

Monsanto's science is fraudulent

Glyphosate causes cancers, many other diseases and is toxic to the environment

World Health Organisation's International Agency for Research on Cancer (IARC) has declared glyphosate as a 2A carcinogen (probably carcinogenic in humans)

On 20/03/2015 IARC reached its decision based on the view of 17 experts from 11 countries, who met in Lyon, France, to assess the carcinogenicity of 5 organophosphate pesticides: tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate.¹

However, the IARC Monograph Volume 112 20/03/2015² has no legal power to ban glyphosate. *"The Monographs Programme provides scientific evaluations based on a comprehensive review of the scientific literature, but it remains the responsibility of individual governments and other international organizations to recommend regulations, legislation, or public health intervention."*

The German Rapporteur Member State (BfR) recommended re-approval of glyphosate to the European Food Safety Authority (EFSA)

Professor Dr Dr Andreas Hensel President of the Federal Institute of Risk Assessment (BfR) at a Press release in March 2014 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... 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 (5-enolpyruvylshikimate- 3-phosphate synthase) which is essential for the biosynthesis of certain amino acids. This enzyme is not found in animals and humans."³*

This final statement by the German BfR is wrong: glyphosate poisons humans in the same way as it poisons plants. Humans and animals have exactly the same pathway as in plants; mammals can only absorb nutrients via the bacteria in their gut; the gut microbiome. The gut microbiome is the collective genome of organisms inhabiting our body.⁴ Pesticide scientists and plant scientists have based their assessment of herbicides on complete ignorance of human physiology.

BfR allowed the Glyphosate Task Force (GTF) to exclude many reports that showed that glyphosate bioaccumulates and causes birth defects and cancers

Even the ones that were allowed, BfR managed to dismiss them by saying that they didn't meet the Klimisch criteria: these criteria were devised in 1997 by Klimisch, a BASF scientist, and was a method of assessing the reliability of toxicological studies for regulatory purposes. By this method BfR eliminated the work that Monsanto feared the most (apart from the rat feeding studies of Séralini and his colleagues that were reported by industry to be fraudulent⁵) by Prof Andrés Carrasco and his team in Buenos

¹ [http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045\(15\)70134-8.pdf](http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045(15)70134-8.pdf)

² <http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf>

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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

⁴ <http://www.nature.com/nature/journal/v500/n7464/abs/nature12506.html>

⁵ <http://enveurope.springeropen.com/articles/10.1186/s12302-014-0014-5>

Aires that showed that glyphosate caused malformations in amphibian and chicken embryos, confirming the effects on humans in the Crop-sprayed towns of Argentina.⁶

How BfR managed to dismiss this study and those reporting reproductive toxicity

In the Renewal Assessment Report (RAR) for glyphosate a total of 18 peer-reviewed publications showing reproductive toxicity were ranked 3 – not reliable. The RAR commented on the study by *Paganelli et al.* (i.e. the Carrasco study from Argentina). “The study reported endocrine disruption but was deemed “*not reliable*”. The RAR commented: “*Non-Guideline study that is not sufficiently described for assessment - Inadequate positive and negative control experiments. Irrelevant routes of exposure and inappropriately high doses. Test system not adequate for human risk assessment*”. [Volume 3 Annex B.6.1, p 669] Furthermore, “*multiple high quality toxicity studies and expert review panels consistently agree glyphosate is not a teratogen or reproductive toxicant. The author’s justification for this research is flawed, providing no valid basis, other than an opinion, of an increase in the rate of birth defects in Argentina. Direct injection of frog embryos and through chick egg shells do not reflect real world exposure scenarios to either environmental species or humans.*”⁷ In fact there were several papers on the increase in the rate of birth defects in South America where GM Roundup Ready crops are grown; but the GTF had excluded all of them.

They also excluded the laboratory study by Thongprakaisang, S., et al. (2013). Glyphosate induces human breast cancer cells growth via estrogen receptors. *Food Chem Toxicol* **59**: 129-136.⁸ The study found that breast cancer cell proliferation is accelerated by glyphosate in extremely low concentrations. “*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.*” These were order of concentrations that were found in August 2013 and 2014 in tap water and river water in Swansea.

Roundup has destroyed biodiversity and human health in Swansea

More than 5 tonnes of Roundup have been sprayed in 2015-2017 on invasive weeds in woodland, and more recently, ordinary weeds on roads and pavements in the City of Swansea regardless of the fact that in targeting ‘*public parks, gardens, sports and recreation grounds, school grounds and children’s playgrounds, and in the close vicinity of healthcare facilities where* (according to EU Directive Advice 2009 see page 27) *the risks from exposure to pesticides is high.*’ This is without any measurement of glyphosate in groundwater. In the whole region biodiversity has gradually been destroyed.

Glyphosate is a chelator of minerals, originally patented for cleaning boilers⁹

It chelates (captures) and washes out the following minerals: boron, calcium, cobalt, copper, iron, potassium, magnesium, manganese, nickel, molybdenum, zinc and sulphate. In addition it kills off beneficial gut bacteria and allows toxic bacteria such as *Clostridium difficile* to flourish.¹⁰ Two key problems caused by glyphosate in the diet are nutritional deficiencies, especially minerals and essential amino acids, and systemic toxicity.

⁶ <https://www.ncbi.nlm.nih.gov/pubmed/20695457?platform=hootsuite>

⁷ http://www.i-sis.org.uk/Scandal_of_Glyphosate_Reassessment_in_Europe.php

⁸ <http://www.ncbi.nlm.nih.gov/pubmed/23756170>

⁹ <http://www.google.com/patents/US3160632>

¹⁰ <http://www.mdpi.com/1099-4300/15/4/1416>

Chelator actions of glyphosate: 'the identical process involved in tumor formation': a letter written by the late Marion Copley US EPA toxicologist to her colleague Jess Rowland (One of the Monsanto Papers) ¹¹

It's been four years since Marion Copley, a toxicologist who had worked for 30 years for the EPA, wrote this letter to her then-colleague, Jess Rowland, accusing him of conniving with Monsanto to bury the agency's own hard scientific evidence that it is "essentially certain" that glyphosate, the key ingredient in Monsanto's Roundup weed killer, causes cancer. The date of the letter comes after Copley left the EPA in 2012 and shortly before she died from breast cancer at the age of 66 in January 2014. She accuses Rowland of having "intimidated staff" to change reports to favor industry, and writes that research on glyphosate, the key ingredient in Monsanto's Roundup, shows the pesticide should be categorized as a "probable human carcinogen."

"Jess,

Since I left the agency with cancer [breast] I have studied the tumor process extensively and I have some mechanism comments which may be very valuable to CARC based on my decades of pathology experience. Glyphosate was originally designed as a chelating agent and I strongly believe that is the identical process involved in tumor formation."

In a 1-page letter Dr Copley makes 14 observations about chelators and/or glyphosate, including that they are endocrine disruptors, suppress the immune system, damage the kidneys or pancreas which can lead to clinical chemistry changes that favor tumor growth; glyphosate kills bacteria in the gut, the gastrointestinal system is 80% of the immune system making the body susceptible to tumors.

She goes on to say: **"It is essentially certain that glyphosate causes cancer."**

Dr Copley ends with the statement: *"I have cancer, and I don't want these serious issues in HED [EPA's Health Effects Division] to go unaddressed before I go to my grave. I have done my duty."*

Marion Copley

March 4, 2013"

Cancer Research UK Statistics for 2014 (former Chairman Michael Pragnell had worked for the pesticides industry): CRUK website said there was little evidence that pesticides caused cancer and blamed lifestyle choices including alcohol

In 2014 in Britain there were 13,605 new cases of NHL (4,801 deaths); 41,265 new cases of bowel cancer (15,903 deaths); 12,523 new cases of kidney cancer (4,421 deaths); 5,550 new cases of liver cancer (5,091 deaths); 5,419 new cases of melanoma (2,459 deaths); 3,404 new cases of thyroid cancer (376 deaths); 10,063 new cases of bladder cancer (5,369 deaths); 9,324 new cases of uterine cancer (2,166 deaths); 7,378 cases of ovarian cancer (4,128 deaths) 9,534 new cases of leukaemia (4,584 deaths); 55,222 new cases of invasive breast cancer (11,433 deaths); 46,690 new cases of prostate cancer (11,287 deaths); 8,919 new cases of oesophageal cancer (7,790 deaths) and 5,501 new cases of myeloma (2,928 deaths); 2,418 new cases of testicular cancer (60 deaths). In the US in 2014 there were 24,050 new cases of myeloma.

An Editorial in the UK journal *The Lancet* was published on 14 October 2017 from the US: The link between cancer and obesity. ¹² It was suspiciously close to the Public Hearing on the Monsanto papers and glyphosate on 11 October 2017

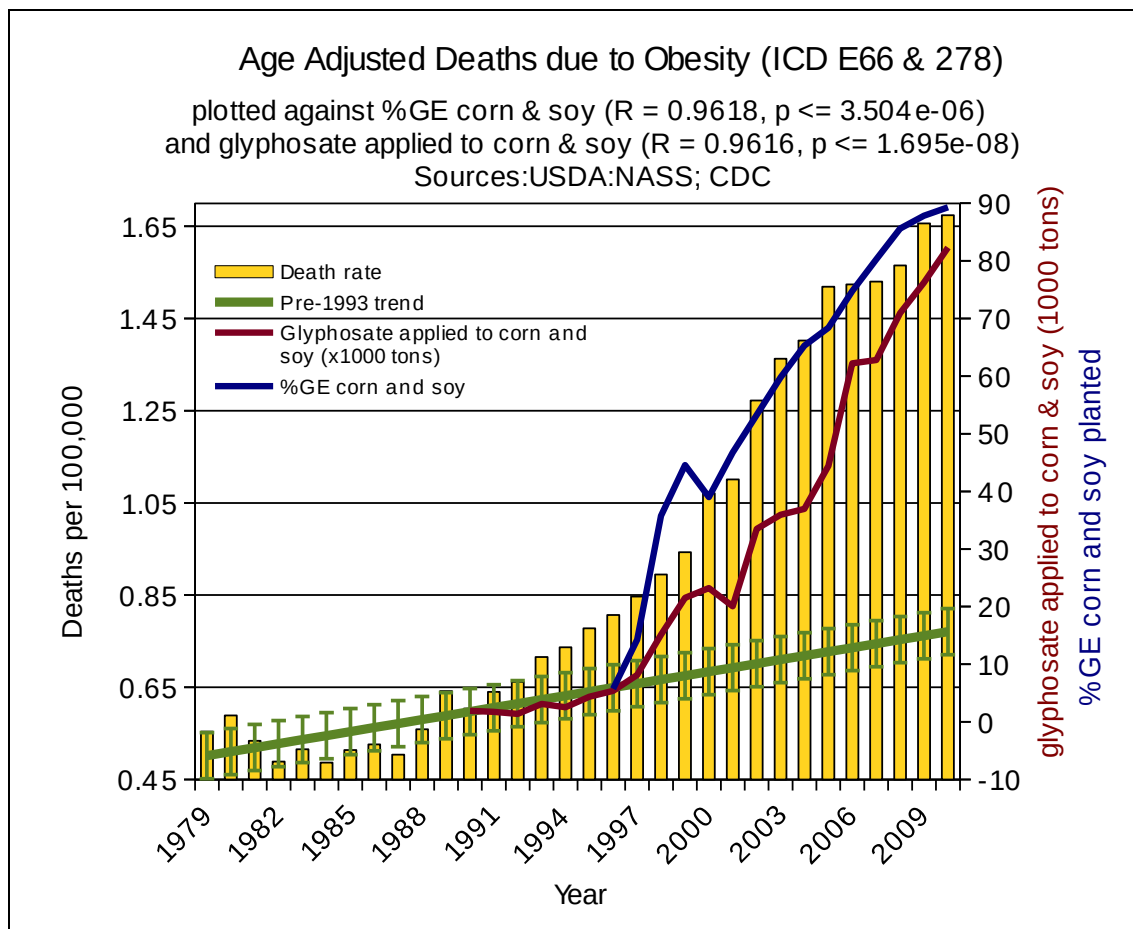
"The US Centers for Disease Control and Prevention released a new report on cancer and obesity last week, highlighting that cancers associated with overweight and obesity, including thyroid, liver, kidney, and ovarian cancer, constitute 40% of cancers diagnosed in

¹¹ <https://www.organicconsumers.org/sites/default/files/marioncopleyletter.pdf>

¹² [http://www.thelancet.com/journals/lanchi/article/PIIS0140-6736\(17\)32659-4/fulltext?dgcid=etoc-edschoice_email_Oct14](http://www.thelancet.com/journals/lanchi/article/PIIS0140-6736(17)32659-4/fulltext?dgcid=etoc-edschoice_email_Oct14)

the USA, with over 630 000 diagnoses in 2014 alone.”

But what is the underlying cause of obesity? The graph below is also from the US Centers for Disease Control and Prevention: **Glyphosate applied to corn and soy.**



Safeguarding human health in the Anthropocene epoch: Report of the Rockefeller Foundation–Lancet Commission on planetary health:¹³ no mention of pesticides

The Rockefeller/Lancet Commission on Planetary Health never mentioned pesticides. According to the Report, the key drivers of ecosystem change in the last 60 years were: “Increases in the amounts of nitrogen and phosphorus entering the environment through agricultural fertiliser run-off and soil erosion.” This is what Defra said in 2011 in the Synthesis of the UK National Ecosystem Assessment:¹⁴ “Major increases in fertiliser use, particularly nitrogen and phosphorus, have adversely affected aquatic ecosystems through runoff.” What about pesticides?

The scientists who contributed to the 56-page RF/Lancet Commission Report failed to mention the serious threats of exposure to the most widespread chemicals in the global environment, glyphosate (an endocrine disruptor) and the systemic neonicotinoid insecticides. Neither of them is routinely measured in the environment by governments or their departments of agriculture. However, there is plenty of evidence that humans and the environment are completely saturated with man-made chemicals.

¹³ <http://www.thelancet.com/commissions/planetary-health>

¹⁴ file:///C:/Users/Rosemary/Downloads/uk_nea_synthesis_report.pdf

Genetically-engineered crops, glyphosate and the deterioration of health in the United States of America. Swanson *et al.*¹⁵

Abstract: A huge increase in the incidence and prevalence of chronic diseases has been reported in the United States (US) over the last 20 years. Similar increases have been seen globally. The herbicide glyphosate was introduced in 1974 and its use is accelerating with the advent of herbicide-tolerant genetically engineered (GE) crops. Evidence is mounting that glyphosate interferes with many metabolic processes in plants and animals and glyphosate residues have been detected in both. Glyphosate disrupts the endocrine system and the balance of gut bacteria, it damages DNA and is a driver of mutations that lead to cancer.

*In the present study, US government databases were searched for GE crop data, glyphosate application data and disease epidemiological data. Correlation analyses were then performed on a total of 22 diseases in these time-series data sets. The Pearson correlation coefficients are highly significant ($< 10^{-5}$) between glyphosate applications and hypertension ($R = 0.923$), stroke ($R = 0.925$), diabetes prevalence ($R = 0.971$), diabetes incidence ($R = 0.935$), **obesity** ($R = 0.962$), lipoprotein metabolism disorder ($R = 0.973$), Alzheimer's ($R = 0.917$), senile dementia ($R = 0.994$), Parkinson's ($R = 0.875$), multiple sclerosis ($R = 0.828$), autism ($R = 0.989$), inflammatory bowel disease ($R = 0.938$), intestinal infections ($R = 0.974$), end stage renal disease ($R = 0.975$), acute kidney failure ($R = 0.978$) cancers of the **thyroid** ($R = 0.988$), **liver** ($R = 0.960$), **bladder** ($R = 0.981$), **pancreas** ($R = 0.918$), **kidney** ($R = 0.973$) and **myeloid leukaemia** ($R = 0.878$).*

*The Pearson correlation coefficients are highly significant ($< 10^{-4}$) between the percentage of GE corn and soy planted in the US and hypertension ($R = 0.961$), stroke ($R = 0.983$), diabetes prevalence ($R = 0.983$), diabetes incidence ($R = 0.955$), **obesity** ($R = 0.962$), lipoprotein metabolism disorder ($R = 0.955$), Alzheimer's ($R = 0.937$), Parkinson's ($R = 0.952$), multiple sclerosis ($R = 0.876$), hepatitis C ($R = 0.946$), end stage renal disease ($R = 0.958$), acute kidney failure ($R = 0.967$), cancers of the **thyroid** ($R = 0.938$), **liver** ($R = 0.911$), **bladder** ($R = 0.945$), **pancreas** ($R = 0.841$), **kidney** ($R = 0.940$) and **myeloid leukaemia** ($R = 0.889$). The significance and strength of the correlations show that the effects of glyphosate and GE crops on human health should be further investigated.*

Birth defects in animals in Montana correlates with glyphosate usage on crops and with birth defects in humans

A recent study by Hoy *et al.* found alarming increases in congenital malformations in wildlife in Montana that Hoy has been documenting for the past 19 years. Similar birth defects have occurred in humans in the USA. Their graphs illustrating human disease patterns over the twelve-year period correlate remarkably well with the rate of glyphosate usage on corn, soy and wheat crops, which has increased due to "Roundup® Ready" crops. While the animals' exposure to the herbicide is through food, water and air, the authors believe that human exposure is predominantly through food, as the majority of the population does not reside near agricultural fields and forests. They conclude: "Our over-reliance on chemicals in agriculture is causing irreparable harm to all beings on this planet, including the planet herself. Most of these chemicals are known to cause illness, and they have likely been causing illnesses for many years. But until recently, the herbicides have never been sprayed directly on food crops, and never in this massive quantity. We must find another way".¹⁶

A lawsuit against Monsanto for misleading labeling on 11 April 2017

¹⁵ http://www.organic-systems.org/journal/92/IOS_Volume-9_Number-2_Nov_2014-Swanson-et-al.pdf

¹⁶ <http://www.esciencecentral.org/journals/the-high-cost-of-pesticides-human-and-animal-diseases-2375-446X-1000132.php?aid=56471>

Washington, DC- Two nonprofit organizations filed a lawsuit against Monsanto for misleading the public by labeling its popular weedkiller Roundup as “*target[ing] an enzyme found in plants but not in people or pets.*” This lawsuit claims this statement is false, deceptive, and misleading, because the enzyme targeted by glyphosate, the active ingredient in Roundup, is, in fact, found in people and pets.

“The unequivocal nature of Monsanto’s label claim on Roundup belies the complexity of human biology and the impact this highly toxic chemical has on the functioning of the human gut bacteria, essential to our health,” said Jay Feldman, Executive Director of Beyond Pesticides. *“With this claim, Monsanto is falsely telling the public that its product cannot hurt them,”* he said.¹⁷

The European Glyphosate Task Force says glyphosate also targets an enzyme found in fungi¹⁸

In 1997, a groundbreaking discovery from Canada was published in *Nature*. Different species of trees in forests communicate underground by a mycelial network of micorrhizal fungal species.¹⁹ It became known as the “*wood wide web.*” The paper was originally published by Dr Suzanne Simard, Professor of Forest Ecology Vancouver, but the presence of mycelial networks has now been confirmed by Agro-forestry Departments around the world. Dr Simard said in 2016: “*The mycelial web, as we later discovered, was integral to the life of the forest.*” It linked trees of different species and warned them of attack by pests and animals.

However, Roundup is used in forests to eradicate invasive weeds and neonicotinoid insecticides are used for treating insect attacks. Prof Jeff L Dangel of North Carolina, Chapel Hill is an expert on plant immune systems. “*Many of these proteins (in plants) fall into a class of proteins that has related members which function in innate animal immunity... Thus activation of plant immune systems is akin to that of animal immune systems where ‘modified self’ can be recognised to trigger an appropriate response...*” This could account for a paper published by Simard and colleagues in Canada and the US in 2017, linking attacks by mountain pine beetle (*Dendroctonus ponderosae*) with a decline in ectomycorrhizal fungi.²⁰

The International Monsanto Tribunal in The Hague with regard to ecocide²¹

The Monsanto Tribunal is an international civil society initiative to hold Monsanto accountable for human rights violations and ecocide. Eminent judges heard testimonies from victims and experts. Then, they delivered a legal opinion following procedures of the International Court of Justice (on April 18th 2017, The Hague). They concluded that Monsanto’s activities have a negative impact on basic human rights. Besides, better regulations are needed to protect the victims of multinational corporations. Eventually, international law should be improved for better protection of the environment and include the crime of ecocide. Now, it is up to us, the civil society, to spread the conclusions of the Monsanto Tribunal and push for these essential changes.

During the hearings that took place on October 15th and 16th in The Hague, **judges** heard testimonies related to **the six questions** posed to the Tribunal. The ensuing legal opinion delivered by the Tribunal includes a legal analysis of the questions asked, with

¹⁷ <https://www.organicconsumers.org/press/non-profits-sue-monsanto-over-misleading-labeling-popular-herbicide-roundup>

¹⁸ <http://www.glyphosate.eu/faq>

¹⁹ <http://www.nature.com/nature/journal/v388/n6642/abs/388579a0.html>

²⁰ Change in soil fungal community structure driven by a decline in ectomycorrhizal fungi following a mountain pine beetle (*Dendroctonus ponderosae*) outbreak.

<https://www.ncbi.nlm.nih.gov/pubmed/27659418>

²¹ <http://www.monsanto-tribunal.org>

respect to both existing international law, and to prospective law in order to improve international human rights and environmental law. The advisory opinion is structured in three parts:

- I.** The introductory section details the conditions within which the Tribunal was initiated.
- II.** The middle section examines the **six questions** posed to the Tribunal. Looking at the broader picture.
- III.** The final section tackles the growing asymmetry between the rights conceded to corporations and the constraints imposed upon them to protect local communities and/or future generations, wherever corporations operate.

Question 6 asked the Tribunal if the activities of Monsanto could constitute a crime of ecocide, understood as causing serious damage or destroying the environment, so as to significantly and durably alter the global commons or ecosystem services upon which certain human groups rely.

Developments in international environmental law confirm the increased awareness of how environmental harm negatively affects the fundamental values of society. Preserving dignity for present and future generations and the integrity of ecosystems is an idea that has gained traction in the international community. As evidence of these developments, and according to the Policy Paper on Case Selection and Prioritisation from September 2016, the **Prosecutor of the International Criminal Court in The Hague wants to give particular consideration to Rome Statute crimes involving the illegal dispossession of land or the destruction of the environment.** However, despite the development of many instruments to protect the environment, a gap remains between legal commitments and the reality of environmental protection... the large-scale use of dangerous agrochemicals in industrial agriculture; and the engineering, production, introduction and release of genetically engineered crops. Severe contamination of plant diversity, soils and waters would also fall within the qualification of ecocide. Finally, the introduction of **persistent organic pollutants such as PCBs** into the environment causing widespread, long-lasting and severe environmental harm and affecting the right of the future generations could fall within the qualification of ecocide as well.

Theo Colborn's crucial research in the early 1990s into endocrine disrupting chemicals (EDCs) that were changing humans and the environment was ignored

The late Theo Colborn²² (1927-1914) was the first to research and write about EDCs, man-made chemicals that became widespread in the environment after WW II. In a book published in 1996, Our Stolen Future: How Man-made Chemicals are Threatening our Fertility, Intelligence and Survival, Colborn, Dumanoski and Peters revealed the full horror of what was happening to the world as a result of contamination with EDCs.²³ There was emerging scientific research about how a wide range of man-made chemicals disrupt delicate hormone systems in humans. These systems play a critical role in processes ranging from human sexual development to behaviour, intelligence, and the functioning of the immune system. At that stage, polychlorinated biphenyls (PCBs), pesticides DDT, chlordane, lindane, aldrin, dieldrin, endrin, toxaphene, heptachlor, dioxin, atrazine and dacthal were identified as EDCs. Colborn illustrates the problem by constructing a diagram (page 105) of the journey of a PCB molecule from a factory in Alabama into a polar bear in the Arctic. Colborn says: *"The concentration of persistent chemicals can be magnified millions of times as they travel to the ends of the earth...Many*

²² <http://endocrinedisruption.org/about-tedx/theo-colborn>

²³ *Our Stolen Future: How Man-made Chemicals are Threatening our Fertility, Intelligence and Survival*: Colborn, Myers and Dumanoski: Little, Brown and Company, New York. 1996.

chemicals that threaten the next generation have found their way into our bodies. There is no safe, uncontaminated place."

Monsanto's toxic waste (including PCBs) dumped at sites throughout Wales

When polychlorinated biphenyls were banned in the US for causing ill health in Anniston, Alabama, the UK Tory Government led by Ted Heath agreed to ramp up production in a Monsanto-owned factory in Wales in 1971. Alabama is more than 50 million square miles: Wales is 8,000 square miles.

A Monsanto-owned factory was built in Newport in 1949. They paid contractors to illegally dump 67 chemicals such as PCBs, dioxins and Agent Orange derivatives between 1965 and 1972: Brofiscin Quarry, one of the most contaminated places in Britain, is polluting Cardiff.²⁴ According to engineering company WS Atkins, in a report prepared for the agency and the local authority in 2005 **but never made public**, the site contains at least 67 toxic chemicals. Seven PCBs have been identified, along with vinyl chlorides and naphthalene. The unlined quarry is still leaking, the report says. "*Pollution of water has been occurring since the 1970s, the waste and groundwater has been shown to contain significant quantities of poisonous, noxious and polluting material, pollution of ... waters will continue to occur.*"

Hinkley Point radioactive mud will be dumped close to Cardiff Report 14/10/2017
*More than 300,000 tonnes of "radioactive" mud, some of it the toxic byproduct of Britain's atomic weapons programme, will be dredged to make way for England's newest nuclear power station and dumped in the Severn estuary just over a mile from Cardiff.*²⁵

Biological deserts are created where Monsanto and DuPont's GM crops grow

The USDA and the USDA ARS (Agricultural Research Service) must have noticed this. Craig Childs confirms that in his book Apocalyptic Planet: Field Guide to the Future of the Earth.²⁶ The State of Iowa was just one area in which the US Geological Survey reported widespread contamination of soil, air, rainwater and river water with glyphosate and its longer-acting metabolite AMPA (α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid).²⁷

Grundy County Iowa was where Craig Childs spent a long weekend in a monoculture of GM "Roundup® Ready" corn looking for wildlife. "*I listened and heard nothing, no bird, no click of insect. Mr Owen was the farmer who had given us permission to backpack across his cornfields. He grew a combination of DuPont and Monsanto stock. We were in DuPont now. It didn't look any different to me.*"

Robert Krulwich blog:²⁸

Corn farmers champion corn. Anything that might eat corn, hurt corn, bother corn, is killed. Their corn is bred to fight pests. The ground is sprayed. The stalks are sprayed again. So, Craig wondered, "What will I find?" The answer amazed me. He found almost nothing. There were no bees. The air, the ground, seemed vacant. He found one ant "so small you couldn't pin it to a specimen board." A little later, crawling to a different row, he found one mushroom, "the size of an apple seed." Then, later, a cobweb spider eating a crane fly (only one). A single red mite "the size of a dust mote hurrying across the barren

²⁴

http://www.theecologist.org/The_Brofiscin_Monsanto_Files/777777/burying_the_truth_the_organal_ecologist_investigation_into_monsanto_and_brofiscin_quarry.html

²⁵ <https://www.theguardian.com/uk-news/2017/oct/14/hinkley-point-radioactive-mud-dumped-cardiff-severn-estuary>

²⁶ <http://houseofrain.com/bookdetail.cfm?id=1344621970977>

²⁷ <http://onlinelibrary.wiley.com/doi/10.1111/jawr.12159/abstract>

²⁸ <http://www.npr.org/sections/krulwich/2012/11/29/166156242/cornstalks-everywhere-but-nothing-else-not-even-a-bee>

earth," some grasshoppers, and that's it." Though he crawled and crawled, he found nothing else. "It felt like another planet entirely," he said, a world denuded.

One hundred years ago there was a rich biodiversity of species in the US

Krulwich continues: "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. We need to feed our planet, of course. But we also need the teeny creatures that drive all life on earth. 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."

The Monsanto Tribunal provided an update on 26 September 2017²⁹

"The license for glyphosate, active ingredient of Roundup, is expiring in the EU and it has created a huge discussion. Over 1.3 million EU citizens have signed an *official request* to ban glyphosate, to reform the pesticide approval procedure, and to set EU-wide mandatory reduction targets for pesticide use. In the discussion it has become clear that the report by Food Authority EFSA – based on a report by the German regulatory agency BfR – is not independent and relies heavily on studies by Monsanto and other large companies. The report even *copied part of the text from a Monsanto study*. On the 11th of October there will be an official hearing in the EU Parliament. Monsanto has been invited but will not show up, nor will BfR. Soon the EU member states will have to cast their vote for the final decision. One of the largest, France, has previously announced it would vote against the renewal of the license for glyphosate."

Monsanto has been barred from the EU³⁰

Monsanto lobbyists have been banned from entering the European parliament after the multinational refused to attend a parliamentary hearing into allegations of regulatory interference. It is the first time that MEPs have used *new rules* to withdraw parliamentary access for firms that ignore a summons to attend parliamentary inquiries or hearings. Monsanto officials will now be unable to meet MEPs, attend committee meetings or use digital resources on parliament premises in Brussels or Strasbourg.

UN Rapporteur: Report of the Special Rapporteur on the right to food: Pesticides are "global human rights concern" and UN experts urge new treaty

The United Nations received a *report* by the Special Rapporteur on the right to food, presented to the United Nations Human Rights Council, focused more narrowly on agricultural chemicals. The UN report states unequivocally that the storyline perpetuated by companies like Monsanto—the one that says we need pesticides to feed the world—is a myth. The Report presented to the UN human rights council on 08/03/2017, is severely critical of the global corporations that manufacture pesticides, accusing them of the "systematic denial of harms", "aggressive, unethical marketing tactics" and heavy lobbying of governments which has "obstructed reforms and paralysed global pesticide restrictions".³¹

²⁹ http://en.monsantotribunal.org/main.php?obj_id=462530790

³⁰ <https://www.theguardian.com/environment/2017/sep/28/monsanto-banned-from-european-parliament>

³¹ <http://www.pan-uk.org/site/wp-content/uploads/United-Nations-Report-of-the-Special-Rapporteur-on-the-right-to-food.pdf>

GENEVA (7 March 2017) – Two United Nations experts are calling for a comprehensive new global treaty to regulate and phase out the use of dangerous pesticides in farming, and move towards sustainable agricultural practices. They say: *“excessive use of pesticides are very dangerous to human health, to the environment and it is misleading to claim they are vital to ensuring food security.”* Chronic exposure to pesticides has been linked to cancer, Alzheimer’s and Parkinson’s diseases, hormone disruption, developmental disorders and sterility. Farmers and agricultural workers, communities living near plantations, indigenous communities and pregnant women and children are particularly vulnerable to pesticide exposure and require special protections. The experts warn that certain pesticides can persist in the environment for decades and pose a threat to the entire ecological system on which food production depends. The excessive use of pesticides contaminates soil and water sources, causing loss of biodiversity, destroying the natural enemies of pests, and reducing the nutritional value of food. The impact of such overuse also imposes staggering costs on national economies around the world.

The experts say the use of neonicotinoid pesticides is particularly worrying because they are accused of being responsible for a systematic collapse in the number of bees around the world. **For example, heavy use of these insecticides has been blamed for the 50 per cent decline over 25 years in honeybee populations in both the United States and the United Kingdom of Great Britain and Northern Ireland.** Such a collapse, they say, threatens the very basis of agriculture as 71% of crop species are bee-pollinated.

Global contamination of honey by neonicotinoid insecticides³²

05/10/2017: “We assessed the global exposure of pollinators to neonicotinoids by analyzing 198 honey samples from across the world. We found at least one of five tested compounds (acetamiprid, clothianidin, imidacloprid, thiacloprid, and thiamethoxam) in 75% of all samples, 45% of samples contained two or more of these compounds, and 10% contained four or five. Our results confirm the exposure of bees to neonicotinoids in their food throughout the world.”

Contamination rates were highest in North America with 86% of samples containing one or more neonicotinoid, followed by Asia (80%) and Europe (79%). It was lowest in South America at 57%. Almost half the samples contained a cocktail of the insecticides. *“The striking finding is that 75% of our samples had measurable quantities,”* said Prof Edward Mitchell at the University of Neuchâtel. *“That was surprising to us, since our coverage included many remote areas, including oceanic islands.”*

UK figures released in October 2017 reveal that since the neonicotinoids have been banned oil-seed rape harvests have been the best in 4 years³³

Oilseed rape yields this year are at their highest ever levels, only twice before has the average yield reached 3.9 tonnes per hectare – in 2011 and 2015, new figures released today reveal.

Don’t pollute my future! The impact of the environment on children’s health

A Report by the World Health Organization published in March 2017. This [report](#) focused on a range of environmental risks, the cost of a polluted environment adds up to the deaths of 1.7 million children every year. ³⁴

Monsanto Isn’t Feeding the World—It’s Killing Our Children³⁵

³² http://www.sciencemagazinedigital.org/sciencemagazine/06_october_2017?pg=111#pg111

³³ <https://www.buglife.org.uk/news-%26-events/news/oil-seed-rape-crop-yields-above-average>

³⁴ <http://www.who.int/ceh/publications/don-t-pollute-my-future/en/>

Katherine Paul Organic Consumers Association: (Ronnie Cummins International Director was on the Steering Committee of the Monsanto Tribunal) 09/03/2017. *“Two new reports published in recent weeks add to the already large and convincing body of evidence, accumulated over more than half a century, that agricultural pesticides and other toxic chemicals are poisoning us. Both reports issue scathing indictments of U.S. and global regulatory systems that collude with chemical companies to hide the truth from the public, while they fill their coffers with ill-gotten profits.”*

No Brainer: The impact of chemicals on children’s brain development: a cause for concern and a need for action³⁶

Extract from CHEMTrust Report March 2017: *“Normal brain development is the result of an undisturbed harmonious interaction among cells, and between cells and hormones. Hormones play an important role in cell migration and differentiation, neuron-to-neuron communication and growth. Experts in brain development state that “the prenatal brain develops under the influence of an ever-changing hormonal milieu” with inputs arising from the foetal, placental and maternal compartments. However, external substances can interfere with the normal function of hormones. Endocrine disrupting chemicals (EDCs) are examples of substances that can alter this delicate balance, and as thyroid hormones play a vital role in brain development, thyroid disrupting chemicals are of particular concern. Pregnancy, childhood and adolescence are periods of brain development that are considered critically sensitive to toxic chemicals. Rapid changes occurring during these life-stages render a child highly susceptible to environmental chemicals, with even small exposures at the wrong time altering the brain’s developmental programming signals in an irreversible way. Impaired brain development may result in a broad range of human health effects: from altered reproduction, metabolism and stress response, to mental retardation and subtle, subclinical intellectual deficiencies.*

The Poison Papers Expose Decades of Collusion between Industry and Regulators over Hazardous Pesticides and Other Chemicals

Center for Media and Democracy

“The Bioscience Resource Project and the Center for Media and Democracy today are releasing a trove of rediscovered and newly digitized chemical industry and regulatory agency documents stretching back to the 1920s. The documents are available at PoisonPapers.org.

Together, the papers show that both industry and regulators understood the extraordinary toxicity of many chemical products and worked together to conceal this information from the public and the press. These papers will transform our understanding of the hazards posed by certain chemicals on the market and the fraudulence of some of the regulatory processes relied upon to protect human health and the environment.”

Evaggelos Vallianatos worked for the US EPA for 25 years and became a whistleblower. He wrote ‘Poison Spring; the Secret History of Pollution and the EPA’ in 2014³⁷

Here he writes in the US Huffington Post about the poisoning of honey bees with chemical and biological weapons:³⁸ *“Despite this magnificent and tangible gift of bees:*

³⁵ <https://www.organicconsumers.org/blog/monsanto-isn%E2%80%99t-feeding-world%E2%80%94it%E2%80%99s-killing-our-children>

³⁶ <http://www.chemtrust.org.uk/wp-content/uploads/chemtrust-nobrainier-mar17.pdf>

³⁷ <https://www.independentsciencenews.org/health/poison-spring-the-secret-history-of-pollution-and-the-epa/>

³⁸ http://www.huffingtonpost.com/entry/toxic-morality-is-killing-honeybees_us_593c867fe4b0b65670e56b21

boosting our food and a healthy and a beautiful natural world teeming with wild flowers, we return the kindness with warfare. Morally bankrupt governments, regulatory agencies, and farmers have been poisoning honeybees for decades. These “farmers” claim to be following science-based agricultural practices.

But what kind of “science” would be blessing farmers spraying their crops with chemicals, which in reality are chemical and biological weapons? If this surprises you, let me assure you that most pesticides are relatives of chemical warfare agents. A weed killer like glyphosate (roundup) devastates life in the soil, killing the bacteria that make the crops healthy and enhances the power of the bad bacteria giving disease to crops.

But the chemicals that cause outright destruction to honeybees are the so-called neonicotinoids, products of the giant German company Bayer. Neonicotinoids or neonics are terrible nerve and brain poisons. They decimate honeybees.

You may rightly ask what kind of governments and their agents allow such silent but persistent warfare to go on down at the farm?

These governments are usually elected “democratic” governments just like our government in the United States. These governments follow a long tradition in supporting farming depended on chemicals. The habit of farmers spraying their crops is so well established that governments, universities and international organizations proclaim chemical farming to the world as the product of science, modernity, and advanced technology. But they remain silent on the unexpected effects of the chemicals that make modern industrialized farming possible.

This mentality of showing only one part of the farm story but hiding the deleterious effects of chemical agriculture dominates environmental and public health “protection” in both America, Europe and the rest of the world in 2017. Under the name of science, agribusiness, universities and governments have been hiding the human health effects of contaminated food and drinking water, much less dead honeybees.

This blatant deception causes no moral anxieties to most scientists and decision makers because these scientists and politicians and regulators have almost lost their sense of right and wrong.”

Evangelos Vallianatos also wrote about annihilation of the natural world³⁹

“At home, factory farming and its sprays and genetic engineering of crops are altering the very nature of our food and agriculture. Giant companies are converting rural America to their private fiefdom. Where is a bird, monarch butterfly or honeybee supposed to find food when thousands upon thousands of acres of land are growing bioengineered corn or soybeans and poisons flood the land?

Gerardo Ceballos (National Autonomous University of Mexico), Paul R. Ehrlich and Rodolfo Dirzo (Stanford University), distinguished biologists, speak of a severe sixth mass extinction wiping out countless vertebrate animals (mammals, birds, reptiles, and amphibians) and plants. Indeed, they emphasize the seriousness of the destruction of animals going on all over the world by speaking about the population extinction pulse, that is, biological annihilations of vertebrate animals caused by human activities. These economic activities include taking forests and land away from animals for plantations and fracking the land for petroleum and natural gas and for golf courses and mega cities; overexploitation of land, forests, mountains, deserts; overfishing the seas; ceaseless poisoning of the environment. Disease, human overpopulation, continuing population growth, overconsumption, particularly by the rich, and a probable “large-scale nuclear war” also threaten the natural world.

These scientists warn that planetary destruction of vertebrate animals “will itself promote cascading catastrophic effects on ecosystems, worsening the annihilation of nature... while the biosphere is undergoing mass species extinction, it is also being ravaged by a much

³⁹ http://www.huffingtonpost.com/entry/annihilating-the-natural-world_us_596a9443e4b022bb9372b23a

more serious and rapid wave of population declines and extinctions.... Humanity will eventually pay a very high price for the decimation of the only assemblage of life that we know of in the universe."

Evaggelos Vallianatos on The Swamp, the US lab that did fraudulent testing⁴⁰

"It happened in a series of large facilities known as Industrial Biotest (IBT) headquartered in Northbrook, Illinois. The time IBT did its dirty work covered most of the years from the 1950s to the 1970s. But testing pesticides and other chemicals at IBT was primarily a fraudulent affair. The lab had the appearance of a scientific testing facility. In fact, it was a swamp of filth and corruption. It had nothing to do with science. The animals were the front. The scientists were the props.

The animals ate feed poisoned by the chemical seeking government approval. However, it did not matter what the poisoned food did to the animals. The technicians-scientists doing the testing simply trashed the animals that developed tumors, cancer, or other disease. Then the technicians speeded up the execution of the studies by making up data. That's how IBT worked.

The pathologist who spilled the beans was Adrian Gross. In 1976, Gross made an inspection and uncovered the giant lab was a giant factory of fraud. Gross worked for the US Drug and Food Administration. In 1979, he joined the US Environmental Protection Agency where I also worked. For several years Gross and I were good friends and colleagues. We talked extensively about IBT.

Gross had no doubt the managers of IBT were criminals. Their sole interest was in writing fancy reports of how benign the "tested" chemicals were.

For example, Monsanto's best-selling weed killer glyphosate came out of the IBT swamp. This is something I did not know while serving at EPA. I learned about it from a stream of Monsanto documents that saw the light of the day because so many people have been suing Monsanto for cancer from exposure to glyphosate.

In March 17, 2015, William F. Heydens, a Monsanto scientist, sent an email to his colleague Josh Monken in which he said roundup had "low" levels of carcinogenic formaldehyde and carcinogenic N-nitroso compounds. In addition, Heydens said, "Many tox[icological] studies for glyphosate had been done at a lab (IBT – Industrial Biotest) that FDA / EPA found to generate fraudulent data back in the 1970s." Monsanto has been making so much money from glyphosate that it has become paranoid and immoral in its defense of glyphosate. Yet, lucidity sometimes prevails and the truth comes out.

*It happened in November 22, 2003. In an email to a colleague, a Monsanto toxicologist, Donna R. Farmer, said: "**you cannot say that Roundup is not a carcinogen.**"*

She is right. Roundup is a carcinogen. It includes glyphosate, carcinogens like formaldehyde, and other chemicals, some of which may be more toxic than the IBT-tested glyphosate. The pesticides law classifies these toxic materials as "inerts."

Drain the swamp — now. No more deception, cover-up and collusion.

Monsanto exposed: the Monsanto Papers continued⁴¹

*Over 2017 an incredible number of secret documents from various industries and companies were made public. In March 2017, an American Judge ruled – over Monsanto's objections – that certain **internal documents** could be unsealed in the frame the multidistrict litigation glyphosate cancer case. Observers were quick to rename these documents the 'Monsanto Papers'. Four months later, a **new batch** of company records was released. Attorneys for Baum Hedlund who were leading the lawsuit against Monsanto for Roundup causing cancers issued an unprecedented statement.⁴²*

⁴⁰ http://www.huffingtonpost.com/entry/the-swamp_us_5984c3bde4b00833d1de27c4

⁴¹ <https://usrtk.org/pesticides/mdl-monsanto-glyphosate-cancer-case-key-documents-analysis/>

⁴² <https://www.alternet.org/environment/just-released-docs-show-monsanto-executives-colluding-corrupted-epa-officials-manipulate>

"It was important to release the documents now because they not only pertain to the ongoing litigation, but also to larger issues of public health and safety, while shedding light on corporate influence over regulatory bodies," according to Baum Hedlund attorneys Brent Wisner and Pedram Esfandiary. "This is a look behind the curtain," said Wisner. "These show that Monsanto has deliberately been stopping studies that look bad for them, ghostwriting literature and engaging in a whole host of corporate malfeasance. They [Monsanto] have been telling everybody that these products are safe because regulators have said they are safe, but it turns out that Monsanto has been in bed with U.S. regulators while misleading European regulators."

One of the Court Documents released was an email from Donna Farmer, Monsanto Senior Toxicologist: *"The terms glyphosate and Roundup cannot be used interchangeably nor can you use "Roundup" for all glyphosate-based herbicides any more. For example you cannot say that Roundup is not a carcinogen...**we have not done the necessary testing on the formulation to make that statement.**"*

Robert F. Kennedy, Jr., another of the plaintiffs' attorneys said, *"This trove marks a turning point in Monsanto's corporate life. They show Monsanto executives colluding with corrupted EPA officials to manipulate and bury scientific data to kill studies when preliminary data threatened Monsanto's commercial ambitions, bribing scientists and ghostwriting their publications, and purchasing peer review to conceal information about Roundup's carcinogenicity, its toxicity, its rapid absorption by the human body, and its horrendous risks to public health and the environment."*

Plaintiffs are also suing for other cancers that have been linked to Roundup

Lawyers of the US firm Baum, Hedlund stated: A number of [Roundup cancer studies](#) have found evidence linking the weed killer's main ingredient, glyphosate, to serious side effects.⁴³ The most serious Roundup side effects include:

- [Non-Hodgkin Lymphoma](#)
- Bone Cancer
- Colon Cancer
- Kidney Cancer
- Liver Cancer
- Melanoma
- Pancreatic Cancer
- Thyroid Cancer

European Legislation was set up for the benefit of the agrochemical industry: exchanges between Monsanto Europe and the Health Commissioner confirm this Monsanto Europe replied to Health Commissioner Andriukaitis on 04/04/2016 to say that the 24 Glyphosate Task Force GTF members were prepared to grant very limited access to the data.⁴⁴

From this very revealing letter we learn that the current EU legislation is set up to *"protect intellectual property and confidential information from public disclosure...All confidential data ...shall be deleted or redacted (Regulation 1107/2009, Article 63)." Much of the industry data submitted to the German Rapporteur Member State was redacted.*

⁴³ <https://www.baumhedlundlaw.com/toxic-tort-law/monsanto-roundup-lawsuit/monsanto-secret-documents/>

⁴⁴

<https://dl.dropboxusercontent.com/u/6366131/letter%20to%20Commissioner%20Andriukaitis.pdf>

The European Parliament has no legislative function in the approvals process

According to the European Glyphosate Task Force, the renewal process is legislated for by means of a Commission Regulation (No. 1107/2009). Therefore, the European Parliament has no legislative function within the framework of the approval process.⁴⁵ However, Baum Hedlund sent the *Monsanto Papers* to four members of the European Parliament after their request for advice.⁴⁶

European Commissioner for Health Vytenis Andriukaitis tried to renew the license for glyphosate BEFORE the discussion on the Monsanto Papers

This was on the grounds that on 06/03/2017 glyphosate had not been classified as a carcinogen by the European Chemicals Agency.

Criminal corruption by the European Pesticide Regulators

Two consecutive Heads of Unit of Pesticides and Biocides, European Commission do not have “*appropriate degrees of specialist knowledge and technical expertise*,” as specified in the EC regulations.⁴⁷ Michael Flüh admitted to being a non-scientist. When he departed in the middle of the glyphosate reassessment, Klaus Berend from ECHA was appointed to replace him. He is an expert on plastics in aviation.

Article 4 Role of Heads of Units

“The role of heads of unit is regarded as particularly important. They shall possess specific management (i.e. work organisation, people management and, where relevant, financial resources management) competencies and an appropriate degree of specialist knowledge and technical expertise.”

Glyphosate not classified as a carcinogen by the European Chemicals Agency⁴⁸

ECHA's Committee for Risk Assessment (RAC) agrees to maintain the current harmonised classification of glyphosate as a substance causing serious eye damage and being toxic to aquatic life with long-lasting effects. RAC concluded that the available scientific evidence did not meet the criteria to classify glyphosate as a carcinogen, as a mutagen or as toxic for reproduction.

In response to an email, Jack de Bruijn, in charge of risk assessment, explained that ECHA's role is in the labelling and classification of chemicals. “*We only look at the hazardous properties of a chemical*,” he said, “*not at the risks that occur when you use a chemical.*” Executive Director Geert Dancet told me ECHA only assesses the active ingredient glyphosate, not formulated products such as Roundup.

On 06/03/2017 Greenpeace and 18 NGOs had written an Open Letter to Geert Dancet about transparency and independence of the Risk Assessment Committee; in particular that of the Chair Tim Bowmer who had previously worked for various chemical lobbying organisations and was appointed as Chair when he joined ECHA.⁴⁹

Monsanto's sealed secret studies obtained under FOI from the US EPA

Samsel and Seneff wrote paper IV on Glyphosate: Glyphosate, pathways to modern diseases IV: cancer and related pathologies⁵⁰ and concluded that: “*significant evidence of tumours was found during these investigations*”. Ridley and Mirly (1988) (for Monsanto)

⁴⁵ http://www.glyphosate.eu/system/files/sidebox-files/renewal_process_for_glyphosate_faqs_0.pdf

⁴⁶ <https://usrtk.org/wp-content/uploads/2017/08/Exhibit-Letter-from-plaintiffs-attorneys-to-European-Parliament.pdf>

⁴⁷ https://ec.europa.eu/info/sites/info/files/european-commission-decision-on-middle-management-staff_3288_c_2016_en.pdf

⁴⁸ <https://echa.europa.eu/-/glyphosate-not-classified-as-a-carcinogen-by-echa>

⁴⁹ http://www.greenpeace.org/eu-unit/Global/eu-unit/reports-briefings/2017/20170306_Open_Letter_ECHA_CoI_Concerns.pdf

⁵⁰ <http://www.amsi.ge/jbpc/31515/11SA15R.pdf>

found bioaccumulation of ^{14}C labelled glyphosate in Sprague Dawley rat tissues. Residues were present in bone, marrow, blood and glands including the thyroid, testes and ovaries, as well as major organs, including the heart, liver, lungs, kidneys, spleen and stomach (Table 11 Page 127). The eye is included in this list. Table 8 Page 126): Incidence and occurrence of ophthalmic degenerative lens changes by glyphosate. Table 9 Page 126: Data on unilateral and bilateral cataracts (all types) and Y-suture opacities, excluding “prominent Y suture”, following glyphosate exposure to rats. Stout & Rueker (1990) commissioned for Monsanto.

A Senior Monsanto scientist had claimed that glyphosate didn’t accumulate but was excreted unchanged from the body⁵¹ and referred back to the glyphosate re-assessment in Europe in 2002. However, Monsanto’s secret studies had revealed otherwise.

Samsel gave Testimony to the California Environmental Protection Agency

*“There are no safe levels of glyphosate. Glyphosate is a synthetic amino acid and analogue of our canonical amino acid glycine and participates in plant and animal biology. One microgram of glyphosate technical acid (N-phosphonomethyl glycine) contains 3.561 trillion molecules each capable of integrating with a protein altering shape, folding and function. I am a US scientist and hazardous chemicals materials consultant and expert on the subject of Glyphosate. I am one of few people to have received all of the Monsanto’s trade secret sealed studies on glyphosate from the US EPA. The federal agency supplied these documents in excess of 100,000 pages to me under the FOIA with special consideration for my research into this chemical. I now have six peer-reviewed papers on the subject of glyphosate and several more papers on the glyphosate in progress, a short list to some of these studies links are appended. The full series of peer-reviewed glyphosate papers may be found at ResearchGate in the author file under Anthony Samsel. Babies and young children are now stricken with cancers and these have not a chance at a normal life, with many not cured but extinguished. Something is causing these maladies and I suspect N-nitrosamines of glyphosate may be to blame. This is not chronic long-term exposure. I strongly believe that long-term exposure is not necessary for the induction of cancer.”*⁵² He has found glyphosate residues present in vaccines, baby milk formulations, pet foods and rat feeds for experimental purposes.

“I call on the California Environmental Protection Agency to immediately ban the chemical glyphosate based on the latest scientific research conducted here in the USA. Glyphosate has recently been found to integrate with structural proteins as well as animal i.e. human enzymes that include digestive enzymes pepsin, trypsin and lipase as well as lysozyme.”

WHO Report 2016 on the increase in cataracts and eye damage

Annual rates of admission for cataract surgery in England rose 10-fold from 1968 to 2004: from 62 episodes per 100,000 population in 1968 to 637 in 2004.⁵³ A 2016 study by the WHO also confirmed that the incidence of cataracts had greatly increased:⁵⁴ In ‘A global assessment of the burden of disease from environmental risks’ it says that cataracts are the leading cause of blindness worldwide. Globally, cataracts are responsible for 51% of blindness – an estimated 20 million individuals suffer from this degenerative eye disease.

⁵¹ <https://gmoanswers.com/ask/hi-does-senior-monsanto-scientist-dan-goldstein-still-maintain-if-ingested-glyphosate-excreted>

⁵² https://oehha.ca.gov/media/dockets/8594/8767-anthony_samsel/letter_ca_epa_june_32017_draft.pdf

⁵³ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955650/>

⁵⁴ http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf

Corruption in the Joint FAO/WHO/JMPR meeting on Pesticide Residues

In 1994 the Joint FAO/WHO/JMPR Panel had granted increased Maximum Residue Levels (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).⁵⁵

In 2016 the Joint FAO/WHO/JMPR meeting on Pesticide Residues ruled that glyphosate was probably not carcinogenic to humans

The following report was from *Guardian* journalist Arthur Neslen.⁵⁶ “A UN panel that on Tuesday ruled that glyphosate was [probably not carcinogenic to humans](#) has now become embroiled in a bitter row about potential conflicts of interests. It has emerged that an institute co-run by the chairman of the UN’s joint meeting on pesticide residues (JMPR) received a six-figure donation from Monsanto, which uses the substance as a core ingredient in its bestselling Roundup weed-killer. [Professor Alan Boobis](#), who chaired the UN’s [joint FAO/WHO meeting](#) on glyphosate, also works as the vice-president of the International Life Science Institute (ILSI) Europe. The co-chair of the sessions was Professor Angelo Moretto, [a board member](#) of ILSI’s Health and Environmental Services Institute, and of its [Risk21 steering group](#) too, which Boobis also co-chairs. In 2012, the ILSI group took a \$500,000 (£344,234) donation from Monsanto and a \$528,500 donation from the industry group CropLife International, which represents [Monsanto, Dow, Syngenta and others](#), according to [documents obtained by the US right to know campaign](#).”

In 2002 Professor Alan Boobis was also Chairman of the UN’s JMPR meeting on pesticide residues when glyphosate was last reassessed. The Panel said glyphosate wasn’t a carcinogen, a mutagen or a teratogen.⁵⁷ Prof Boobis is current Chairman of the UK Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT), which is alleged to be an independent scientific body.

ILSI formerly described as “key partner for European industry” but changed

Not long ago ILSI described itself as a “key partner for European industry” but it now says that it is a “non-profit guided by scientific and environmental concerns” and that it [does not lobby](#) or make policy recommendations.

This new description of ILSI was endorsed by Dr Philippe Verger, Department of Food Safety and Zoonoses, WHO. He is also secretary of the UN panel on glyphosate. He said that ILSI could best be called a “meeting place” for scientific discussions.

Verger told the *Guardian*: “ILSI is not an independent body. That is very clear. Private companies are supporting it and its structure. But the objective of ILSI and of the companies is to create a space for discussion and interaction between the private and public sectors. *ILSI’s focus is not to discuss topics of economic interest for individual companies. It is more of a forum.*”

I challenged Dr Verger about his mathematics on a slide for the members of the JMPR who signed to say that glyphosate was not a carcinogen in September 2016. The list also contained the names of members who had applied to be on the list for 2017 but hadn’t yet been accepted. I said: “V. Lenters and S. Cordier are not there and MacLachlan represents the FAO.” I asked him: “Can you confirm that those who had applied to be on the roster for 2017⁵⁸ were also present at the September 2016 meeting?”

⁵⁵

http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/JMPR/Evaluation94/glyphos.pdf

⁵⁶ <https://www.theguardian.com/environment/2016/may/17/unwho-panel-in-conflict-of-interest-row-over-glyphosates-cancer-risk>

⁵⁷ http://whqlibdoc.who.int/publications/2006/9241665203_eng.pdf?ua=1

⁵⁸ http://www.who.int/foodsafety/areas_work/chemical-risks/JMPR-roster-2017.pdf?ua=1

Dr Verger failed to respond directly to my question. Instead he said: “Six experts contributed to the drafting of the monograph on glyphosate but the JMPR also re-evaluated 2 other pesticides namely diazinon and malathion. In my slideshow I acknowledge the whole JMPR as all the experts adopted the report for the 3 compounds.” The explanation was bald and unconvincing.

Dr Philippe Verger was first author of a paper with Professor Boobis in 2013:⁵⁹

Reevaluate Pesticides for Food Security and Safety

Summary: *With global population projected to increase above 9 billion by 2050, food security—the availability of food and one's access to it—is increasingly important (1). Crop-protection products can help reduce yield losses caused by pests, pathogens, and weeds to help feed the world's population sustainably. Given potential harm for human health and the environment, regulation of pesticide use in agriculture has been controversial.*

Previous studies and findings by independent experts

The All-Party Parliamentary Group (APPG) on Agroecology met in the Houses of Parliament in London on June 18, 2014: no UK corporate media reported on it⁶⁰

They discussed the harm caused by the world's most popular herbicide – Roundup®.

People from all round the world met to listen to four experts. Full presentations from the APPG Agro-ecology meeting in London are on the following links: Dr Don Huber,⁶¹ Professor Malcolm Hooper,⁶² Dr John Peterson Myers,⁶³ Dr Michael Antoniou.⁶⁴

The first expert to speak was Dr Don Huber, Plant scientist, Emeritus Professor Purdue University. He produced two crucial slides of facts about glyphosate.

One was a picture of an octopus: each arm is used to describe the multiple actions of the biocide glyphosate: Mineral chelating agent (previously used for cleaning boilers) ‘grabbing’ minerals such as Boron, Ca, Co, Cu, Fe, K, Mg, Mn, Ni and Zn that are essential to metabolic processes and absorption of amino acids; Growth regulator; Antibiotic; Herbicide; Toxicant; Virulence enhancer; Organic phosphonate; Persistent in the environment.

The second was the epidemic of diseases in the US that have increased between 1995 and 2011 and are linked to glyphosate: the incidence of the same diseases has increased in the UK over that time.

Alzheimer's disease, Dementia, Autism, ADHD Bipolar, Diabetes (Type 2) Multiple sclerosis, Motor-neurone Disease, Obesity, Stroke, Hypertension, Cataracts & eye diseases, Inflammatory bowel disease, Birth defects, Colitis, Crohn's disease Hypercholesterolaemia, Allergies, asthma, Atopic dermatitis, Miscarriage/ infertility, Renal disease/failure, Liver abnormalities, Coeliac disease, Gluten intolerance, Pancreatic abnormalities, Autoimmune diseases, Arthritis and **cancers**.

The history of agriculture in Britain controlled by the chemical industry

The fate of the British people was sealed as long ago as 1843 when a philanthropist and

⁵⁹ <http://science.sciencemag.org/content/341/6147/717>

⁶⁰ <http://sustainablepulse.com/2014/07/02/uk-parliamentary-meeting-brings-dangers-roundup-public-focus/#.WdJr9xSFDzI>

⁶¹ [Dr. Don M. Huber – Professor Emeritus of Plant Pathology at Purdue University](#)

⁶² [Professor Malcolm Hooper – Professor of Medicinal Chemistry at the University of Sunderland](#)

⁶³ [Dr. John Peterson “Pete” Myers – Founder, CEO and Chief Scientist of Environmental Health Sciences](#)

⁶⁴ [Dr. Michael Antoniou – Reader in Molecular Genetics and Head of the Gene Expression and Therapy Group, Department of Medical and Molecular Genetics, King's College London School of Medicine, UK.](#)

a chemist got together to found Rothamsted Research station.⁶⁵ The ties with the US Department of Agriculture came during WW2 when together they discovered the very first herbicide, 2,4-D (2,4-dichlorophenoxyacetic acid) that could kill unwanted vegetation.

The Pesticide Conspiracy: even in the 1970s the Agricultural Industry was given massive power by the British Government

Robert van den Bosch, writing in 1978 in *The Pesticide Conspiracy*:⁶⁶ "If one considers how dangerous these chemicals are, one would suppose that it would be Government policy to minimize their use by every possible means. However the Royal Commission on Environmental Pollution (RCEP) notes, '*there is... no such policy in the UK, nor does the possible need for it appear to have been considered, notwithstanding the great increases in the use of these chemicals.*'"

The Agrochemical Industry, on the contrary, seems to be under the impression it is Government policy to encourage the maximum use of pesticides. Thus according to the Agrochemical industry, of 367,000 acres of potatoes grown in this country in 1976, 310,000 acres are treated with herbicides, 114,000 acres with granular insecticides and nematocides, 218,000 acres with foliar insecticides and 265,000 acres with fungicides.⁶⁷ In this way one acre of potatoes, the industry boasts, can be treated from 2-11 times with different pesticides." Van den Bosch also condemns the UK for aerial spraying. "*What is particularly shameful in this country is the prevalence of aerial spraying. One million acres of agricultural land are sprayed each year, which involves 34,000 flights. Controls on this practice are practically non-existent...nor as the Royal Commission points out, does there appear to be any controls on the type of spraying equipment.*" and the Royal Commission created under Royal Warrant in 1970, was closed down in 2011 as part of the Coalition Government's spending cuts. Britain still uses aerial spraying as derogation from the EU recommendations.

Syngenta, AstraZeneca and the UK government have a mutually beneficial relationship with each other at the expense of the British people

One Corporation promotes cancer; the other Corporation tries to cure it.

By 2011 CRUK was donating money (£450 million/year) to the Government's Strategy for UK Life Sciences and AstraZeneca (Syngenta's parent company) was providing twenty-two compounds to academic research to develop medicines in the UK.⁶⁸ AstraZeneca manufactures six different anti-cancer drugs mainly aimed at breast and prostate cancer. The Corporation has links in Asia, including Hospitals in China, Japan, Korea, and collaborators in Russia. In 2013 AstraZeneca's Oncology Website had the following portentous prediction: "*Cancer claims over 7 million lives every year and the number continues to rise. Deaths are estimated to reach 12 million by 2030.*"⁶⁹

In June 2012, a secret meeting was held between the Agricultural Biotechnology Council (ABC), representing industry, two UK Ministers, two MPs, Civil Servants, Scientists and NFU to discuss the barriers to introducing Genetically Modified Crops (GM) into Britain and how to overcome them

⁶⁵ <http://www.rothamsted.ac.uk/about>

⁶⁶ Van den Bosch, R. *The Pesticide Conspiracy*: USA Doubleday & Company (1978): Dorchester, UK: Prism Press (1980).

⁶⁷ Industry's Statistics: British Agrochemical Association London 1976

⁶⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences.pdf

⁶⁹ <http://www.astrazeneca.co.uk/medicines/oncology>

On 25th October 2012 Dr Helen Wallace Director of Genewatch and Pete Riley Campaign Manager GM Freeze published a Press Release: ⁷⁰ *Monsanto meets Ministers to push return of GM crops to Britain*. On 26 June 2012, a Roundtable discussion on 'Going for Growth': *Realising the potential of agricultural technologies in the UK*. Attendees ⁷¹ included Government Ministers, MPs, Civil Servants from Defra, the Department of Business, Innovations and Skills, Office of Life Sciences, Director of the Centre for Food Security, John Innes Centre, Rothamsted Research, James Hutton Institute, National Farmers Union Leaders and the Agricultural and Horticultural Development Board. Here are the links to the Agenda ⁷² and a summary of the meeting.⁷³ The ABC had also communicated with the Food Standards Agency (FSA). These organisations have colluded with industry.

UK Government and the GM Industry: colluding to promote GM crops and foods

To undermine consumer choice and ignore environmental harm (published by Genewatch UK, May 2014) ⁷⁴ *The documents: Reveal how foreign multinational GM companies are running the Government's PR strategy on GM crops by controlling how public and private money will be invested in research; Show that taxpayers' money is being spent on PR for the GM industry rather than delivering better food and farming; Suggest close co-operation with GM soya importers to pressure retailers to allow meat and dairy suppliers to use Monsanto's RoundUp® Ready GM soya for animal feed and prevent consumers from accessing GM-free fed meat and dairy products; Highlight the extent to which the GM industry's role in Government policy is being kept hidden from the public."*

US Attorney Steven Druker says: Governments and leading scientific institutions have systematically misrepresented the facts about GMOs

On 4 March 2015 the Organisation Beyond GM facilitated the Press Release of American public interest attorney Steven Druker's acclaimed new book, *Altered Genes, Twisted Truth* *How the Venture to Genetically Engineer Our Food Has Subverted Science, Corrupted Government and Systematically Deceived the Public.*⁷⁵

Steven Druker initiated a lawsuit against the US Food and Drug Administration (FDA) that forced it to open its files on GM foods

Those files revealed that GM foods first achieved commercialisation in 1992 only because the FDA:

- * Covered up the extensive warnings of its own scientists about their dangers*
- * Lied about the facts*
- * And then violated federal food safety law by permitting these foods to be marketed without having been proven safe through standard testing*

Druker challenges UK Royal Society over misleading statements made about GM foods

Open Letter to the UK Royal Society can be read here.⁷⁶

⁷⁰

<http://www.genewatch.org/article.shtml?als%5Bcid%5D=569457&als%5Bitemid%5D=571449>

⁷¹ <http://tinyurl.com/9jbce4g>

⁷² <http://tinyurl.com/8ahylza>

⁷³ <http://tinyurl.com/92rrajn>

⁷⁴

http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/FoI_summary_May14.pdf

⁷⁵ <http://beyond-gm.org/new-book-exposes-systematic-government-and-scientific-fraud-over-gm-food/>

⁷⁶ http://beyond-gm.org/wp-content/uploads/2015/03/DRUKER_OPEN-LETTER-TO-THE-ROYAL-SOCIETY_Final.pdf

Extracts: "Because clarifying the facts about GM foods is crucial for developing an intelligent, science-based policy on the future of agriculture, and because the Royal Society has significantly contributed to the confusion that currently surrounds this issue, it is imperative that remedial action be promptly initiated. This is especially so considering that:

- The European Commission is about to approve substantial regulatory changes in regard to GM crops.*
- The UK is seriously considering allowing them to be commercially planted.*
- The Society and other proponents of GM foods have inculcated the widespread illusion that there is an overwhelming scientific consensus that the safety of these products has been established through rigorous testing..."*

Sir Paul Nurse the President of the Royal Society failed to respond

Sir Paul had been sent over by the Rockefeller Foundation New York to try to persuade the public to accept GM crops. In 2016 he became the Director of the Francis Crick Institute. The Francis Crick Institute is a biomedical discovery institute dedicated to understanding the fundamental biology underlying health and disease. Its work is helping to understand why disease develops and to translate discoveries into new ways to prevent, diagnose and treat illnesses such as cancer, heart disease, stroke, infections, and neurodegenerative diseases. **Many of these diseases are related to pesticides.** The second largest donation came from Cancer Research UK (£160 million). The previous Chairman, Michael Pragnell OBE was Founder of Syngenta and former Chairman of CropLife International.

The Open Letter from America ⁷⁷ was from 60 million American citizens to David Cameron (and the rest of the EU countries and EU Regulators) warning them not to authorize GM crops because of the devastating effects on human health and the environment

It was delivered to 10 Downing Street on 11 November 2014.⁷⁸

Extracts: "In our country, GM crops account for about half of harvested cropland. Around 94% of the soy, 93% of corn (maize) and 96% of cotton grown is GM. The UK and the rest of the EU have yet to adopt GM crops in the way that we have, but you are currently under tremendous pressure from governments, biotech lobbyists, and large corporations to adopt what we now regard as a failing agricultural technology...Studies of animals fed GM foods and/or glyphosate, however, show worrying trends including damage to vital organs like the liver and kidneys, damage to gut tissues and gut flora, immune system disruption, reproductive abnormalities, and even tumors.³⁵...These scientific studies point to potentially serious human health problems that could not have been anticipated when our country first embraced GMOs, and yet they continue to be ignored by those who should be protecting us. Instead our regulators rely on outdated studies and other information funded and supplied by biotech companies that, not surprisingly, dismiss all health concerns.

Through our experience we have come to understand that the genetic engineering of food has never really been about public good, or feeding the hungry, or supporting our farmers. Nor is it about consumer choice. Instead it is about private, corporate control of the food system. Americans are reaping the detrimental impacts of this risky and unproven agricultural technology. EU countries should take note: there are no benefits from GM crops great enough to offset these impacts. Officials who continue to ignore this fact are guilty of a gross dereliction of duty."

⁷⁷ www.theletterfromamerica.org

⁷⁸ https://twitter.com/beyond_gm/status/532224079605288960

Most of the countries in the EU took that advice and opted out of GM (including Scotland, Wales and Ireland).

David Cameron ignored that advice on behalf of England. He and Defra concealed the letter from the British public. The European Commission and the European Food Safety Authority also ignored it and continued to approve GM Crops for growing and for food and feed in the EU

This was despite these grave warnings from American citizens of their experiences (Living with GMOs) and from independent organisations in Europe, such as Testbiotech (Germany), CRIIGEN (France), Corporate Europe Observatory, Earth Open Source and Pesticides Action Network.

Capability to detect 393 pesticides in food, but none risked consumer health

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 Levels (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.⁷⁹

Residues of pesticides found in non-organic food is increasing

Defra started publishing pesticide residues in foods in 2000.⁸⁰ *"Residues of chlormequat⁸¹, glyphosate and pirimiphos-methyl⁸² were found (in bread). Defra said: "These pesticides are commonly used on cereal crops, and residues have been found in other cereal products, therefore these findings are not unexpected. None of the residues found were of concern for consumer health."*

A Report by Pesticides Action Network- UK has shown that 46% of non-organic food in 2013 contained residues of one or more pesticides and this had increased from 25% in 2003.⁸³ A further Report by PAN-UK: Pesticides in your daily bread showed that nearly two-thirds of bread contained one or more pesticides and the three most frequently found were glyphosate, chlormequat and malathion.⁸⁴

Pesticide usage statistics show a massive increase in glyphosate used between 2012 and 2014

Fera statistics showed that in 2012 the area treated by glyphosate was 1,750,000 ha. This had increased in 2014 to 2,250,000 ha. Guy Gagen, Chief Arable Adviser for the NFU, said increased glyphosate use (up one third since 2012, to an area the size of Wales) was probably due to treatment of 'black grass.'⁸⁵ Black grass is a glyphosate-resistant super-weed just like Japanese knotweed. Herbicide resistant black grass, first seen in 1982 (two years after farmers started spraying glyphosate pre-harvest) and is now found on 16,000 farms in 34 counties. Gagen said that spraying wheat could result

⁷⁹ <http://www.efsa.europa.eu/en/efsajournal/pub/2550.htm>

⁸⁰ <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRiF/about-PRiF>

⁸¹ Chlormequat, a plant growth regulator was present consistently throughout.

⁸² pirimiphos-methyl, is an organophosphate insecticide for use in storage. The approval was revoked on 24/03/2011, but it was only finally banned 31/03/2013, presumably to allow stocks to be used up.

⁸³ http://www.pan-uk.org/files/pesticides_on_a_plate_2013_final.pdf

⁸⁴ [http://www.pan-uk.org/files/Pesticides%20in%20Your%20Daily%20Bread%20guide%20-%20FINAL%20\(1\).pdf](http://www.pan-uk.org/files/Pesticides%20in%20Your%20Daily%20Bread%20guide%20-%20FINAL%20(1).pdf)

⁸⁵ <http://www.thetimes.co.uk/tto/environment/article4528297.ece>

in traces of glyphosate ending up in bread sold in supermarkets but the amount was well below the maximum residue level set by the EU. A Defra spokesman said: *"There are extensive regulations in place so that people and the environment are protected from pesticides. The approval of glyphosate for use across Europe is being reviewed by the EU Commission."*

Food and Environment Research Agency (FERA) survey of pesticides 1988 to 2014

These indicate that Pesticide Residues on British food are increasing annually. A survey of pesticide (active substances) usage on Oil Seed Rape (OSR) 1988-2014 showed that the number of active substances applied had increased from 5 in 1988 to 15 in 2014 and the number of treatments had increased from 5 in 1988 to 12 in 2014. In 2014, herbicides were used on 98.4% OSR and seed treatments on 95.8%.

The State of Nature in the UK 2016 is "pretty knackered" according to the Report: the Republic of Ireland and the USA lie even further below the UK⁸⁶

Mark Eaton of the RSPB, the Report's first author said: *"The report includes a new "biodiversity intactness index", which analyses the loss of species over centuries. The UK has lost significantly more nature over the long term than the global average with the UK the 29th lowest out of 218 countries. "It is quite shocking where we stand compared to the rest of the world, even compared to other western European countries: France and Germany are quite a way above us in the rankings," said Eaton. "The index gives an idea of where we have got to over the centuries, and we are pretty knackered."*

It was therefore astounding to see the complete denial of the NFU and Defra about: The State of Nature Report. NFU vice-president Guy Smith said *"intensification of farming had ended in the early 1990s."* that farmers *"were using less fertiliser and pesticides than ever"* and a spokeswoman from Defra said: *"Protecting our precious environment and supporting our world-leading farmers, a cornerstone of our economy, will form an important part of our EU exit negotiations."* The statistics for pesticide usage produced by Fera show exactly the opposite. Isn't Defra supposed to be advising the UK Government?

Biodiversity Intactness Index

This is a link to an animated pictorial representation but it is not easily findable.⁸⁷

"Of 218 countries assessed, the UK is ranked 189: it is 29th lowest out of 218: Countries below are the Republic of Ireland, USA, Hong Kong and Macao. This means that nature is faring worse in the UK than in most other countries.

Around 75% of the UK is managed for food production. How we manage that land is key to the state of Nature.

UK 165 species are considered critically endangered and likely to go extinct.

England 109 species are critically endangered and likely to go extinct.

Scotland 65 species are critically endangered and are likely to go extinct.

Northern Ireland 45 species are critically endangered and likely to go extinct.

Wales 41 species are critically endangered and likely to go extinct."

Most UK farmers who manage '75% of UK land' are drowning their crops in pesticides

The National Farmers' Union (NFU), the Crop Protection Association (CPA) and the Agricultural Industries Confederation (AIC) combine to lobby the EU not to restrict the

⁸⁶

http://www.rspb.org.uk/Images/State%20of%20Nature%20UK%20report_%2020%20Sept_tcm9-424984.pdf

⁸⁷ <https://www2.rspb.org.uk/whatwedo/stateofnature2016>

320+ pesticides available to them. The publication is called: **HEALTHY HARVEST**.⁸⁸ The countries that have even lower Biodiversity Intactness Indices are similarly working with the Agrochemical Corporations. These are the Republic of Ireland and the USA.

Baroness Chisholm of Owlpen in the House of Lords on 21/03/2016 said the British Government supports EFSA's conclusions that glyphosate does not cause cancer. **THAT IS WHY THE NGOS IN EUROPE CALL BRITISH CITIZENS LAB RATS**

Biocides Regulations in the European Union make a lot of money for European Regulators and the Pesticides Industry

REACH (Registration, Evaluation, Authorisation and Restriction of Chemical substances): The Biocidal Product Regulation (BPR, Regulation (EU) 528/2012) concerns the placing on the market and use of biocidal products, which are used to protect humans, animals, materials or articles against harmful organisms, like pests or bacteria, by the action of the active substances contained in the biocidal product.⁸⁹

*"REACH is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals, while **enhancing the competitiveness of the EU chemicals industry**. It also promotes alternative methods for the hazard assessment of substances in order to reduce the number of tests on animals."* It came into force on 02/08/07.

A global industry has emerged to give advice on Biocides Regulation. The British Government is also making a lot of money out of it: BiocidesHub is based in the UK

As with the regulation of pesticides, it is controlled by the pesticides industry and based in the UK. Biocides Symposia are held regularly around the world to *"get up-to-speed on all that's new in biocidal products regulation"* to *"stay one step ahead."* Courses are from £300-400 per day to \$1585 for a Symposium. A multitude of firms have clients from 'industry, crop protection and government'. Chemical Watch **BiocidesHub** (Shrewsbury) offered 13 Events on Biocides Regulation in 2016, ranging from beginners courses to advanced courses. There are even more taking place in 2017.

BIOCIDES HAVE NO PLACE IN AGRICULTURE. A BIOCIDES IS A SUBSTANCE THAT IS KILLING ALL LIFE

BIOCIDES HAVE NO PLACE AROUND THE GREAT BARRIER REEF

The 27-year decline of coral cover on the Great Barrier Reef and its causes⁹⁰

Extracts: Based on the world's most extensive time series data on reef condition (2,258 surveys of 214 reefs over 1985–2012), we show a major decline in coral cover from 28.0% to 13.8% (0.53% y⁻¹), a loss of 50.7% of initial coral cover. Tropical cyclones, coral predation by crown-of-thorns starfish (COTS), and coral bleaching accounted for 48%, 42%, and 10% of the respective estimated losses amounting to 3.38% y⁻¹ mortality rate. Importantly, the relatively pristine northern region showed no overall decline. Thus, reducing COTS populations, by improving water quality and developing alternative control measures, could prevent further coral decline and improve the outlook for the Great Barrier Reef. Such strategies can, however, only be successful if climatic conditions are stabilized, as losses due to bleaching and cyclones will otherwise increase.

⁸⁸ Healthy Harvest: The impact of losing plant protection products on UK food and plant production. <http://www.nfuonline.com/assets/30597>

⁸⁹ <https://echa.europa.eu/regulations/biocidal-products-regulation>

⁹⁰ <http://www.pnas.org/content/109/44/17995.full>

Glyphosate persistence in samples of seawater extracted from the Great Barrier Reef⁹¹

Extracts: Glyphosate is one of the most widely applied herbicides globally but its persistence in seawater has not been reported. Here we quantify the biodegradation of glyphosate using standard “simulation” flask tests with native bacterial populations and coastal seawater from the Great Barrier Reef. The half-life for glyphosate at 25 °C in low light was 47 days, extending to 267 days in the dark at 25 °C and 315 days in the dark at 31 °C, which is the longest persistence reported for this herbicide. AMPA, the microbial transformation product of glyphosate, was detected under all conditions, confirming that degradation was mediated by the native microbial community. This study demonstrates glyphosate is moderately persistent in the marine water under low light conditions and **is highly persistent in the dark**. Little degradation would be expected during flood plumes in the tropics, which could **potentially deliver dissolved and sediment-bound glyphosate far from shore**.

Biocides glyphosate and the systemic neonicotinoid pesticides are highly toxic to aquatic life. Instructions for use state that all water bodies should be protected
Instructions for using Roundup Advance AG Herbicide by Monsanto include: “*Protection of Wildlife, Fish, Crustacea and Environment. Do not contaminate dam, river or stream with the product.*”⁹²

Clothianidin (Sumitomo Shield a systemic neonicotinoid insecticide) has been granted registration by APVMA for use on very low-lying sugar cane plantations.

Instructions: PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT⁹³
*DO NOT apply under weather conditions, or from spraying equipment, that may cause spray drift onto nearby or adjacent areas, particularly wetlands, water-bodies or watercourses. **This product is highly toxic to aquatic invertebrates.** DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply when there are aquatic and wetland areas including aquacultural ponds or surface streams and rivers downwind from the application area and within the mandatory no-spray zone shown in table 1.*

All other coral ecosystems, such as those in Hawaii (where the agrochemical industry has bought up large tracts of land to test chemicals on crops not relevant to the locals)⁹⁴ and the Coral Triangle (a geographical term that refers to a roughly triangular area of the tropical marine waters of Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands and Timor-Leste) have halved in size since 1970.⁹⁵

Effects of pesticides on human health and biodiversity in Britain⁹³

UK Mortality rates from 2014 the highest for 50 years: they continue to rise⁹⁶

The period July 2014 to June 2015 saw an additional 39 074 deaths in England and Wales compared with the same period the previous year. While mortality rates fluctuate year-on-year, this was the largest rise for nearly 50 years and the higher rate of mortality has been maintained throughout 2016 and into 2017.

Modern diseases that are increasing in Britain due to pesticide residues in food and the herbicide Roundup sprayed directly on communities

⁹¹ <http://www.sciencedirect.com/science/article/pii/S0025326X14000228>

⁹² <http://websvr.infopest.com.au/LabelRouter?LabelType=L&ProductCode=70096>

⁹³ http://www.sumitomo-chem.com.au/sites/default/files/pdf/labels/shield_label.pdf

⁹⁴ http://www.centerforfoodsafety.org/files/pesticidereportfull_86476.pdf

⁹⁵ http://assets.wwf.org.uk/downloads/living_blue_planet_report_2015.pdf

⁹⁶ <http://jech.bmj.com/content/early/2017/09/01/jech-2017-209403>

Alzheimer's disease, Dementia, Autism, ADHD Bipolar, Diabetes (Type 2) Multiple sclerosis, Motor-neurone Disease, Obesity, Stroke, Hypertension, Cataracts & eye diseases, Inflammatory bowel disease, Birth defects, Colitis, Crohn's disease Hypercholesterolaemia, Allergies, asthma, Atopic dermatitis, Miscarriage/infertility, Renal disease/failure, Liver abnormalities, Coeliac disease, Gluten intolerance, Pancreatic abnormalities, Autoimmune diseases, Arthritis and various **cancers**.

¹⁴C labelled glyphosate detected in cartilage; is it responsible for degeneration of cartilage and knee arthritis?

Samsel and Seneff wrote paper IV on Glyphosate: Glyphosate, pathways to modern diseases IV: cancer and related pathologies ⁹⁷ and concluded that: "*significant evidence of tumours was found during these investigations*". In this paper Table 11 Page 127 shows the distribution and bioaccumulation of ¹⁴C labelled glyphosate in blood, bone, organs and other tissues of Sprague Dawley rats.

Recent anatomical studies of knee arthritis from Harvard show, that when the team factored out the effects of weight and age in the two modern groups, **knee arthritis was still more than twice as common in the group of people who died after 1976**, '*suggesting other factors are involved*'. ⁹⁸ In England in July 2017 the NHS waiting list for hip replacement (and cataract surgery) exceeded 4 million.

Multimics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide.⁹⁹

Overall, metabolome and proteome disturbances showed a substantial overlap with biomarkers of non-alcoholic fatty liver disease and its progression to steatohepatitis and thus confirm liver functional dysfunction resulting from chronic ultra-low dose Glyphosate-Based Herbicide (GBH) exposure. The study is the first ever to show a causative link between consumption of Roundup at a real-world environmentally relevant dose and a serious disease. NAFLD currently affects **25% of the US population** and **similar numbers of Europeans**. Risk factors include being overweight or obese, having diabetes, or having high cholesterol or high triglycerides (a constituent of body fat) in the blood. However, some people develop NAFLD even if they do not have any of these known risk factors.

Roundup caused a 50% decrease in sperm count in males between 1973 and 2011

Prof Hagai Levine from the Hebrew University of Jerusalem undertook a rigorous and comprehensive meta-analysis of data collected between 1973 and 2011 finds that among men from Western countries, sperm concentration declined by more than 50 percent, with no evidence of a 'leveling off' in recent years.¹⁰⁰ Prof Levine suggested endocrine disruption from chemical exposures "*during critical windows of male reproductive development may play a role in prenatal life*" and "*exposure to pesticides may play a role in adult life. Thus, a decline in sperm count might be considered as a 'canary in the coal mine' for male health across the lifespan.*" Researchers from Brazil where babies who are lactose intolerant drink GM soy milk found that in rats fed soy milk it elicits endocrine-disrupting effects, by decreasing serum testosterone levels, decreased Sertoli cell numbers and increased percentage of degenerated Sertoli and Leydig cells.¹⁰¹

⁹⁷ <http://www.amsi.ge/jbpc/31515/11SA15R.pdf>

⁹⁸ <http://www.sciencemag.org/news/2017/08/knee-arthritis-americans-has-doubled-1940>

⁹⁹ <http://www.nature.com/articles/srep39328>

¹⁰⁰

<https://academic.oup.com/humupd/article/doi/10.1093/humupd/dmx022/4035689/Temporal-trends-in-sperm-count-a-systematic-review>

¹⁰¹ <http://www.sciencedirect.com/science/article/pii/S0278691516304896>

UK government's response to the EU directive advice: it left the decisions to industry

Sustainable Use of Pesticides 21 October 2009: DIRECTIVE 2009/128/EC OF THE EUROPEAN PARLIAMENT. ¹⁰² **EU Directive Advice compared with UK Government's Response 2010**

Article 9 Aerial Spraying

EU Directive Advice: Aerial spraying of pesticides has the potential to cause significant adverse impacts on human health and the environment, in particular from spray drift. Therefore aerial spraying should generally be prohibited with derogations possible where it represents clear advantages in terms of reduced impacts on human health and the environment in comparison with other spraying methods, or where there are no viable alternatives, provided that the best available technology to reduce drift is used.

Government Response: We do not consider that responsible application of pesticides by aerial spraying poses an unacceptable risk to human health and the environment, and consequently we will use the derogation. We believe that the existing legislation control regime provides a basis for meeting the Directive and this will be adapted to ensure the continuation of properly regulated aerial applications through a consent-based approach.

Article 10 Protection of water

EU Directive Advice: The aquatic environment is especially sensitive to pesticides. It is very necessary for particular attention to be paid to avoiding pollution of surface water and groundwater by taking appropriate measures such as the establishment of buffer and safeguard zones, or planting hedges along surface water to reduce exposure of water bodies to spray drift, drain flow and run-off. The dimensions of buffer zones should depend in particular pesticide properties, as well as agricultural characteristics of the areas concerned.

Government Response: Current statutory and voluntary controls related to pesticides and the protection of water, if followed, afford a high degree of protection to water courses and cover specific measures detailed in the Directive. The Government will primarily seek to work with the pesticides industry to enhance voluntary measures.

Article 11 Use of pesticides in specific areas

EU Directive Advice: Use of pesticides can be particularly dangerous in very sensitive areas such as Natura 2000 sites protected in accordance with Directives 79/409/EEC and 92/43/EEC. In other places such as public parks and garden, sports and recreation grounds, school grounds and children's playgrounds, and in the close vicinity of healthcare facilities, the risks from exposure to pesticides is high. In these areas, the use of pesticides should be minimized or prohibited. When pesticides are used, appropriate risk management measures should be established and low-risk pesticides as well as biological control measures should be considered in the first place.

Government Response: We do not consider it necessary to prohibit the use of pesticides in public spaces or conservation areas or to impose new statutory controls on pesticide use in these areas. We believe that the UK can meet its obligations under the Directive through existing statutory and voluntary controls and develop additional voluntary measures.

In December 2010 Lord Henley, the Under-Secretary of State for Defra, explained why the UK weren't going legislate. He said that the British had an "*ideological dislike of legislation* there were "*dangers of over-legislating.*"

¹⁰² <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0128>

Progress in the implementation of Directive 2009/128/EC on the sustainable use of pesticides: Report of Member State National Action Plans (10/10/2017)¹⁰³

The UK has no action plan for the sustainable use of chemicals: the pesticides industry decides

The UK did not provide a response to the questionnaire, but provided information on some of the topics later on (p 3). The UK was not among the 21 members that reported risk reduction targets or the 9 members that reported use reduction targets (p 5). The UK appears to provide no training or certification (p 5). The UK has no certification for advisors in pest management (p 6). It collects no data on the incidence of pesticide poisoning (p 7). Chronic poisoning is not monitored systematically in the UK. Derogations for aerial spraying were granted in the UK. The UK didn't require farmers to report to their neighbours and local residents when about to spray (p 9).

We are drowning our world in unsafe and untested chemicals

The International Federation of Gynecology and Obstetrics (FIGO), a group representing OB-GYNs from 125 countries, released a report detailing the detrimental health effects caused by even small exposure to common chemicals like the ones found in pesticides, plastics, and air pollution.¹⁰⁴ The health problems are even greater for babies exposed in the womb, who face increased risks of cancer, reduced cognitive function, and even miscarriage or stillbirth. The organization cited concerns about the sharp increase over the past four decades in chemical manufacturing that continues to grow by more than 3 per cent every year. Some 30,000 pounds of chemicals were manufactured or imported for every person in the United States in 2012 alone—a whopping 9.5 trillion pounds in total. Annually, the FIGO authors write, chemical manufacturing leads to 7 million deaths and billions in health care costs.

Why we should eat organic food (07/10/2015)

A Report in *The Guardian* asked why we should eat organic food.¹⁰⁵ The journalist said: *"Over the last 50 years the UK has witnessed a steep decline in wildlife, in large part a consequence of the 31,000 tonnes of chemicals that are sprayed on Britain every year, impoverishing soil fertility and harming bees and other pollinators."*

Some predictions for the future of farming with biocides in the UK and the US

- People born in 1960 or after will have a one in two chance of getting cancer during their lifetime.
- In 1970, the incidence of autism in the US was 1:10,000. In 2007 it was 1:150. In 2009 it was 1:100. In 2013 it is 1:50 and by 2025 it will be 1:2, i.e. 50%.
- By 2050 the incidence of people with vision loss from cataracts and macular degeneration will be doubled.
- Obesity: by 2025 the UK will have the highest obesity rates among both men and women in Europe, at 38%: in contrast in France women have had virtually no increase in BMI over 40 years. The US has the highest obesity rate.
- Diabetes: WHO said worldwide in 1980 108 million people had diabetes; in 2014, this had risen to 422 million. This is predicted to rise steeply.

¹⁰³ https://ec.europa.eu/food/sites/food/files/plant/docs/pesticides_sup_report-overview_en.pdf

¹⁰⁴ http://www.figo.org/sites/default/files/uploads/News/Final%20PDF_8462.pdf

¹⁰⁵ <http://www.theguardian.com/commentisfree/2015/oct/07/why-should-i-eat-organic-google>

Glyphosate and AMPA: widespread persistence in topsoils in Europe¹⁰⁶

Press Release: "A new research study by the European Commission's Joint Research Centre, the Dutch University of Wageningen and Rikilt laboratories, reveals that among 317 EU soil samples of arable land, 42% contained AMPA, the most toxic metabolite of glyphosate, while glyphosate was found in 21% of the soils; 18% of the samples had both. **This was contrary to the assertions of the manufacturers.**¹⁰⁷ The study was conducted in six crop systems along 11 EU member states comprising soils under different geographical and climatic conditions. Denmark, **the UK** and Portugal are the worst in this spectrum, with the highest detection frequency, while Italy and Greece seem to be the ones using less glyphosate on their crops. However, and most notably, these 2 molecules could be found in every tested member state. **All tested crops presented glyphosate and AMPA residues.** By far, the worst case was that of Portuguese vineyards, while no crops exhibited patterns of reduced reliance on glyphosate compared to others." Prof. Dr. Violette Geissen (Wageningen University), Jones A, Fernández-Ugalde O, Mol HGJ, Ritsema CJ. 2017. Distribution of glyphosate and aminomethyl phosphonic acid (AMPA) in agricultural topsoils of the European Union. *Sci Total Environm.* [In press].

Sustaining Life: How Human Health Depends on Biodiversity¹⁰⁸

Dr Eric Chivian founded the Center for Health and the Global Environment at Harvard Medical School in 1996: *"To help people understand that our health, and that of our children, depends on the health of the environment and that we must do everything we can to protect it"*

Eric Chivian and Aaron Bernstein co-edited the above book, which includes contributions from more than 100 leading biodiversity and health scientists. It was published in June 2008 by Oxford University Press and was co-sponsored by the United Nations Development Programme, the United Nations Environment Programme, the Secretariat of the Convention on Biological Diversity and the World Conservation Union.

Man-made chemicals in the environment are silent killers and will affect everyone

Human health depends on biodiversity. Food depends on natural pollinators. The devastating effects of these silent killers on us and our environment do not distinguish between farmers or city dwellers, the wealthy or the poor, between media moguls, editors or their reporters, Monsanto or Syngenta Executives, Prime Ministers or Presidents. Humans and the environment are being silently poisoned by thousands of untested and unmonitored chemicals.

The duty of the World Health Organization

The World Health Organization must confront the Regulatory Authorities and dismantle the current corrupt establishment in Europe, the UK and the US and create sustainable methods of managing farming before it is too late.

Yours sincerely

Rosemary Mason MB ChB FRCA

18 October 2017

¹⁰⁶ <http://www.pan-europe.info/press-releases/2017/10/press-release-new-study-glyphosate-persists-and-european-top-soils-are>

¹⁰⁷ <http://www.glyphosate.eu/environmental-fate-and-behaviour-glyphosate>

¹⁰⁸ <https://global.oup.com/academic/product/sustaining-life-9780195175097?cc=gb&lang=en&>