rang James*" (Professor James, Director of the Rowett Institute). "*There is no doubt he was pushed by Blair to do something. It was damaging the relationship between the USA and the UK, because it was going to be a huge blow for Monsanto.*" Dr Pusztai lost his job and his Laboratory in the Rowett Institute was closed down.

Stuttgart Peace Prize for Dr Arpad Pusztai in 2009

Dr Arpad Pusztai and his wife Dr Susan Bardocz were awarded the Stuttgart Peace Prize in 2009.[96] "*The award is for their tireless advocacy for independent risk research. Both have made an essential contribution to a broader understanding of the dangers of genetic manipulation. The award also honours their courage and scientific integrity as well as their undaunted insistence on the public's right to know*."

In response to the letter of congratulation from Claire Robinson and Jonathan Matthews of GMWatch, Dr Pusztai sent an email reply on 10 August 2008.

"*Dear Claire and Jonathan,*

I thought that I should write to you on the 10th anniversary of my 150 seconds of TV "fame" and tell you what I think now. It is very appropriate to write to you because you have provided the most comprehensive service to inform people about the shenanigans of the GM biotechnology industry and its advocates.

On this anniversary I have to admit that, unfortunately, not much has changed since 1998. In one of the few sentences I said in my broadcast ten years ago, I asked for a credible GM testing protocol to be established that would be acceptable to the majority of scientists and to people in general. 10 years on we still haven't got one. Instead, in Europe we have an unelected EFSA GMO Panel with no clear responsibility to European consumers, which invariably underwrites the safety of whatever product the GM biotech industry is pushing onto us." *…….We must not underestimate the financial and political clout of the GM biotechnology industry. Most of our politicians are committed to the successful introduction of GM foods. We must therefore use all means at our disposal to show people the shallowness of these claims by the industry and the lack of credible science behind them, and then trust to people's good sense, just as in 1998, to see through the falseness of the claims for the safety of untested GM foods.*

Let's hope that on the 20th anniversary I shall not have to write another warning letter about the dangers of untested GM foods!

Best wishes to all
Arpad Pusztai"

Dr Richard E Goodman's account of how he got hired by JFCT[97]

"As far as I know, Monsanto did not pressure Elsevier to hire me. I was employed at Monsanto in Regulatory Sciences from 1997 until July 2004 and worked on the safety assessment of genetically engineered crops during that time and as researcher, and continue with similar work since then. My work includes evaluating GMOs and novel food ingredients developed by non-profit and for-profit entities.

[96] http://www.gmwatch.org/latest-listing/1-news-items/11801-pusztai-to-receive-stuttgart-peace-prize-
[97] http://www.bioportfolio.com/news/article/1740028/Why-did-Monsanto-pressure-Elsevier-to-hire-Monsanto-employee-Richard-Goodman.html

When the Séralini paper was published I was one of the primary critics of the editors of Elsevier for allowing this clearly deficient and sensationalistic paper to be published without apparent adequate peer review. I saw a number of deficiencies in the paper and wrote a critical letter to the editor (as did many scientists both within and outside of the biotech industry). The editorial staff of the journal, Food and Chemical Toxicology, knew that they did not have enough individual Managing and Associate Editors to cover the wide array of topics and the large number of manuscripts that they receive every year (more than 3,000 papers). The editor contacted me to inquire whether I was willing to become an Associate Editor to handle the review process for manuscripts related to biotechnology."
His *star* paper exonerated GM from causing harm: Richard E. Goodman and Afua O. Tetteh Suggested Improvements for the Allergenicity Assessment of Genetically Modified Plants Used in Foods *Curr. Allergy Asthma Rep*. 2011 August; 11(4): 317–324.[98]
Conclusions In our opinion, most current allergenicity assessment procedures for GM food crops are based on the best available science. There is no published evidence of allergic reactions to any GM protein or any adverse human health reactions associated with consumption of foods from GM crops during the past 14 years. Based on current evidence, consumers should feel confident that approved GM crops are as safe as traditional crops, and scientists should consider limiting studies to those that are predictive of food safety.
Disclosure: Dr Goodman has received grant support from and had travel/accommodations expenses covered or reimbursed by the US Environmental Protection Agency, the US Department of Agriculture Foreign Agricultural Service, BASF Plant Science, Bayer CropScience, Dow AgroSciences, Monsanto Co., Pioneer Hi-Bred International, and Syngenta Plant Protection and has received consulting fees/honoraria from Bayer CropScience, the Institute of Food Technologists, CropLife International, the Institute of Life Sciences, Cargill, and Pepsi Co. Dr. Tetteh has received grant support from the US Environmental Protection Agency.

Monsanto employed Total Intelligence Solutions to protect the Corporation's name[99]
Spooky Business: Corporate Espionage Against Nonprofit Organizations Published on 20/11/2013. Page 33 gives information about the biotech giant, Monsanto:
The following information came from Jeremy Scahill reported in the *Nation* magazine that the security firm "*Blackwater, through Total Intelligence, sought to become the 'intel arm' of Monsanto, offering to provide operatives to infiltrate activist groups organizing against the multinational biotech firm.*"[100] In recent years, Blackwater has twice been re-named: first as XE Services and again as Academi.[101] According to documents he obtained, Scahill reported in the *Nation* that: Through Total Intelligence and the Terrorism Research Center, Blackwater also did business with a range of multinational corporations. According to internal Total Intelligence communications, biotech giant Monsanto—the world's largest supplier of genetically modified seeds—hired the firm in 2008–09. The relationship between the two companies appears to have been solidified in January 2008 when Total Intelligence chair Cofer Black traveled to Zurich to meet with Kevin Wilson, Monsanto's security manager for global issues. After the meeting in Zurich, Black sent an e-mail to other Blackwater executives, including to [Blackwater owner and founder Erik] Prince and [coordinator of Blackwater's CIA business Enrique 'Ric'] Prado at their Blackwater e-mail addresses. Black wrote that Wilson "*understands that we can span collection from internet, to reach out, to*

[98] 10.1007/s11882-011-0195-6
[99] http://www.corporatepolicy.org/spookybusiness.pdf
[100] Jeremy Scahill, "Blackwater's Black Ops." *The Nation*, September 15, 2010.
[101] Academi has received $2.1 billion in federal contracts, including $1.5 billion with the State Department and $607 million with the Defense Department, according to USASpending.gov (accessed October 28, 2013).

boots on the ground on legit basis protecting the Monsanto [brand] name.... Ahead of the curve info and insight/heads up is what he is looking for." Black added that Total Intelligence "*would develop into acting as intel arm of Monsanto.*" Black also noted that Monsanto was concerned about animal rights activists and that they discussed how Blackwater "*could have our person(s) actually join [activist] group(s) legally*." Black wrote that initial payments to Total Intelligence would be paid out of Monsanto's "generous protection budget" but would eventually become a line item in the company's annual budget. He estimated the potential payments to Total Intelligence at between $100,000 and $500,000. According to documents, Monsanto paid Total Intelligence $127,000 in 2008 and $105,000 in 2009."
The techniques used in corporate espionage against non-profits are outlined on page 47.

"*Computer hacking**. There are many different techniques available to corporate spies who wish to hack a computer or a computer network. Some of the more obvious ones include vulnerability scanning (checking computers and networks for known security flaws), persistent software scanning implants and creation of custom malware, password cracking, phishing (obtaining passwords by posing as a trustworthy entity), Trojan horses (establishing a back door into a computer or network that can be exploited later and key loggers (recording of all keystrokes on a computer for later retrieval)*."
Further discussion about the Report by the Center for Corporate Policy Spooky Business by Dr Nafeez Ahmed (Executive Director of the Institute for Policy Research and Development) The War on Democracy: How corporations and spy agencies use 'security' to defend profiteering and crush activism.[102]

Was this the sort of event that Total Intelligence Solutions was required to organise?
On 7th August 2010 Professor Andrés Carrasco, lead embryologist at the University, Buenos Aires Medical School and the Argentinean National Research Council, came to give a talk about his research to community activists and residents gathered in La Leonesa. His research showed that glyphosate, an agrochemical used on genetically modified soy and rice in Argentina, causes birth defects in animal embryos at levels far below those frequently used in agricultural spraying. A delegation of public officials and residents from the nearby community of Resistencia also came to La Leonesa to hear the talk.[103] *"But it never took place. As the delegation walked towards the school where the talk was to be held, it was attacked by a violent mob of approximately 100 people. Three people were seriously injured. Carrasco and a colleague shut themselves in a car and were surrounded by people beating the vehicle for two hours. Witnesses believe that a local rice producer and officials had organised the attack to protect agribusiness interests. As the police seemed reluctant to intervene, Amnesty International[104] subsequently called for an investigation."*

The Amnesty International investigation established that: "*One person has since suffered from lower body paralysis after being hit on his spine, and another is undergoing neurological examinations after receiving blows to the head. The former provincial Sub-Secretary of Human Rights, Marcelo Salgado, was struck in the face and left unconscious. Dr*

[102] http://www.theguardian.com/environment/earth-insight/2013/nov/28/war-on-democracy-corporations-spy-profit-activism

[103] http://www.theecologist.org/blogs_and_comments/commentators/other_comments/686959/revealed_the_glyphosate_research_the_gm_soy_lobby_doesnt_want_you_to_read.html

[104] http://www.amnesty.org/en/library/asset/AMR13/005/2010/en/303e9ee6-9138-405f-97fc-ed58965b76d0/amr130052010en.html

Carrasco and his colleague shut themselves in a car, and were surrounded by people making violent threats and beating the car for two hours. Members of the community were injured and a journalist's camera equipment was damaged.

The 'expert' reaction to the withdrawal of the Séralini paper is posted at the Science Media Centre[105]

Prof Alan Boobis, Prof of Biochemical Pharmacology at Imperial College London.
"*However, there are instances where the conclusions of a paper significantly over-interpret the findings, as was the case here*." Comment: Prof Boobis is on the Editorial Board of Food and Chemical Toxicity. He has occupied many positions on the International Life Sciences Institute: "*which develops industry-friendly risk assessments for GM foods and chemical food contaminants and inserts them into government regulations.*[106]"
Prof Jonathan Jones, Project Leader at the Sainsbury Laboratory
"*Whatever one's opinion of the motivations of the authors, all must accept that the suggestion that glyphosate or GM maize can elevate cancer risk is not supported by the experimental data in this paper*." Comment: Prof Jonathan Jones and I have exchanged emails.[107] We have agreed to differ on the toxicity of glyphosate to humans.
Prof Dale Sanders, Director of the John Innes Centre said:
"Retracting a study that fails to meet accepted standards of reliability is particularly important given the controversy generated in Europe by GM crops."
Prof Cathie Martin, Group Leader at the John Innes Centre**,** said:
"*The major flaws in this paper make its retraction the right thing to do. The strain of rats used is highly susceptible to tumours after 18 months with or without GMOs in their diets. Keeping animals alive beyond their recommended lifespan means the results are inconclusive and also raises serious animal welfare concerns."*
Prof David Spiegelhalter, Winton Professor of the Public Understanding of Risk at the University of Cambridge, said:
"*It was clear from even a superficial reading that this paper was not fit for publication, and in this instance the peer review process did not work properly. But at least this has now been remedied and the journal has recognised that no conclusions can be drawn from this study, so I suppose it is better late than never. Sadly the withdrawal of this paper will not generate the publicity garnered by its initial publication*." Comment: Prof Spiegelhalter is a statistician, not an expert on GMs. His personal home page is voluminous.[108] It includes: "*I have acted as a paid statistical consultant to a variety of organisations, including the Healthcare Commission, World Anti-Doping Agency, Novartis, and GlaxoSmithKline (GSK)."* On 2nd July 2012, GSK pleaded guilty to criminal charges and agreed to a $3 billion settlement of the largest health-care fraud case in the U.S. and the largest payment by a drug company. The settlement is related to the company's illegal promotion of prescription drugs, its failure to report safety data, bribing doctors, and promoting medicines for uses for which they were not licensed.[109] GSK is now looking into claims that it hired 16 Iraqi government doctors and pharmacists to improperly boost its sales.[110] This was after Chief Executive Sir

[105] http://www.sciencemediacentre.org/expert-reaction-to-reports-of-a-request-for-gilles-eric-seralini-to-withdraw-his-paper-on-the-effects-of-gm-maize-on-rats/
[106] F.William Engdahl, author of Seeds of Destruction: The Hidden Agenda of Genetic Manipulation. http://rt.com/op-edge/monsanto-gmo-studies-reports-588/
[107] http://farmwars.info/?p=11789
[108] http://www.statslab.cam.ac.uk/Dept/People/Spiegelhalter/davids.html
[109] http://www.bloomberg.com/news/2012-07-02/glaxosmithkline-agrees-to-pay-3-billion-in-u-s-drug-settlement.html
[110] http://www.theguardian.com/business/2014/apr/07/glaxosmithkline-inquiry-over-bribery-allegations

Andrew Witty, who was paid £6.5m last year, had promised to root out corruption and said the company would stop paying doctors to promote drugs.

"Withdrawal of this paper will not generate the publicity garnered by its initial publication"

What publicity? In the UK there was virtually none. Prof Spiegelhalter's comment at the end clearly indicates that he knows little about the subject even though he is Winton Professor of the Public Understanding of Risk. This was how Laurence Woodward reported it.

UK media – a conspiracy of silence over GM health risks[111]

"*Last week saw the publication of the most important piece of research about the health risks of genetically engineered foods in recent years. It was widely covered in France and other EU countries; it was big news in the US where all the major media carried the story – over 10,000 articles appeared there during the week; and in the UK – monumental indifference. And as for the BBC, our national beacon of light, truth and integrity; a single fleeting mention on its website with only enough energy to feature the smokescreen put out by pro-GM lobbyists.*

France to act; UK stays silent The research on rats, carried out at the University of Caen in France, found that GM maize, GM maize sprayed with Roundup and Roundup itself causes tumours, multiple organ damage and premature death. According to Dr Michael Antoniou, molecular biologist at Kings College, London, 'This is the most thorough research ever published into the health effects of GM food crops and the herbicide Roundup on rats. It shows an extraordinary number of tumours developing earlier and more aggressively – particularly in female animals'. French government ministers are so concerned by the findings that they have asked its National Agency for Health Safety to investigate and say that if necessary will suspend imports of the GM maize.

So why have parts of the UK media ignored the story and others just shrugged it off? Is there a pro-GM media conspiracy; is this down to corruption, incompetence, culture or simple stupidity and laziness; or a mixture?"

Even the Russian authorities have announced a ban on imports of GM maize from the US and recently China[112] rejected 60,000 tons of US corn because the crops had been genetically modified in violation of regulations, Beijing's quality watchdog said.

From the mainstream press in the UK, only John Vidal, Environment Editor of the Guardian, put his head above the parapet on 24/09/2012.[113] He wrote: Study linking GM maize to cancer must be taken seriously by regulators Trial suggesting a GM maize strain causes cancer has attracted a torrent of abuse, but it cannot be swept under the carpet…*But barely had the paper surfaced than it was attracting heavyweight academic criticism. Commentators variously claimed the study to be "biased", "poorly performed", "bogus", "fraudulent", "sub-standard", "sloppy agenda-based science", "inadequate" and "unsatisfactory". Séralini was said to have "sought harm" for the rats, the experiment was dismissed as "inhumane" and the research group was called "partisan". France was 'outed' as 'the most anti-science country in anti-science Europe' and vociferous GM supporters such as Mark Lynas urged people to sign a petition demanding full disclosure of the data (only a 100 signed). But it was a triumph for the scientific and corporate establishment which has used similar tactics to crush other scientists like Arpad Pusztai of the Rowett Institute in Scotland, who was sacked (1999) after*

[111] http://www.nyrnaturalnews.com/campaigning/uk-media-a-conspiracy-of-silence-over-gm-health-risks/

[112] http://www.upi.com/Business_News/2013/11/29/China-rejects-60000-tons-of-genetically-modified-US-corn/UPI-62341385749613/

[113] http://www.theguardian.com/environment/2012/sep/28/study-gm-maize-cancer

his research suggested GM potatoes damaged the stomach lining and immune system of rats, and David Quist and Ignacio Chapela, who studied the flow of genes from illegally planted GM maize to Mexican wild maize."

What is the London Science Media Centre?

Colin Macilwain, a science policy writer from Edinburgh who has worked as a reporter and an editor from both sides of the Atlantic[114] wrote about plans to replicate Britain's Science Media Centre (SMC) in the United States, which he said was "*fraught with danger*."
To quote: *"The London SMC was set up because UK scientific leaders were upset that environmentalists had successfully fought the introduction of genetically modified food; they felt that the UK media were too susceptible to environmental scare stories about new technologies.*
Despite the fears of the SMC founders, the British press — led by the BBC, which treats the Confederation of British Industry with the deference the Vatican gets in Rome — is overwhelmingly conservative and pro-business in its outlook. It is quite unperturbed by the fact that SMC sponsors include AstraZeneca, BP, Coca-Cola, L'Oreal, Monsanto, Syngenta (as well as Nature Publishing Group) but not a single environmental non-governmental organization (NGO) or trade union. Fiona Fox, the SMC's director, says that the centre operates independently of its sponsors and points out that none (except its host, the Wellcome Trust) accounts individually for more than 5% of its income. She adds that no NGOs are involved because it was their public-relations skills that the founders of the SMC sought to match."
Macilwain goes on to say: *"But the perception that the environmental group Friends of the Earth constitutes a bigger threat to scientific truth-telling than some of the corporate names on the SMC's sponsorship list is not one the US media would accept.*
Some of those considering a US centre share these concerns. They think that their funding model will have to rely on charitable trusts, not companies or government agencies."

Séralini study validated by new EFSA guidelines on long-term GMO experiments

Comment by Claire Robinson of GMWatch and Earth Open Source, 31 July 2013
"European Food Safety Authority's guidelines on long-term GM feeding studies validate Prof Séralini's study, which found serious health effects from NK603 maize."

The European Food Safety Authority (EFSA) has issued guidelines for two-year whole food feeding studies to assess the risk of long-term toxicity from GM foods.[115]
"Upon request from the European Commission, the European Food Safety Authority prepared a scientific report that would aid the future establishment of protocols for chronic toxicity and/or carcinogenicity studies in rodents with whole food/feed. This scientific report provides a commentary on OECD TG 453 with considerations on its applicability to support the safety assessment of long term consumption of a given food with respect to its chronic toxicity or carcinogenicity potential. The decision to conduct chronic toxicity and/or carcinogenicity studies with whole food/feed should be taken on a case-by case basis. It should be based on the evaluation of all the available information on the whole food/feed resulting from compositional analyses and any other available nutritional and toxicological studies. The conduct of the study and its reporting should be in line with good laboratory practice standards. Preparation of appropriate test diets is a key element of the experiment with respect to characterisation of the starting material and of the diet, level of inclusion of

[114] go.nature.com/klnuna World View Nature 15th March 2012
[115] http://www.efsa.europa.eu/en/efsajournal/pub/3347.htm

whole food/feed, nutritional balance, processing and storage. Statistical considerations are discussed to assist in estimating the number of animals necessary to obtain a suitable sample size capable of detecting biologically relevant effects with a pre-specified power and significance level. A comprehensive set of endpoints as set out in the OECD TG 453 should be measured during and at the end of the study, as appropriate. The collection of data and reporting should ensure a thorough biological and statistical evaluation. Recommendations on the relevant issues to be considered when designing chronic toxicity and/or carcinogenicity studies in rodents with whole food/feed are provided throughout the report and summarised in the conclusions."

Wikileaks exposed information about US targeting the EU over GM crops[116]
When France made moves to ban Monsanto's GM Maize 810 in 2007, US embassy cable recommended drawing up a list of countries for retaliation over opposition to genetic modification.[117] Ambassador Craig Stapleton wrote on 14/12/2007: "*Country team Paris recommends that we calibrate a target retaliation list that causes some pain across the EU since this is a collective responsibility, but that also focuses in part on the worst culprits*. *The list should be measured rather than vicious and must be sustainable over the long term, since we should not expect an early victory. Moving to retaliation will make clear that the current path has real costs to EU interests and could help strengthen European pro-biotech voices*," said Stapleton, who with Bush co-owned the Dallas/Fort Worth-based Texas Rangers baseball team in the 1990s. The cables show that US diplomats were working directly for GM companies such as Monsanto. It is no wonder that the US and the UK governments were anxious about Wikileaks revelations and said that national security was being compromised.

Are we living in a democracy when the British Government ignores the wishes of the majority of the public about GM and teams up with Monsanto to sue civil society?
"Another survey has shown that only 21% of the UK public support genetically engineered food. Despite a massive pro-GM push by government, researchers and the media this latest poll carried out in June - confirms that UK citizens continue to reject the technology." [118]
23/09/2013 The British Government[119] joined forces with Monsanto, EFSA and the EU Commission to fight civil society in the EU Court to defend the right to import Monsanto's transgenic soybean Intacta® which produces an insecticide and is resistant to glyphosate herbicides such as Roundup®. In fact in Brazil court actions are piling up against Monsanto[120] for collecting royalties on RR1 soybeans regarded as illegal and for conditioning the sale of new GM seed Intacta RR2 to the signing of a contract seen as abusive.

Confirmation of the action: answer to a Written Question in the House of Lords
Monday 18 November 2013
Agriculture: Genetically Modified Crops
Question Asked by: **The Countess of Mar:**
To ask Her Majesty's Government which member of the Government is responsible for the United Kingdom's approach in the case before the Court of Justice of the European Union regarding the decision of the European Food Safety Authority to allow genetically-modified

[116] http://wikileaks.org/cable/2007/12/07PARIS4723.htm
[117] http://www.theguardian.com/world/2011/jan/03/wikileaks-us-eu-gm-crops/print
[118] http://www.gmeducation.org/government-and-corporations/p213501-uk-citizens-continue-to-reject-gmo-food-and-even-farmers-don-t-want-to-eat-it.html
[119] http://www.testbiotech.de/en/node/898
[120] http://sustainablepulse.com/2013/12/09/monsanto-faces-usd-1-billion-brazilian-farmer-lawsuit/#.UqlqP_RdU64

soya beans to be marketed by Monsanto in the European Union; and whether any organisations are contributing to Her Majesty's Government's legal costs in that case.[121]
The Parliamentary Under-Secretary of State, Department of Health **(Earl Howe) (Con):**
The United Kingdom has a strong interest in the science-based system underpinning genetically modified product applications and so has applied to intervene in this case, which concerns the authorisation of genetically modified food and feed. Any intervention will represent the view of the Government as a whole and the only likely external legal costs will be those from instructing counsel and costs of attending any hearing should that prove necessary.

Reassessment of glyphosate in the European Union in 2015

This was delayed from 2012 because embryologists in Buenos Aires had demonstrated in frog and chick embryos that glyphosate was at the basis of the congenital neural tube defects (e.g. spina bifida and meningo-myelocoele) which had been occurring in rural communities in Argentina after Monsanto imposed GM Roundup® Ready Soya in 1996. [122]

Dr Brian John of GM-Free Cymru has written to DAR_consultation@efsa.europa.eu to observe that ***the public consultation by EFSA is an exercise in public deterrence***. EFSA says that *comments are to be limited to the risk assessment in the assessment report* and *EFSA reserves the right to reject comments not relating to the risk assessment of the active substance*. **The assessment report cannot be seen by the general public** other than after *A duly-completed on-line request form needs to be submitted in order to receive an email providing access to the respective documentation*.

The Rapporteur Member State is Germany The Committee of the German Federal Institute of Risk Assessment (BfR) includes members from Bayer and BASF. Bayer makes glyphosate and BASF produces a chemical used in its manufacture.[123] In a press release in March 2014, BfR said that glyphosate was no more poisonous than previously assumed although a critical view should be taken of certain co-formulants. This was a rather curious announcement. This was on on the basis of evaluation of 150 new studies and an additional 900 studies from the scientific journals. Professor Dr Dr Andreas Hensel President of the Federal Institute of Risk Assessment (BfR) said on behalf of BfR: *These new studies do not suggest that glyphosate has carcinogenic or embryo-damaging properties or that it is toxic to reproduction* ***in test animals****. The data do not warrant any significant changes in the limit values of the active ingredient.* [124] There is nothing about toxicity to humans.
Previous independent scientists had assessed the tallowamine additives, whose purpose is to help the herbicide to penetrate the plant, as being very toxic to humans.[125] It appears that most industry studies on glyphosate have been conducted in Veterinary Laboratories. For example, to satisfy themselves about the lack of toxicity of these co-formulants, BfR

[121] http://www.publications.parliament.uk/pa/ld201314/ldhansrd/text/131118w0001.htm#wa_st_0
[122] http://www.researchgate.net/profile/Andres_Carrasco/publications/
[123] http://www.bfr.bund.de/en/members_of_bfr_committee_for_pesticides_and_their_residues-53534.html http://www.bfr.bund.de/en/members_of_bfr_committee_for_pesticides_and_their_residues-189322.html 2014
[124]

http://www.bfr.bund.de/en/press_information/2014/03/glyphosate__no_more_poisonous_than_previously_assumed__although_a_critical_view_should_be_taken_of_certain_co_formulants-188898.html
[125] This is presumably why EFSA said *comments are to be limited to the risk assessment in the assessment report.* (nothing about humans, only animals) *EFSA reserves the right to reject comments not relating to the risk assessment of the active substance* So they could reject studies on the toxicity of tallowamine additives

conducted a single veterinary study in ruminants which showed that there were no negative influences of the tallowamine additives on the microflora on the metabolism of the microbial population in the gastro-oesophageal vestibule.

Previous independent studies had been conducted on human cells. A further independent paper published in December 2013 showed that: "*Roundup® was by far the most toxic among the herbicides and insecticides tested. Most importantly, 8 formulations out of 9 were several hundred times more toxic than their active principle*.[126] However, the European Commission and European Crop Protection Association (ECPA) dismissed the paper. Frédéric Vincent, the spokesperson for Health and Consumer Affairs, stated that: "*the report did not provide any new information"* and that there was "*no reason for a 'crisis-intervention*." The ECPA - whose members include many of the world's largest pesticides manufacturers, including BASF Chemicals, Dow Agrosciences, Monsanto and Syngenta - said the new research paper was not up to sufficient standards of scientific enquiry to contribute to the literature on pesticide safety. "*The testing model used by the authors is inappropriate for drawing any conclusions regarding real life toxicity relevant to humans*."

Hundreds of chemicals to which bees, animals and humans are exposed

When the CRD Head of Regulatory Policy replied on 28/02/2014 to defend the authorisation of glyphosate, he told me that the capability to detect individual pesticides in food had increased from 150 in 2003 to 393 in 2012. He stated: "*In the 2012 Report, although there were a large number of residues found in bread, none of these were at a level to suggest a risk to consumer health.*" However, he failed to reply to my question as to why EFSA was regularly increasing the Maximum Residue Limits (MRLs) of glyphosate in foods at the request of Monsanto to accommodate their practice of desiccation of crops and to protect their imports into Europe. But each pesticide has been assessed individually; no-one has looked at the combined toxicity of multiple pesticides. In the US Jeff Pettis and colleagues found 37 different pesticides in honey[127] and Prof Dave Goulson studied one field in Sussex that in a single year was sprayed with various pesticides 22 times.[128] In Canada, two investigative organisations tested a range of teas and found that "*half of the teas tested contained pesticide residues above the allowable limits in Canada. And eight of the 10 brands tested contained multiple chemicals, with one brand containing residues of 22 different pesticides*." [129]

Japanese knotweed is a Glyphosate-Resistant Super Weed, yet each year millions of litres are sprayed on industrial waste areas, around Housing Estates, highways and even around schools and amenity areas where our children play (see **Glyphosate in South Wales:** p 45).

How "Extreme Levels" of Roundup® in Food Became the Industry Norm

Professor Thomas Bøhn and colleagues from GenØk – Centre for Biosafety, Tromsø, Norway, studied soybeans from the US and found major compositional differences between organic, conventional soy and GM Soy. Links to original paper[130] and commentary.[131]

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[126] http://www.hindawi.com/journals/bmri/aip/179691/

[127] http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0070182

[128] http://www.theecologist.org/blogs_and_comments/commentators/2258103/revealed_the_chemical_blitz_of_pesticides_in_our_fields.html

[129] http://www.cbc.ca/news/canada/pesticide-traces-in-some-tea-exceed-allowable-limits-1.2564624

[130] http://www.sciencedirect.com/science/article/pii/S0308814613019201

[131] http://www.independentsciencenews.org/news/how-extreme-levels-of-roundup-in-food-became-the-industry-norm/

Synopsis: Many GMO crops are resistant to the chemical herbicide Roundup (active ingredient: glyphosate). This allows farmers to spray the herbicide over the crop to control weeds. As weeds in the US and elsewhere have progressively gained resistance to Roundup, farmers have been spraying higher doses of the herbicide and spraying them more often. By implication, there will be concomitant effects on food and the environment. However, even though there is increasing concern about the health impacts of Roundup/glyphosate, little is known about current levels in food and animal feed. Now, a new study has found that glyphosate in GMO soybeans are at levels higher than many vitamins.

Conclusion

Roundup Ready GM-soy accumulates residues of glyphosate and AMPA, and also differs markedly in nutritional composition compared to soybeans from other agricultural practices. Organic soybean samples also showed a more healthy nutritional profile (e.g. higher in protein and lower in saturated fatty acids) than both industrial conventional and GM soybeans. Lack of data on pesticide residues in major crop plants is a serious gap of knowledge with potential consequences for human and animal health. How is the public to trust a risk assessment system that has overlooked the most obvious risk factor for herbicide tolerant GM crops, i.e. high residue levels of herbicides, for nearly 20 years? If it has been due to lack of understanding, it would be bad. If it is the result of the producer's power to influence the risk assessment system, it would be worse.

When humans ingest glyphosate residues occurring in staple foods, and in GM foods, they are continually having their beneficial bacteria destroyed

This was the basis of Samsel & Seneff's paper[132] which showed that Glyphosate's suppression of Cytochrome P450 enzymes and amino acid biosynthesis by the gut microbiome has led to a variety of conditions which globally are assuming epidemic proportions in those on a Western diet, including gastrointestinal disorders, obesity, depression, autism, infertility, cancer and Alzheimer's disease.

Samsel & Seneff's paper has some complicated metabolic concepts, so we have provided links to 3 videos. In the first Dr Stephanie Seneff is interviewed by Jeffrey M. Smith, the Executive Director of the Institute for Responsible Technology and bestselling author of *Genetic Roulette* and *Seeds of Deception.* The whole interview takes about an hour, but it has been also split up into shorter sections in which obesity, diabetes and autism are discussed separately.[133] The second interview, conducted by Zen Honeycutt[134] for the organisation Moms Across America, is in two parts. In Part 1 Anthony Samsel explains the implications of children eating GM foods with glyphosate residues: for example, impaired learning abilities, decreased IQ, autism, allergies and asthma. In Part 2[135] he explains the mechanisms of action of glyphosate in the causation of different diseases. There are 160 crops/fruit/vegetables containing glyphosate residues. Gut bacteria form a protective layer over our cell walls; glyphosate disruption causes a leaky gut resulting in inflammatory bowel diseases. Disrupted aromatase impairs immune function. Glyphosate allows toxins through the blood-brain barrier. It disrupts the Cytochrome P450 enzymes in the liver and kidney which provides the mechanism for detoxification of environmental toxins.

[132] http://www.mdpi.com/1099-4300/15/4/1416

[133] http://www.youtube.com/watch?v=h_AHLDXF5aw&feature=player_embedded
http://www.youtube.com/watch?v=3rIHhdYCUVw diabetes
http://www.youtube.com/watch?v=JB4GFyjewHQ obesity
http://www.youtube.com/watch?v=JB4GFyjewHQ autism

[134] http://www.momsacrossamerica.com/glyphosate_and_autism_asthma_copd_diabetes_and_more

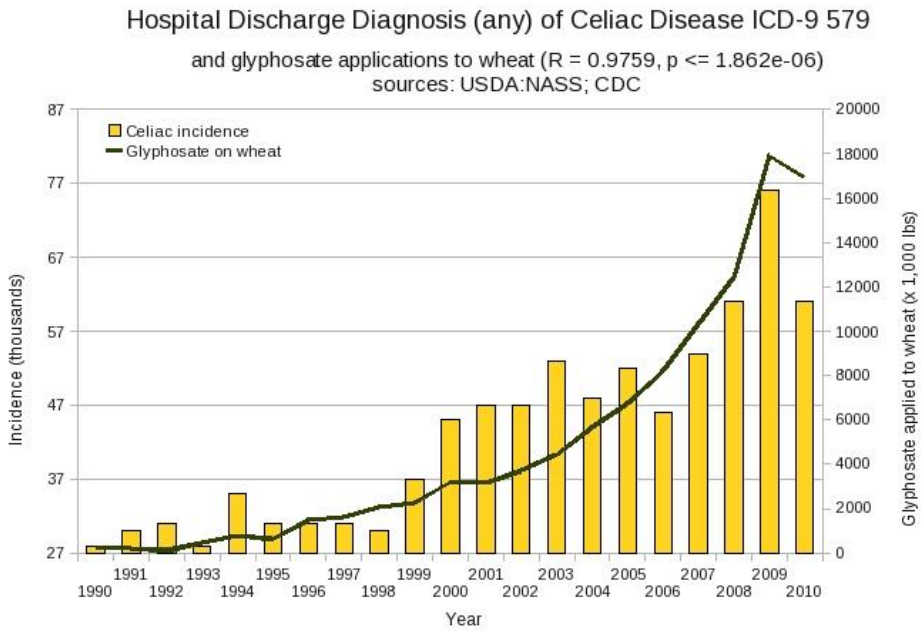
[135] http://www.youtube.com/watch?v=nVjntXhDrx8

We sent the HSE and CRD a further Review by Samsel and Seneff: Glyphosate, pathways to modern diseases II: Celiac sprue and gluten intolerance.[136]

Abstract: *"Celiac disease, and, more generally, gluten intolerance, is a growing problem worldwide, but especially in North America and Europe, where an estimated 5% of the population now suffers from it. Symptoms include nausea, diarrhea, skin rashes, macrocytic anemia and depression. It is a multifactorial disease associated with numerous nutritional deficiencies as well as reproductive issues and increased risk to thyroid disease, kidney failure and cancer. Here, we propose that glyphosate, the active ingredient in the herbicide, Roundup®, is the most important causal factor in this epidemic. Fish exposed to glyphosate develop digestive problems that are reminiscent of celiac disease. Celiac disease is associated with imbalances in gut bacteria that can be fully explained by the known effects of glyphosate on gut bacteria.*

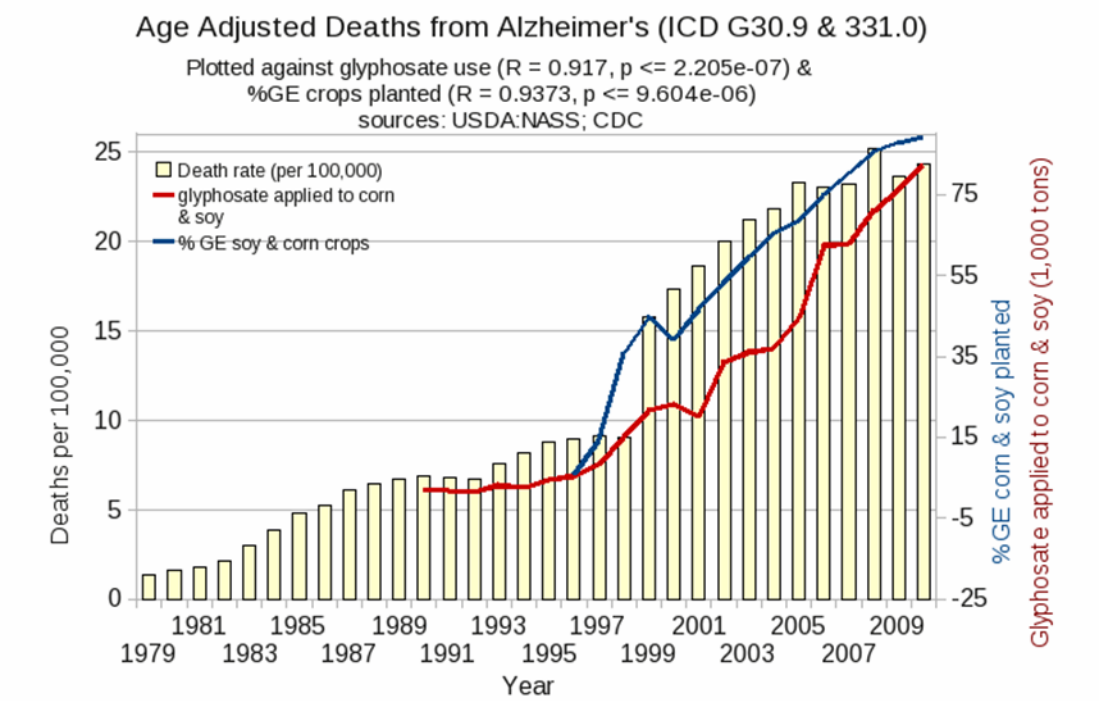
Characteristics of celiac disease point to impairment in many cytochrome P450 enzymes, which are involved with detoxifying environmental toxins, activating vitamin D3, catabolizing vitamin A, and maintaining bile acid production and sulfate supplies to the gut. Glyphosate is known to inhibit cytochrome P450 enzymes.

Deficiencies in iron, cobalt, molybdenum, copper and other rare metals associated with celiac disease can be attributed to glyphosate's strong ability to chelate these elements. Deficiencies in tryptophan, tyrosine, methionine and selenomethionine associated with celiac disease match glyphosate's known depletion of these amino acids. Celiac disease patients have an increased risk to non-Hodgkin's lymphoma, which has also been implicated in glyphosate exposure. Reproductive issues associated with celiac disease, such as infertility, miscarriages, and birth defects, can also be explained by glyphosate. Glyphosate residues in wheat and other crops are likely increasing recently due to the growing practice of crop desiccation just prior to the harvest. We argue that the practice of "ripening" sugar cane with glyphosate may explain the recent surge in kidney failure among agricultural workers in Central America. [137] *We conclude with a plea to governments to reconsider policies regarding the safety of glyphosate residues in foods.*

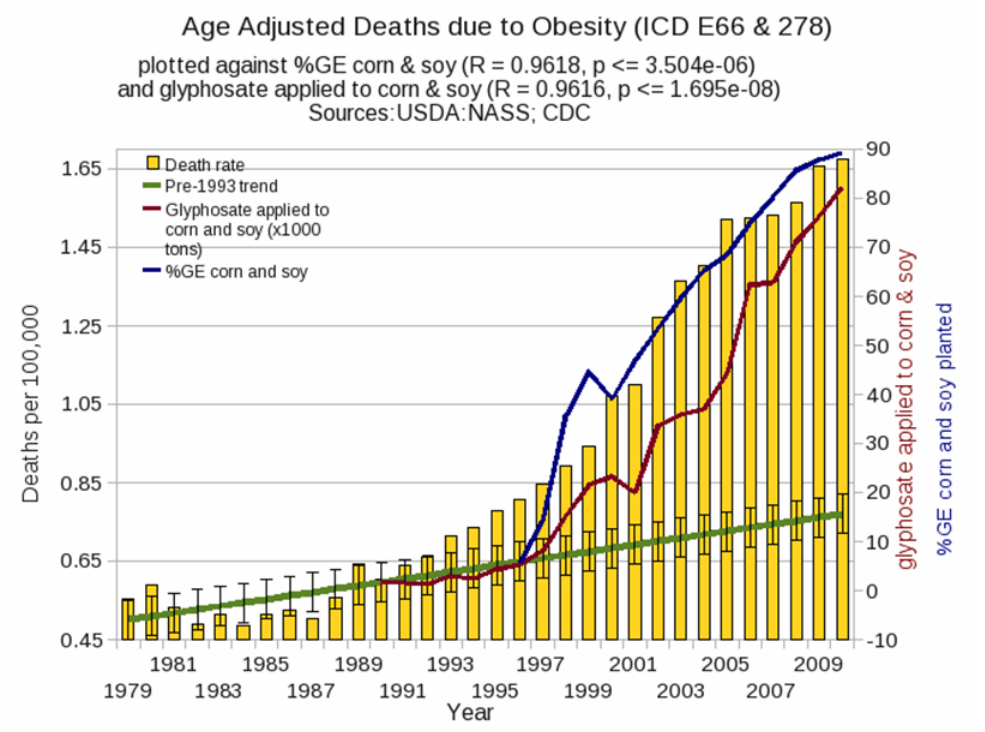


[136] http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/

[137] http://www.nature.com/ki/journal/v68/n97s/full/4496413a.html



Obesity '*<u>is increasingly seen as the norm</u>'* according to England's Chief Medical Officer. Professor Dame Sally Davies has criticised clothes manufacturers for introducing larger mannequins and the media for featuring "*pictures in severely obese people, which are unrepresentative of the majority over the overweight population*." [138]



[138] http://www.bbc.co.uk/news/health-26765078

Effects of pesticides on human health

Epidemiological evidence of deterioration of health in the UK

Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study[139]
The Centre for Longitudinal Studies based at the Institute of Education University of London published their latest report on 9 November 2013.
Their key findings of the cohort at age 42 were that:

- The generation born in 1970 is considerably more likely to be overweight or obese than those born 12 years earlier were at the same age.
- Men born in 1970 are far more likely to be overweight than women.

Bearing in mind our previous reports about glyphosate being toxic in extremely low doses, we suggest that humans are being exposed regularly to small amounts of glyphosate residues in staple foods such as bread, cereals and lentils (see Defra Expert Committee on Pesticide Residues in Food.[140]) The use of glyphosate for desiccation on both barley and wheat was accepted by the brewing and distilling industries in 2007[141] therefore it is probable that men are more likely to be overweight because of the consumption of beer or whisky with glyphosate residues. Many foods imported from the US have GM ingredients and will contain glyphosate (or other herbicide residues). These include products which are made from corn or soya, such as energy bars, sugar drinks; and fruit or vegetables. The US still does not require labelling of GM. Animals in the UK are fed with imported GM soya and maize. The fact that glyphosate is in the food chain is confirmed by two studies in which glyphosate residues were found in the urine of urban populations in Germany[142] in 2012 and the EU as a whole in 2013.[143] A third study by Prof Bohn and colleagues from Norway shows glyphosate and AMPA residues in samples of GM Roundup® Ready Soy from Iowa. The organisation Moms Across America and Sustainable Pulse have revealed the presence of glyphosate in breast milk, urine and drinking water, despite Monsanto's claim that it was excreted in the urine and accumulation did not occur.[144]

Global burden of disease study 2010 shows declines in the health of the UK and US
Between 1990 and 2010, Britain and the US have slipped down the scale of health compared with other wealthy nations and the patterns of disease are remarkably similar.
In the US: "*However, morbidity and chronic disability now account for nearly half of the US health burden, and improvements in population health in the United States have not kept pace with advances in population health in other wealthy nations.*"[145] In the UK: "*The performance of the UK in terms of premature mortality is persistently and significantly below the mean of EU15+ and requires additional concerted action… premature mortality from several major causes such as cardiovascular disease and cancers…In terms of premature mortality worsening ranks are most notable for men and women aged 20-54 years. Increases*

[139] Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study at age 42
[140] http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRiF
[141] Notes on the use of Roundup®products on malting, milling and seed crops: Monsanto UK Ltd 2007. http://www.grainfarmers.co.uk/seeddownloads/Roundup%20on%20seed%20%20milling%20and%20malting.pdf
[142] http://www.ithaka-journal.net/herbizide-im-urin?lang=e
[143] http://www.foeeurope.org/weed-killer-glyphosate-found-human-urine-across-Europe-130613
[144] http://www.momsacrossamerica.com/glyphosate_testing_results
[145] http://www.ncbi.nlm.nih.gov/pubmed/23842577.

in Alzheimer's disease, breast cancer, oesophageal cancer, congenital anomalies "and a growing burden of disability, particularly from mental disorders" are all acknowledged.[146]

Substantial increase in neurological deaths 1979-2010

Ten major developed Western countries and 10 smaller Western countries were studied.[147] There was a major reduction in general mortality in all 20 countries, but total neurological deaths rose substantially between 1980 and 2010 in both sexes in 16 out of 20 western countries. The mortality was significantly higher in females. "*Moreover, looking back 30 or more years the concept of early dementia or the need for the creation of a Young Parkinson's Disease Society in Britain would have seemed a tautology.*"

Link between mid-life obesity and dementia: a twin study[148]

Both overweight and obesity at midlife independently increase the risk of dementia, Alzheimer's disease and vascular dementia. Genetic and early-life environmental factors may contribute to the midlife high adiposity-dementia association.

Endocrine Disrupting Chemicals (EDC) – 2012

An assessment of the State of Science of Endocrine Disruptors was prepared for the United Nations Environment Program and the World Health Organization by a group of approximately 50 expert scientists.[149]

The authors outlined the current evidence of: 1) a high incidence, and increasing trends, of many endocrine-related disorders in humans; 2) observations of endocrine-related effects in wildlife populations; 3) identification of chemicals with endocrine disrupting properties linked to disease outcomes in laboratory studies.

"*Endocrine-related disorders in humans are manifest by:*

- *Increases in low semen quality in young men (up to 40%)*
- *Incidence of genital malformations has increased over time*
- *Adverse pregnancy outcomes and birth defects has increased in many countries*
- *Neurobehavioural disorders related to thyroid dysfunction has increased*
- *Endocrine-related cancers (breast, endometrial, ovary, prostate, testicular and thyroid cancers) have been increasing over the past 40–50 years*
- *Earlier onset of breast development in young girls which leads to breast cancer*
- *The prevalence of obesity and type 2 diabetes is increasing. The WHO estimates that 1.5 billion adults worldwide are overweight or obese and that the number with type 2 diabetes increased from 153 million to 347 million between 1980 and 2008."*

The conclusion was: "*It is essential to evaluate associations between EDC exposures and health outcomes by further developing methods for which proof of concept is currently under development.*" An Editorial in the *Lancet*[150] concluded: "*there is currently no widely agreed system for assessing the strength of associations between exposure to chemicals (including EDCs) and adverse health outcomes*."

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[146] http://www.ncbi.nlm.nih.gov/pubmed/23668584 UK health performance: findings of the Global Burden of Disease Study 2010

[147] http://dx.doi.org/10.1016/j.phe.2012.12.018 Pritchard, C. *et al*. Changing patterns in mortality from neurological deaths in the 10 major developed countries 1979-2010 Public Health (2013)

[148] Midlife overweight and obesity increase late-life dementia risk: a population-based twin study**.** Xu, W.L. *et al*. Neurology http://www.ncbi.nlm.nih.gov/pubmed/21536637

[149] http://unep.org/pdf/9789241505031_eng.pdf

[150] http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60564-4/fulltext

Glyphosate was not even considered as a candidate for an Endocrine Disrupting Chemical; why was that? The evidence produced in the Report that atrazine was also an EDC was overwhelming; why was atrazine not named.as one? The reason is that atrazine is still used extensively in many countries, including the US and Australia and Syngenta relentlessly pursues anyone who says it is harmful.[151] It was still used in Britain 4 years after it had been banned in Europe, with disastrous consequences for some people.

Brain tumour statistics are devastating to families in the UK

Brain Tumour Research UK Statistics in 2012[152]

- *"The statistics speak for themselves. Something has to be done. Too many people are being faced with the devastating diagnosis each year: brain tumours kill more children and adults under the age of forty than any other cancer and five year survival remains the same as it did thirty years ago. We need to raise significant amounts to fund research into this dreadful disease if we are to identify the causes, advance treatments and ultimately find a cure for brain tumours.*
- *Brain tumours kill more children and adults under the age of forty than any other cancer and five year survival remains the same as it did thirty years ago.*
- *Brain tumours are the biggest cancer killer of UK children.*
- *More people under 40 die of a brain tumour than from any other cancer.*
- *Only 12% of males diagnosed with a brain tumour and 15% of females survive beyond 5 years (compared with 50% for all cancers).*
- *Brain tumours are a particularly devastating form of cancer with one of the lowest survival rates."*

Global epidemics of Autism and Attention Deficit Hyperactivity Disorder (ADHD)

On June 12/13th 2013, an Autism conference was held in Edinburgh.[153] Dr Martha Herbert, an expert on Autism from Harvard Medical School, was an invited speaker. Dr Herbert believes the culprit is an environmental toxin in autistic children that interferes with nutrient absorption. "*We need to get them built up again, getting the gut micro-flora sorted out.*" The US has had an even more dramatic (and earlier) rate of increase than in Scotland (261% for boys and 385% for girls between 1997 and 2008).[154]

In the US:

- In 1970: one child in 10,000 was born with Autism
- In 2007: one child in 150 was born with Autism
- In 2009: one child in 100 was born with Autism
- In 2013: one child in 50 was born with Autism

If the rate continues to increase *'pro-rata*' Dr Stephanie Seneff predicts that by 2025, one child in two in the US will develop Autism.[155]

Dr Nancy Swanson has constructed a graph of the number of children with autism plotted against glyphosate use on GE corn and soy.[156] The plot is shown using data from US Department of Education for the number of autistic children. Baron Cohen *et al*. in a study of 66 female adolescents with anorexia nervosa and 1,609 female adolescents without showed

[151] www.newyorker.com/reporting/2014/02/10/140210fa_fact_aviv
[152] www.braintumourresearch.org
[153] http://www.scotsman.com/lifestyle/autism-unlocking-a-generation-1-2944710
[154] 87222060-CDC-Autism-Study-March-2012.pdf
[155] http://www.youtube.com/watch?v=JB4GFyjewHQ
[156] Autism data were obtained from the U.S. Department of Education, which keeps track of school age children receiving services under the Individuals with Disabilities Education Act (IDEA).

that girls with anorexia have elevated autistic traits.[157] This corresponds with the effects of glyphosate on the human gut microbiome causing micronutrient and amino acid deficiency.

US Kids' Health Report October 2012
A Generation in Jeopardy: How pesticides are undermining our children's health & intelligence.[158]
"This report draws from academic and government research, focusing on studies published within the past five years, to chronicle the emerging threat of – with over 1 billion pounds applied on farms and homes annually– to children's health.…Our current system of industrial agriculture and pest control relies on chemical inputs sold by a handful of corporations. These multinational corporations wield tremendous control over the system, from setting research agendas to financing, crop selection and inputs throughout the production and distribution chain. Not surprisingly, these same corporations also hold significant sway in the policy arena, investing millions of dollars every year to influence voters, lawmakers and regulators at both the state and federal level to protect the market for pesticides. The result is agriculture, food and pest control systems that serve the interests of these corporations well. It does not, however, serve farmers, who have lost day-to-day control of their operations and are putting themselves and their families in harm's way."

Excess risk of cancers in those exposed to pesticides (farming, commercial, home and garden)[159]
Abstract: *A growing number of well-designed epidemiological and molecular studies provide substantial evidence that the pesticides used in agricultural, commercial, and home and garden applications are associated with excess cancer risk. This risk is associated both with those applying the pesticide and, under some conditions, those who are simply bystanders to the application.*

Only One Chance: How Environmental Pollution Impairs Brain Development[160]
Industrial chemicals that injure the developing brain are among the known causes for this rise in prevalence of neurodevelopmental disabilities
A review was published on 15/02/2014 in *The Lancet Neurology*: Neurobehavioural effects of developmental toxicity by Grandjean and Landrigan. These leading experts describe the close link between environmental chemicals and children's health.[161] *"Neurodevelopmental disabilities, including autism, attention-deficit hyperactivity disorder, dyslexia, and other cognitive impairments, affect millions of children worldwide, and some diagnoses seem to be increasing in frequency*." [There is an autism epidemic globally. In the US in 1970, only one child in 10,000 was born with autism; by 2013 one child in 50 was affected. If the rate continues to increase pro-rata, Dr Stephanie Seneff predicts that by 2025 one child in two in the US will have autism.]
"*Neurodevelopmental disorders such as autism, attention deficit disorder (ADHD), dyslexia, and cerebral palsy affect one in six children worldwide. There has been a growing body of evidence that strongly links childhood exposures to hazardous chemicals such as mercury,*

[157] Baron-Cohen et al. Molecular Autism 2013, 4:24 http://www.molecularautism.com/content/4/1/24
[158] http://www.panna.org/publication/generation-in-jeopardy
[159] http://onlinelibrary.wiley.com/doi/10.3322/caac.21170/full
Michael C. R. Alavanja, Matthew K. Ross, Matthew R. Bonner Increased Cancer Burden Among Pesticide Applicators and Others Due to Pesticide Exposure. *CA Cancer J Clin* 2013 American Cancer Society
[160] Only one chance: How environmental pollution impairs brain development – and how to protect the brains of the next generation *Oxford University Press*
[161] www.thelancet.com/journals/laneur/article/PIIS1474-4422(13)70278-3/abstract

lead, and particular solvents and pesticides…Acetamiprid, amitraz, avermectin, emamectin, fipronil, glyphosate, hexaconazole, imidacloprid, tetramethylenedisulfotetramine have been identified since 2006 (chlorpyrifos before 2006) as being toxic to the human nervous system."… "*The three pillars of our proposed strategy are: legally mandated testing of existing industrial chemicals and pesticides already in commerce, with prioritisation of those with the most widespread use*." They are calling for countries to transform their chemical risk-assessment procedures in order to protect children from everyday toxins that could potentially cause brain development disorders. Prof Philippe Grandjean from Harvard School of Public Health in Boston and University of Southern Denmark said: "*Current chemical regulations are woefully inadequate to safeguard children whose developing brains are uniquely vulnerable to toxic chemicals in the environment*".

Glyphosate is now used to dry crops before harvest as well as for weed control
Pre-harvest application of glyphosate to wheat and barley in the UK was suggested as early as 1980, but its routine use as a drying agent 7-10 days before harvest began in 2006. Monsanto's document: The agronomic benefits of glyphosate in Europe [2010][162]
Page 3: "*Since its discovery in the early 1970's the unique herbicidal active ingredient glyphosate 'has become the world's most widely used herbicide because it is efficacious, economical and environmentally benign.' These properties have enabled a plethora of uses which continue to expand to this day providing excellent weed control both in agricultural and non-crop uses to benefit mankind and the environment*. Glyphosate has an "*excellent safety profile to operators, the public and the environment*". The document outlined at least 16 use areas (p3) from vegetation control on land throughout agricultural production, on GM Roundup® Ready Crops and on non-agricultural land "*around structures on farms, amenity and industrial areas and on railways*" (p 4). In 2004 it was used on 13% wheat area. By 2006 it became used more routinely for weed control or pre-harvest treatment (at least 40% cereal and 80% oilseed rape, p 21). This increases glyphosate residues in animal and human food.

Monsanto's recommendations for the use of Roundup® in UK towns and cities
Streets and pavements[163], Japanese knotweed[164], Bracken[165], Rhododendron[166] are amongst many weeds for which Roundup® is promoted. "*It is approved for weed control in amenity, industrial, forestry and aquatic areas…Roundup Pro Biactive and ProBiactive 450 can be used at any time of the year as long as weeds are green and actively growing*". Monsanto advises re-spraying if die-back is not observed at 6 weeks. However, repeated spraying of weeds with Roundup® results in 'super-weeds' since weeds become resistant. NEW RULES 2012: Streets and pavements[9]. *"From 2012 new rules from the regulator, Chemical Regulations Directorate (CRD) prohibits blanket spraying of any herbicide on non-porous hard surfaces. Targeted treatment of weeds must be undertaken on roads, pavements, concrete and paved areas and drains must not be oversprayed."*

In the US, Benton County's 3-year control of river weeds; is it linked to birth defects?

[162] http://www.monsanto.com/products/Documents/glyphosate-background-materials/Agronomic%20benefits%20of%20glyphosate%20in%20Europe.pdf
[163] http://www.monsanto-ag.co.uk/content.output/165/165/Roundup/Amenity/Streets%20and%20Pavements.mspx
[164] http://www.monsanto-ag.co.uk/content.output/170/170/Roundup/Difficult%20Weeds/Japanese%20Knotweed.mspx
[165] http://www.monsanto-ag.co.uk/content.output/171/171/Roundup/Difficult%20Weeds/Bracken.mspx
[166] http://www.monsanto-ag.co.uk/content.output/174/174/Roundup/Difficult%20Weeds/Rhododendron.mspx

Washington State has a Noxious Weed Control Board and glyphosate is the main herbicide recommended for noxious weed eradication. Benton County Herbicide treatment started in the Yakima River in 2010 and continued for 3 years without monitoring glyphosate levels in water.[167] Three Washington Counties (Yakima, Benton and Franklin) sharing the same irrigation water for agriculture, reported a high number of pregnancies resulting in a fatal birth defect, anencephaly.[168] The cause was a mystery to state health officials.[169] But as of January 2013, officials with the Washington state health department and the Centers for Disease Control and Prevention had counted nearly two dozen cases in three years, a rate four times the national average.[170]

Invasive species in Britain and Glyphosate-Resistant Super-Weeds in US are the same
We have found historical and chronological evidence to show that the herbicide glyphosate (or other herbicides that are used as alternatives) is responsible for the transformation of garden escapes into super-weeds (in the UK these are termed 'invasive species'). Japanese knotweed (*Reynoutria japonica)* was introduced into Holland by an amateur Dutch botanist, Van Reynoutre in the late 16th Century. For 500 years it caused few problems. In the early 1900s experiments were made with chemical herbicides. In 1941 2,4-D was discovered in the US and the UK (Rothamsted Research) at the same time. It was commercialized in 1946: atrazine in 1958, dicamba in 1967 and glufosinate in 1991. Glyphosate was introduced into Europe in 1974 and became a global best-selling herbicide because the public was told by industry and the regulators that it was 'safe.' Everything changed because it was used repeatedly in the same areas and knotweed developed resistance to it. "*The rampaging spread across Britain in the late 1970s and 80s is regarded as a parable of the dangers of casually introducing alien species into the countryside*."[171] However, in 1969 in the UK[172] it was still being promoted as a plant suitable for gardens (as was the Balsam species *Impatiens glandulifera (royalei).* Both plants became super-weeds and were classified as invasive species in the 1981 Wildlife and Countryside Act[173] (In the US, the first confirmed Glyphosate-Resistant weed, rigid ryegrass, was reported in 1998. Super-weeds in the US in GE cropping systems are now a massive problem[174]). A similar situation has occurred in aquatic areas where glyphosate was used for 3 years in rivers in Washington State[175] (Legal Status of Noxious Weeds[176]). However, in 1996 the Attorney General of the State of New York Consumer Frauds and Protection Bureau, Environmental Protection Bureau had convicted Monsanto for false advertising with regarding the safety of Roundup® herbicide, including its use in water.[177] Monsanto's claims contradict the following statements required

[167] http://agr.wa.gov/plantsinsects/weeds/npdespermits/docs/IPMFreshwaterEmergentNoxiousQuarantineListedWeeds.pdf
[168] http://farmwars.info/?p=11137
[169] http://abcnews.go.com/Health/washington-state-health-officials-stumped-high-rate-birth/story?id=19687592
[170] http://www.nbcnews.com/health/kids-health/bizarre-cluster-severe-birth-defects-haunts-health-experts-n24986
[171] http://www.theguardian.com/books/2010/oct/10/weeds-richard-mabey-review
[172] Marshall Cavendish Illustrated Encyclopaedia of Gardening 1969.
[173] http://www.legislation.gov.uk/ukpga/1981/69
[174] http://www.enveurope.com/content/24/1/24
[175] http://farmwars.info/?p=11137
[176] http://agr.wa.gov/plantsinsects/weeds/npdespermits/docs/IPMFreshwaterEmergentNoxiousQuarantineListedWeeds.pdf
[177] http://farmwars.info/?p=11565 page 13

on the EPA-approved label for Roundup® at the time the claims were made:
ENVIRONMENTAL HAZARDS Avoid direct application to any body of water.[178]

Glyphosate-Resistant Super-weeds: an economic reason for not spraying chemicals
Even the Chemical Companies have admitted to weed resistance. A press release from Dow in January 2014 urges the USDA to authorise their new GM corn and soy tolerant to a combination of 2,4-D (part of the Agent Orange defoliant) and glyphosate.[179] "*New data from November of 2013 indicate an astonishing 86 percent of corn, soybean and cotton growers in the South have herbicide-resistant or hard-to-control weeds on their farms. The number of farmers impacted by tough weeds in the Midwest has climbed as well, and now tops 61 percent. Growers need new tools now to address this challenge.*"

Northern Indiana. Giant Ragweed (3 m) resistant to glyphosate. Farm workers have to weed it by hand. This is one of nine different weeds that commonly occur. (By 2014, 22 have been documented)

[178] http://www.mindfully.org/Pesticide/Monsanto-v-AGNYnov96.htm
[179] http://newsroom.dowagro.com/press-release/dow-agrosciences-statement-about-usda-announcement-regarding-draft-environmental-impac

2012 Japanese knotweed invasion around a proposed building site in the Swansea Valley[180] : "*They were 2-3 metres in height and formed a closed canopy*."

Glyphosate in South Wales

In August 2013, we had samples of water tested for glyphosate. There was glyphosate in our drinking water and six times the level in the Clyne River draining from previous industrial areas where glyphosate had been used on Japanese knotweed. Although there were only low concentrations in our tap water, these were of the order of concentrations found in a study in 2013 which showed that breast cancer cell proliferation is accelerated by glyphosate in extremely low concentrations:[181] "*The present study used pure glyphosate substance at log intervals from 10^{-12} to 10^{-6} M. These concentrations are in a crucial range which correlated to the potential biological levels at part per trillion (ppt) to part per billion (ppb) which have been reported in epidemiological studies."* In the UK the incidence of breast cancer almost doubled between 1975 and 2010. I do not know the breast cancer figures for Swansea but perhaps Dr Ruth Hussey, the CMO for Wales could enlighten us.

No glyphosate usage records are kept by the City & County Council

Parts of South Wales, in former mining areas, invasive plants such as Japanese knotweed and Himalayan Balsam abound. The local Council does not hold annual records of glyphosate application to these invasive weeds. It has a contract with a commercial organisation to supply industry-approved vegetation management techniques. A quote from the contractor: "*The glyphosate we use called round up has a hazard free label".*

Unable to obtain historical usage figures, we were given a one-month "snap shot" from the Contractor: April to May 2013; from which we had some idea of the vast amounts sprayed each year and to which the citizens of Swansea had been exposed for many years.

Our Assembly Member Mrs Edwina Hart wrote to Swansea City and County Council

On 18th September 2013, Richard Staton of the Parks Department replied and said that they would continue to use it until the Health and Safety Executive instructed them to stop. In my email to Ms Judith Hackitt on 13/02/2014 I explained that Japanese knotweed was a Glyphosate-Resistant Super-weed and to spray it repeatedly with the same herbicide would just make it stronger; having not received a reply (April was fast approaching, the time at which spraying begins) I wrote again on 25/02/2014.

On 28/02/2014 I received a letter from Head of Regulatory Policy of the Chemicals Regulation Directorate saying: "*You raise a range of issues most of which are not the responsibility of the HSE. The regulatory authority responsible for pesticides in Germany is conducting (on behalf of the whole EU) a further assessment of the relevant data to see if continued approval can be supported in the EU from 2016"*

Why does David Cameron hate Wales?

Polly Toynbee wrote in the Guardian on Friday March 7th 2014:[182] "*David Cameron has mentioned Wales 29 times in Prime Minister's Questions, which sounds reasonable because he is its prime minister too – except that every single mention has been derogatory and contemptuous. The Conservatives detest everything Welsh."* He has said the Health Service in Wales is a disgrace on several occasions since then (and so has Jeremy Hunt).

[180] http://www.swansea.gov.uk/index.cfm?articleid=15838
[181] http://www.ncbi.nlm.nih.gov/pubmed/23756170
[182] http://www.theguardian.com/commentisfree/2014/mar/07/lessons-real-job-creation-wales

Are there reasons for the Prime Minister's regular attacks on Wales?
Polly Toynbee goes on to say: "*Most poisonous have been Tory scares on health, driven by need to prove that Welsh refusal to put its services out to tender to private companies produces worse results.…Wales has the oldest and sickest population in Britain, with the highest post-industrial disease and thousands moving there to retire*."
We can add some other possible reasons. The Wikileaks' Paris Cables exposed the fact that Monsanto was using US Ambassadors to punish EU countries for opposing GM crops. Does David Cameron's aggressive attitude arise from the fact that the Welsh Government is opposed to GM cultivation? However, so is the Scottish Government and indeed the Scottish Health figures were only marginally better than those of Wales (or England for that matter). But Scotland must be wooed in case it runs off with the UK oil and gas supplies, whereas David Cameron does not think that Wales has any assets to benefit "growth in the economy", unless of course he had Wales in mind to be 'fracked', to add more chemicals to the groundwater to those that already exist.

Monsanto given special treatment by the Whitehall Government, against Wales[183]
"In 2003, the residents of Groesfaen began to complain about vile smells emanating from the Brofiscin quarry, a 36-meter deep quarry located at the edge of the village. More alarming still, the waters of the stream that flowed around the quarry began to turn vivid orange…The investigation revealed that a Monsanto-owned plant in Newport (a city near Groesfaen) had paid contractors to illegally dump thousands of tons of cancer-causing chemicals - among them PCBs, dioxins and Agent Orange derivatives - into the Brofiscin quarry between 1965 and 1972.[i] *These chemicals, which had corroded their containers and were leaching into the soil, not only endangered the lives of the local villagers but also those of the more than 350,000 residents of Cardiff, since the chemicals were coming into contact with a major underground aquifer that was (and still is) destined to be the city's main water supply*."
The Environment Agency - a government agency concerned with flooding and pollution – was hired to clean-up the site in 2005.
"*Firstly, the Agency repeatedly failed to hold Monsanto accountable for its role in the pollution (a role that Monsanto denied from the outset). Secondly, the Agency consistently downplayed the dangers of the chemicals themselves, even claiming that they offered no "identifiable harm or immediate danger to human health" in their official report*."
"In 2011, Monsanto reluctantly agreed to help the Environment Agency clean-up the Brofiscin quarry when the latter discovered that many of the 67 chemicals detected on the site were exclusively manufactured by the former. Nonetheless, the clean-up effort remains underfunded and inefficient, and the Brofiscin quarry remains the most contaminated site in the United Kingdom."

Why is the population of South Wales sicker than that in England?
The above failure of the Environment Agency to hold Monsanto accountable for dumping its chemical waste in the valleys is only part of the reason. The other reason that the population of Wales is sicker than that in England is because the English Chemicals Regulation Directorate authorizes glyphosate (an antibiotic, we have recently discovered) to be sprayed on invasive weeds (Glyphosate-Resistant super weeds) on former industrial sites in such quantities that we had glyphosate in our drinking water at the end of summer 2013. The contractor sprays around houses and in villages, past schools, libraries and surgeries where children are exposed. The public is receiving this exposure to glyphosate in addition to that now found in residues in their staple foods. Meanwhile the South Wales epidemic of

[183] http://www.naturalnews.com/044009_Monsanto_Brofiscin_environmental_damage.html

childhood obesity is out of control; neurobehavioral disorders are more common, depression is rife, each week the population is becoming sicker; obesity, diabetes, high cholesterol levels, multiple myeloma, breast cancer, colon cancer, oesophageal cancer, melanoma, leukaemia, non-Hodgkin's lymphoma, pancreatic cancer, multiple sclerosis, Parkinson's Disease, ovarian cancer, motor-neurone disease and glioblastoma (a particularly aggressive form of brain tumour). Some individuals have had three or four different cancers.

Little choice of glyphosate-free food in South Wales as supermarkets backtrack on promises

In January 2013, M&S, Sainsbury's, Co-Op and Tesco announced that they will no longer require that the farm animals in their supply chains are fed a non GM diet.[184] According to Peter Melchett of the Soil Association: "*Tesco and the Co-Op are misleading their customers by claiming that the GM feed will not be detectable in products like eggs, milk or chicken. This is not true. Several research studies have found that GM DNA in animal feed is taken up by the animal's organs and can then be detected in the milk, meat and fish that people eat. This has been confirmed today by the Government's Food Standards Agency*. "

In the process of boosting big business, global chemical apocalypse is inevitable

The Government support for the banking sector after 2008 was nearly 90% of our national wealth (compared with 35% in Germany); the British Medical Journal (BMJ) revealed that Corporate Lobbyists for the food, tobacco and alcohol industries found it easier to access the Prime Minister than his own MPs; the Department of Health alone had 130 meetings with industry representatives in 3 years.

'Few prime ministers have been as tireless in promoting Britain's arms industry as David Cameron" (many arms export licences are to countries that the Foreign Office listed as countries of concern in terms of human rights abuses). "*He calls it a key part of the UK's economy*." The British Government has decided to support the shale gas industry. 'Fracking' will involve even more chemicals, this time being blasted underground in a mixture with sand and water. France's constitutional Court has upheld a ban on hydraulic fracturing to protect the environment, particularly against groundwater contamination, so a French company announced it was taking a 40% share in the drilling operations in the Gainsborough trough.

The BMJ also revealed that a FDA scientist had said: "*the clinical trial system is broken*." [185] This referred to incomplete access to clinical trial data from the Pharmaceutical Industry. The scandal about the stockpiling of Tamiflu, a drug that lessens the symptoms of flu by only half a day was first exposed by the British Medical Journal and now by the Cochrane Collaboration.[186] It is a scandal because the UK government spent £0.5bn stockpiling this drug in the hope that it would help prevent serious side-effects from flu infection (presumably using the taxpayer's money). But the bigger scandal is that Roche broke no law by withholding vital information on how well its drug works.

Yet Syngenta and its parent company AstraZeneca are a key part of the Government's Strategy for Life Sciences.[187] The pesticide companies cause diseases using chemicals (cancers, high blood cholesterol, hypertension, diabetes, obesity, dementia, *etc.*) and the pharmaceutical industry discover chemicals (with lots of side effects) to treat these

[184] http://www.theguardian.com/commentisfree/2014/jan/16/america-gm-backlash-consumers-farmers-britain

[185] http://www.bmj.com/content/347/bmj.f6980

[186] http://www.theguardian.com/business/2014/apr/10/tamiflu-saga-drug-trials-big-pharma

[187] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences.pdf

conditions. Monsanto must be very happy that CoT and EFSA have re-approved the toxic chemical aspartame despite evidence about the toxicity of aspartame from Professor Erik Millstone's detailed response to EFSA,[188] so diet coke will continue to be drunk by people who are being made obese by glyphosate

Majority of funding goes on research into genetic causes of cancer and gene therapy. No-one wants to find environmental causes; yet genetic changes cannot proceed so fast

Signatures of mutational processes in human cancer: genetic map of cancer mutations

A study of mutations from 7,042 cancers by the Sanger Institute revealed that 21 distinct mutational signatures that alone, or in combination, drive 30 different types of cancer.[189] Mutations of DNA may be due to "*chemicals in the environment or faults that arise during aging... The work has shed light on how the body's natural defences might inadvertently drive a range of cancers. When cells are infected by viruses, they can switch on genes that produce a family of enzymes. These enzymes destroy viruses by mutating their DNA, but the onslaught may cause collateral damage." "It's speculation, but it may be that in killing the virus, many mutations are scattered in the genome of the cell itself, and that cell can then go on to become a cancer,*" said Prof Mike Stratton. "*The findings are expected to drive research into the causes of mutations behind each cancer. One way to do this is to expose human cells to suspected carcinogens in the environment to see if they produce similar patterns of mutations."*[190] This has already been done with glyphosate and breast cancer cells.

The study found that breast cancer cell proliferation is accelerated by glyphosate in extremely low concentrations.[191] "*The present study used pure glyphosate substance at log intervals from 10^{-12} to 10^{-6} M. These concentrations are in a crucial range which correlated to the potential biological levels at part per trillion (ppt) to part per billion (ppb) which have been reported in epidemiological studies."* According to CRUK the breast cancer incidence has increased from less than 75 per 100,000 in 1975 to more than 120 per 100,000 in 2010

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Glyphosate earns billions for the Pharmaceutical Companies with the sales of Statins

Agricultural Corporations all make their own brands of glyphosate. The secret ingredients act as detergents or surfactants; they help penetration but make the glyphosate far more toxic.[192] Prof Sir Rory Collins of Oxford University says that all people should consider taking statins at the age of 50, and the doctors who advise otherwise "*may be putting lives at risk*" from heart attacks and stroke. [193] The graphs from the US correlate glyphosate with disorders of lipoprotein metabolism, diabetes, hypertension and stroke. Sir Rory in his video supplied a vital clue when he said *"a Chinese peasant would only have a cholesterol level 2 mmol/L; whereas men in Britain have higher levels*". Glyphosate was introduced in 1975. At what stage did doctors start treating high levels with statins? In a Merck-sponsored study with simvastatin in 1994[194]… *35% reduction in their cholesterol, and their chances of dying of a heart attack were reduced by 42%***.** In March 2014, the Joint Committee on Vaccination and Immunisation (JCVI), which advises UK governments on vaccination, recommended routine use of meningitis B vaccine for babies at 2, 4 and 12 months of age. Britain is the first

[188] http://sro.sussex.ac.uk/43821/1/EM_Letter_to_EFSA_on_Aspartame_22Feb2013.pdf
[189] http://www.nature.com/nature/journal/vaop/ncurrent/full/nature12477.html
[190] http://www.theguardian.com/science/2013/aug/14/genetic-map-cancer-mutation-disease
[191] http://www.ncbi.nlm.nih.gov/pubmed/23756170
[192] Ethoxylated adjuvants of glyphosate-based herbicides are active principles of human cell toxicity. *Toxicology* 2013 http://dx.doi.org/10.1016/j.tox.2012.09.006
[193] http://www.theguardian.com/society/2014/mar/21/-sp-doctors-fears-over-statins-may-cost-lives-says-top-medical-researcher
[194] http://www.ncbi.nlm.nih.gov/pubmed/7968073

country to do so. It is salutary to watch this archival video with Merck vaccine scientist Dr Maurice Hilleman, who admitted that nearly all vaccines are founded on fraud.[195] The scientist, who died in 2005, never knew that his interview would be made public. Is the Department of Health sure that Novartis has released all the data? Is there aluminium in it?

Investigative journalism is dead; Universities have been corrupted by philanthropists and some science journals have lost their integrity to 'Big Ag' and 'Big Pharma'
John Mulholland wrote an Editorial in the Observer on 16/03/2014: There's no choice: we must grow GM crops now.
Patrick Mulvany Chair of the UK Food Group writes to challenge him: "*Is The Observer/Guardian now joining the quislings who are collaborating with powerful industrial interests, which are set to undermine and contaminate the world's efficient, effective, biodiverse and ecological food systems, so that their proprietary technologies dominate globally*?[196] *It is a double affront to the shade of David Astor, as editor of the Observer, who set up the Scott Trust which now owns the paper and - above all – as founder of the Organic Research Centre Elm Farm.*
As many of your readers will know, UK plc's AgriTech business strategy, pushed by BIS and implemented by the BBSRC (the UK's biotech science funder), is to export proprietary British technology that will deliver returns through patents and the sale of scientific know-how with biotechnological and chemical input packages of benefit to the UK - the only technologies that the UK now has expertise in, having lost most of its capacity to do research that supports real food production. To achieve their strategy, government, the scientific establishment and agro-biotech industry need to have a testbed in a UK that permits the release of GM crops, for which, as government and retailers well know, there is no consumer demand."

The Agrochemical Industry has forged partnerships everywhere, especially with youth
Philipp Mimkes, Director of Coalition Against Bayer-Danger, Germany, told me that UNEP had formed a "*preferred partnership*" with Bayer and that, in return for bearing this elevated title, Bayer was sponsoring UNEP's 2005 Young Environmental Leaders gathering in Bangalore.[197] In October 2005, UNEP (Eric Falt) replied to CBG's open letter: "*Please be informed that we have selected Bayer to help support our Children and Youth Programme because of their increasing commitment to environmental values."*

On World Environment Day June 2012, in a pdf produced by UNEP, there is an interview with Professor Wolfgang Plischke, Member of the Board of Management of Bayer AG, about sustainability and partnerships.[198] "*Sustainability and innovation go hand in hand*"
Question: Professor Plischke, how important is sustainability to Bayer?
"I believe that sustainability goes hand in hand with future viability."
Question: How important are these partnerships to Bayer?
"*We work with a broad range of partners and non-governmental organisations worldwide*" (including WHO and UNEP). *"We also cooperate with research institutes and universities, other companies and private and public institutions."*
Question: Does this commitment pay dividends…?

[195] http://counterpsyops.com/2013/09/08/merck-dr-maurice-hilleman-admits-on-record-vaccines-contain-aids-and-cancer-viruses-derived-from-diseased-monkeys/ With acknowledgements to Mike Adams, The Health Ranger and Editor of Natural News.com
[196] http://politicalcleanup.wordpress.com/2014/03/17/uk-food-group-chair-asks-if-the-observerguardian-is-now-joining-the-quislings-collaborating-with-powerful-industrial-interests-monsanto-etc/
[197] www.cbgnetwork.org/2089.html
[198] Page 8 http://www.unep.org/PDF/WED_GreenEconomy.pdf

"*The name Bayer has a good reputation in the market for socially responsible investments*"

An advertisement for a career in **Bayer**: "*At Bayer, we'll give you a chance to make a difference by joining a team that is dedicated to changing the world with great care."*
Bayer: Science For A Better Life[199]

By the time the UK has poisoned the public with glyphosate, neonicotinoid insecticides and GMOs for the sake of marketing them abroad, there will be no market
In fact, every week countries round the world are turning away from GM and glyphosate; the most recent are Hawaii, Peru, Mexico and Brazil. Last week the citizens of France sent 25,657 letters to the French Minister of Agriculture to ban GM Maize MON 810 (which they had previously grown, so had first-hand experience). France has a map of "pesticide-free villages" where the councils have guaranteed not to use herbicides. Sri Lanka has partially banned glyphosate and San Salvador has banned glyphosate totally. Boulder Colorado, Rotterdam and Chicago have banned its use in their cities. Even the USDA is rather less enthusiastic about GM's than it was. Italy (which banned neonicotinoids on maize in 2008) had winter bee losses in 2012 of less than 5%, whereas Britain, which is trying to overturn the neonicotinoid ban in Europe, had a bee mortality of greater than 20%.[200] Is the NFU still going to join Syngenta in its legal case against the ban?

Permanent Peoples' Tribunal (PPT) Bangalore 3rd - 6th December 2011
The six multinational agrochemical companies stood accused of grossly violating human rights by promoting reliance on the sale and use of pesticides known to undermine internationally recognised rights to health, livelihood and life.[201] This is a link to the evidence considered in the judgments against six Trans-National Corporations (TNCs) at the Permanent Peoples' Tribunal (PPT) held in Bangalore and the final verdict of the nine judges (which was broadcast live on the internet).
Pages 35-37 contain a synoptic list of the cases which were submitted to the PPT and pages 38-40 the Programme of Sessions. After hearing evidence from witnesses over three days, the nine judges in the Tribunal concluded that the TNCs are responsible for gross, widespread and systematic violations of the right to health and life, loss of biodiversity, degradation of ecosystems, economic, social and cultural rights, as well as of civil and political rights, and women and children's rights.

The Verdict
"*The last two days we have heard from 19 witnesses; 4 technical witnesses and 15 survivors who have vividly, through the experience and scientific research, compellingly substantiated the allegations made in the indictment*."

Summary of the Verdict by Members of the Jury
Jury: Loss of biodiversity and degradation of ecosystems due to toxic pesticides have effect on life of indigenous peoples.
Jury**:** Loss of biodiversity and threats to indigenous peoples: undermines their way of life.
Jury: Threats and killings of public scientists and activists.
Dr Gianni Tognoni: Systemic toxicity and not isolated cases an expression of companies disregard to effects on populations.

[199] http://www.jobstairs.de/mobile/en/company/bayer.html
[200] http://www.theguardian.com/environment/2014/apr/07/britain-honey-bee-colony-deaths-worst-europe-study
[201] http://www.agricorporateaccountability.net/en/page/ppt/167

Tognoni: There is a dramatic scarcity of independent research.
Jury: Pesticides and GMOs undermine communities.
Jury: Per toxicity of pesticides: there is structural bias in scientific literature pro-pesticides industry.
Juror Tognoni: No doubt there is proof of systemic toxicity and violation of human rights by agrochemical companies.
Elmar Altvater: Pesticide poisoning has been deregulated under neoliberal globalisation.
Altvater: Practices of agrochemical companies has led to economic/financial crises.
Altvater: Other consequences of agricultural TNCs are growing inequalities of hunger. Natural resources are being exhausted.
Paulo Ramazzotti: Pesticides and GMOs have social costs. Changes in traditions must be chosen by communities, not imposed by companies.
Jury: The key issue at stake is continuous generation of social costs; and lack of intervention by authorities.
Juror Ramazzotti: Agrochemical Companies treat people as expendable and dispensable forms of life, as mere commodities.
Jury: Pesticide corporations squelch information, prevent understanding and divide communities.
Juror Baxi says people should not be disregarded as factors of production or disposable. Dignity is key.
Chairman: Corporations have replaced responsibility with CSR – accountability to shareholders only.
Jury: Global Compact has produced little change and corporations can pick/choose human rights violations.
Jury: Agrochemical corporations are responsible for gross widespread violation of human rights.
Juries' recommendations: Governments to prosecute TNCs for criminal liability.
Jury recommends governments to take action to restructure criminal law to make them accountable, to legislate on the precautionary principle.
Jury recommends that patents should be secondary to human rights and protection of biodiversity.

"Corporate totalitarianism … rules through dispensability and corruption. It treats communities, people, countries, ecosystems and species as disposable and dispensable."

The World should wake up to crimes committed by the six Trans-National Corporations (TNCs), not only in Third World Countries, but against the West
In December 2011, for the first time in the history of the Tribunal, witnesses from Europe gave testimony against the corporations. Graham White, a Scottish Beekeeper, and Philipp Mimkes, Director of Coalition Against Bayer Dangers, on behalf of European Beekeepers, described the drastic decline of bee populations across the world, which started in the mid-1990s. At the same period that Bayer introduced neonicotinoid pesticides on the market, honeybee populations started dying everywhere in Europe, US and in other countries. This has imperiled the livelihoods of thousands of beekeepers and compromised food security and jeopardizes the ecosystem. They lodged two documents with the Tribunal: The Truth about the Neonicotinoid Insecticides and Global Wildlife AIDS associated with Neonicotinoid Insecticides.

The Tribunal, which is held 4-yearly, is due in 2015

We imagine that Zen Honeycutt would testify on behalf of Moms Across America for the grave crimes committed against their children in the US. In South Wales our problems are similar to those in America. Although we don't have GM crops (at least, not yet) we do have glyphosate residues in our staple foods and our water is poisoned with it. What marks out South Wales for having this epidemic of cancers, neurological disorders, depression, diabetes and kidney failure in adults and obesity and ADHD in children (similar to those experienced in the US) are the large amounts of Roundup® being sprayed on invasive (super-weeds) in former industrial areas. We have appealed to the HSE and the CRD to give the Council dispensation from spraying an antibiotic that is ineffectual against super-weeds, but poisons us and our children, but they are deaf to our entreaties. Of course, the Regulators, under obligation to Monsanto's shareholders, are in denial about super-weeds.

Dr. Graciela Gomez is an Argentinian Lawyer who has been fighting courageously on behalf of rural farmers against the South American GM system of Agriculture that is resulting in infertility, birth defects, cancers, DNA and gene changes. These are the same herbicide-tolerant crops that are about to be approved in Europe.
This is the quotation on her website:
"Quien sabe que se comete un crimen y no lo denuncia es un CÓMPLICE (José Martí)."
"Whosoever knows that a crime was committed and denounces it not is an accomplice"

Rosemary Mason MB ChB FRCA Compiled with information from a global network of beekeepers, independent scientists and environmentalists 10/04/2014