

## OPEN LETTER TO THE NATIONAL FARMERS' UNION

### Executive Summary

#### THE AGROCHEMICAL INDUSTRY HAS WORKED WITHIN GOVERNMENT SINCE BEFORE WW2

Rothamsted Research had been established by a philanthropist collaborating with a chemist in 1843 and had discovered the first chemical herbicide 2,4-D in 1941.

#### FROM THE 1970s INTO THE 2000s INDUSTRY HAS BEEN GIVEN FREE REIN

The Royal Commission on Environmental Pollution (RCEP) criticized the Government for its lax pesticides policy and particularly for aerial spraying, so in 2011 the RCEP was abolished. Syngenta, Bayer CropScience and Monsanto are working within Government. Freedom of Information requests showed that GM companies are running the Government's PR strategy on GM crops by controlling how public and private money will be invested in research.<sup>1</sup>

#### THE GOVERNMENT REFUSED TO LEGISLATE ON 'SUSTAINABLE' USE OF PESTICIDES

EU Directive (2009/128/EC) Article 9: Aerial Spraying. The Government refused to prohibit aerial spraying. Article 10: Protection of Water Article. With regard to establishing buffer zones near to watercourses they would seek to work with industry. Article 11: They did not consider it necessary to prohibit the use of pesticides in sensitive areas such as Natura 2000 sites, children's playgrounds, hospitals, schools, public parks etc. Article 31: Advance notice of spraying to members of the public (including children) who could be exposed to spray drift could be dealt with by developing 'good relations with their neighbours'.

#### IN 2011 THE PESTICIDES FORUM CONFIRMED WHAT THE GOVERNMENT WANTED TO HEAR

*"The work of the UK Pesticides Forum in 2011 confirms that the use of pesticides is not adversely impacting on the health of UK citizens or the environment...This is testimony to the effectiveness of both statutory and voluntary controls."*

#### GLYPHOSATE CAUSES CANCER: SEALED DOCUMENTS OBTAINED FROM THE US EPA SHOW THAT MONSANTO KNEW THAT GLYPHOSATE CAUSED CANCER IN ANIMALS BUT MANIPULATED THE RESEARCH RESULTS<sup>2</sup>

*"During its years investigating glyphosate's bioactivity, Monsanto conducted hundreds of trials on mice, rats, beagle dogs, rabbits and other life. Among the many cancers and diseases Monsanto's own research found associated with glyphosate are: adenoma/cancer in the pituitary gland; glioma tumors in the brain; reticular cell sarcomas in the heart; malignant tumors in the lungs; salivary mandibular reticular cell carcinoma; metastatic sarcomas of the lymph gland; prostate carcinoma; cancer of the bladder; thyroid carcinoma; adrenal reticulum cell sarcomas; cortical adenomas; basal cell squamous skin tumours. In female mammals there were cancers of the lung, liver, thymus, stomach, bladder adrenal glands, ovaries, colon, uterus, parathyroid and mammary glands."*

#### GLYPHOSATE IS THE CAUSE OF GLOBAL OBESITY AND DIABETES

Obesity is not due to the public's addiction to sugar, but to the addiction of farmers around the world (encouraged by the agrochemical industry) to spraying glyphosate on sugar cane to ripen it and to desiccate (dry) other crops. UK farmers started to spray glyphosate pre-harvest in 1980. Glyphosate use in the US has increased over the years 2002 to 2012 from

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<sup>1</sup> [http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/Fol\\_summary\\_May14.pdf](http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/Fol_summary_May14.pdf)

<sup>2</sup> <http://prn.fm/monsantos-sealed-documents-reveal-the-truth-behind-roundups-toxicological-dangers-richard-gale-and-gary-null/>

49,000 tons to 128,000 tons annually. In the UK, according to Defra, more than 1,700 tonnes of glyphosate were sprayed on crops in 2014, up one third on 2012.<sup>3</sup>

#### **GLYPHOSATE IS AN ENDOCRINE DISRUPTING CHEMICAL (EDC)**

EDCs are chemicals, that, for example, cause fish to change sex, make girls become sexually mature at 13 years old, cause a range of endocrine-related cancers, obesity and diabetes. The agrochemical industry, the European Commission, EFSA and the UK government have been colluding to delay a ban on EDCs.

#### **CHILDREN LIVING IN BRITAIN ARE THE MOST EXPOSED TO AGRICULTURAL CHEMICALS COMPARED WITH OTHER EUROPEAN COUNTRIES (HENCE 'CHEMICAL BRAIN DRAIN')**

British Governments had been advised that farming should be chemically based since WW2. All seem to have failed to appreciate that chemicals are hazardous. Children in the UK are falling behind global rivals in international tests taken by 15-year-olds, failing to make the top 20 in mathematics, reading and science (December 2013). In 2000 UK children were 4<sup>th</sup>.

#### **SYSTEMIC NEONICOTINOID INSECTICIDES ARE KILLING BEES**

The overwintering survey 2012/2013 for the UK showed bee losses at **29%**. Italy was the lowest at **5%**, because they had banned systemic neonicotinoids on maize in 2008 (see p 7).

#### **OPEN LETTER FROM AMERICA FROM 60 MILLION AMERICAN CITIZENS TO DAVID CAMERON (AND THE EU) WARNING THE UK NOT TO AUTHORIZE GM CROPS BECAUSE OF DEVASTATING EFFECTS ON HUMAN HEALTH AND THE ENVIRONMENT**

Did the Prime Minister and Defra tell British farmers about the letter? Or are farmers, the rest of the public and the environment being sacrificed for the sake of the economy?

#### **MANY OF THE HEALTH PROBLEMS OF THE LAST 30 OR SO YEARS ARE DUE TO A WESTERN DIET WITH CHEMICAL (GLYPHOSATE) RESIDUES IN FOOD**

In addition to the cancers that Monsanto found in their initial research on glyphosate (p1), independent papers have found links with Alzheimer's Disease, Autism, Congenital Birth Defects, Celiac Disease, Senile Dementia, Type 2 Diabetes, End Stage Renal Disease, Hepatitis C, Hypertension, Inflammatory Bowel Disease (Crohn's and Ulcerative Colitis), Kidney and Renal Pelvis Cancer, Disorders of Lipoprotein Metabolism, Liver and Intrahepatic Bile Duct cancer, Deaths due to Obesity, Deaths due to Parkinson's Disease, Peritonitis and Deaths due to Stroke.<sup>4</sup> Others diseases associated with glyphosate residues include depression/anxiety syndrome, multiple sclerosis, osteoporosis/osteomalacia, prion diseases,<sup>5</sup> myeloid leukaemia, carcinoma of the thyroid, pancreas, bladder, non-Hodgkin's lymphoma.

#### **GEORGINA DOWNS (FOUNDER OF UK PESTICIDES CAMPAIGN IN 2001) WON A HIGH COURT ACTION AGAINST THE GOVERNMENT OVER ITS FAILURE TO PROTECT PEOPLE IN THE COUNTRYSIDE FROM EXPOSURE TO TOXIC PESTICIDES SPRAYED ON CROPS**

She had a landmark victory in the High Court in November 2008 that ruled that the UK Government's policy on pesticides was not in compliance with European legislation. However, the Court of Appeal overturned the High Court Judgment in May 2009. The reasons were related to alleged financial and economic impacts on manufacturers, farmers and distributors, or the impact on agricultural productivity, but nothing about public health.

<sup>3</sup> <http://www.thetimes.co.uk/tto/environment/article4528297.ece>

<sup>4</sup> [http://www.organic-systems.org/journal/92/JOS\\_Volume-9\\_Number-2\\_Nov\\_2014-Swanson-et-al.pdf](http://www.organic-systems.org/journal/92/JOS_Volume-9_Number-2_Nov_2014-Swanson-et-al.pdf)

<sup>5</sup> [http://www.surgicalneurologyint.com/temp/SurgNeurolInt6145-4381109\\_121011.pdf](http://www.surgicalneurologyint.com/temp/SurgNeurolInt6145-4381109_121011.pdf)

## OPEN LETTER TO THE NATIONAL FARMERS' UNION

### **The European Commission was challenged about its continued registration of Roundup® as long ago as 2011; why has it delayed it even further until June 2016?**<sup>6</sup>

In 2011, a paper written by eight multinational experts, the authors challenged the European Commission about its continued registration of Roundup®. Roundup® and Birth Defects: is the public being kept in the dark?<sup>7</sup>

### **Devastating Impacts of Glyphosate Use with GMO Seeds in Argentina**<sup>8</sup>

Argentinian lawyer Dr Graciela Gomez even came to petition the European Parliament against continued registration of glyphosate on behalf of the rural communities in Argentina. Many farm workers and their families were affected by reproductive problems, birth defects and cancers and had DNA changes after spraying pesticides on Roundup® Ready Soy which Monsanto had forced upon them in 1996.

The review of glyphosate was due to take place in 2012. Soon after the Commission was notified of the latest research showing that glyphosate and Roundup® caused birth defects, it quietly passed a directive delaying the review of glyphosate and 38 other dangerous pesticides until 2015. The then EU Commissioner for Health, John Dalli, resigned on 12/10/2012 after an anti-fraud inquiry linked him to an attempt to influence tobacco legislation.<sup>9</sup> The Commissioner denied the allegation.

### **The German Rapporteur Member State (RMS) 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) that is essential for the biosynthesis of certain amino acids. This enzyme is not found in animals and humans."*<sup>10</sup>

### **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.<sup>11</sup> Pesticide scientists and plant scientists have based their assessment of herbicides on complete ignorance of human physiology. UK public health experts and physicians in the Wellcome Trust and the Royal Society have failed to question the accuracy of the pesticide regulator's risk assessors' knowledge.

<sup>6</sup> <http://panteres.com/2015/09/15/glyphosate-eu-commission-wants-to-extend-half-a-year-admission/>

<sup>7</sup> <http://earthopensource.org/earth-open-source-reports/roundup-and-birth-defects-is-the-public-being-kept-in-the-dark/>

<sup>8</sup> [http://www.i-sis.org.uk/Devastating\\_Impacts\\_of\\_Glyphosate\\_Argentina.php](http://www.i-sis.org.uk/Devastating_Impacts_of_Glyphosate_Argentina.php)

<sup>9</sup> [http://europa.eu/rapid/press-release\\_MEMO-12-788\\_en.htm](http://europa.eu/rapid/press-release_MEMO-12-788_en.htm)

<sup>10</sup>

[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](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)

<sup>11</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23985870>

## **Compared with other European countries, children living in Britain are the most exposed to agricultural chemicals**

### **Rothamsted Research is the longest running agricultural research station in the world**

When UK Rothamsted was founded in 1843, it was an enormous tragedy that the philanthropist John Bennet Laws, owner of the Rothamsted Estate appointed a **chemist** as his scientific collaborator. This set the pattern for farming in the UK: to rely totally on the agrochemical industry and the input of chemicals.

### **Rothamsted developed the first chemical herbicide**

The herbicide, 2,4-D was developed during World War II at British Rothamsted Experimental Station by Judah Hirsch Quastel and sold commercially in 1946.<sup>12</sup>

*'The low cost of 2,4-D has led to continued usage today and it remains one of the most commonly used herbicides in the world.'* However, on 23/06/2015, WHO International Agency for Research on Cancer classified 2,4-D as a Group 2B carcinogen (possibly carcinogenic to humans).<sup>13</sup> There was strong evidence that 2,4-D induces oxidative stress that can operate in humans and moderate evidence the 2,4-D causes immunosuppression, based on in-vivo and in-vitro studies."<sup>14</sup>

A recent article from the US shows that total herbicide (glyphosate) volume applied to GM corn, cotton and soybeans increased from 240,500,000 lbs/year in 1994 to 301,000,000 lbs/year in 2010.<sup>15</sup>

Dow has applied in the US for new GE seeds.<sup>16</sup> In a press release January 3 2014 Dow noted that *"an astonishing 86 percent of corn, soybean and cotton growers in the South have herbicide-resistant or hard-to-control weeds on their farms,"* as do more than 61 percent of farms in the Midwest. *"Growers need new tools now to address this challenge,"* Dow insisted. According to Tom Philpott: *"The use of 2,4-D—the less toxic half of the infamous Vietnam-era defoliant Agent Orange—had been dwindling for years, but the rise of Roundup®-resistant super-weeds has revived it."* Is that why 2,4-D is registered in the EU and in the UK?

### **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*:<sup>17</sup> *"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 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.<sup>18</sup> In this way one

<sup>12</sup> <http://www.rothamsted.ac.uk/about>

<sup>13</sup> [http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045\(15\)00081-9.pdf](http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045(15)00081-9.pdf)

<sup>14</sup> [http://www.iarc.fr/en/media-centre/pr/2015/pdfs/pr236\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2015/pdfs/pr236_E.pdf)

<sup>15</sup> <http://www.motherjones.com/tom-philpott/2014/01/usda-prepares-greenlight-chemical-war-weeds>

<sup>16</sup> Dow's Enlist GE corn and soybeans are genetically engineered (GE) to be resistant to several herbicides, including one known as 2,4-D.

<sup>17</sup> Van den Bosch, R. *The Pesticide Conspiracy*: USA Doubleday & Company (1978): Dorchester, UK: Prism Press (1980).

<sup>18</sup> Industry's Statistics: British Agrochemical Association London 1976

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."*

The Royal Commission on Environmental Pollution was abolished on 1 April 2011, as part of the Coalition Government's spending cuts. It had been created under Royal Warrant in 1970 to advise the Queen, Government, Parliament and the public on environmental issues.

### **Sustainable Use of Pesticides 21 October 2009: DIRECTIVE 2009/128/EC OF THE EUROPEAN PARLIAMENT <sup>19</sup> What is the EU Directive Advice and the UK Government's Response on 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.

UK 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.

### **The effects of chemicals on the development of the brain**

ONLY ONE CHANCE: How Environmental Pollution Impairs Brain Development - and How to Protect the Brains of the Next Generation by Professor Philippe Grandjean: Oxford University Press.

#### **Chemical brain drain: insidious and pervasive**

*"Today, one out of every six children suffers from some form of neurodevelopmental abnormality. The causes are mostly unknown. Some environmental chemicals are known to cause brain damage and many are suspected of it, but few have been tested for such effects. The brain's development is uniquely sensitive to toxic chemicals and even small deficits may negatively impact our academic achievements, economic success, risk of delinquency, and quality of life. Chemicals such as mercury, polychlorinated biphenyls (PCBs) arsenic and certain pesticides pose an insidious threat to the next generation's brains. When chemicals in the environment affect development of the child's brain, he or she is at risk for mental retardation, cerebral palsy, autism, ADHD, and a range of learning disabilities and other deficits that will remain for a lifetime.*

*The chemical brain drain can be halted to protect the next generation's brainpower. First, we need to control all of the 200 industrial chemicals that have already been proven to affect brain functions in adults, as their effects on the developing brain are likely even worse. We must also demand routine testing for brain toxicity, stricter regulation of emissions of brain-toxic chemicals, and required disclosure on the part of industries that unleash these hazardous chemicals into products and the environment. Decisions can still be made to protect the brains of future generations – and some decisions appear to be seriously overdue. This site aims at furthering information on chemical risks to brain development and ways to protect the next generation against chemical brain drain."*<sup>20</sup>

<sup>19</sup> <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0128>

<sup>20</sup> <http://braindrains.dk/> [www.chemicalbraindrains.info](http://www.chemicalbraindrains.info)

*"This book is a huge gift to humankind from an eminent scientist. Grandjean tells the truth about how we have been ruining the brainpower of each new generation and asks if there are still enough intelligent people in the world today to reverse the problem. **I cannot rid myself of the idea that too many brains have been drained and society is beyond the point of no return.** We must learn from the follies and scandals that Grandjean reveals and stop the chemical brain drain before it is too late."*

#### **How many children's brains in Britain have been drained?**

Academic performance of 15-year-olds has deteriorated since the 1990s said Michael Gove, the former UK Education Secretary; the UK ratings have declined significantly in the Programme for International Student Assessment. PISA is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) in member and non-member nations of 15-year-old school pupils' scholastic performance on mathematics, science, and reading.<sup>21</sup> PISA was first performed in 2000 and then repeated every three years. It is done with a view to improving education policies and outcomes. It measures problem solving and cognition in daily life.

The UK is falling behind global rivals in international tests taken by 15-year-olds, failing to make the top 20 in mathematics, reading and science (3 December 2013). Although not directly comparable, because there have been different numbers of countries taking part, this marks a sustained decline, with the UK having ranked 4<sup>th</sup> in the tests taken in 2000. The UK has made little progress and remains among the average, middle-ranking countries, in 26<sup>th</sup> place for mathematics and 23<sup>rd</sup> for reading, broadly similar to three years ago. Michael Gove said since the 1990s, various test performances in UK schools had been "at best stagnant, at worst declining".<sup>22</sup>

#### **Children in the UK have been exposed to toxic chemicals at home and at school from the earliest stage of development in utero when their brain is only the size of that of an insect**

Dr Henk Tennekes was the first independent researcher to recognize the extreme toxicity of low levels of systemic neonicotinoid insecticides, which have become widespread in the environment.<sup>23</sup> They cause a virtually irreversible blockage of postsynaptic nicotinic acetylcholine receptors (nAChRs) in the central nervous system of insects (to which the human foetus is also exposed). He said the damage is cumulative, and with more exposure more receptors are blocked. He predicted that there may be no safe level of exposure. Many independent scientists have demonstrated that the neonicotinoid insecticides have effects on the mammalian brain, particularly on the foetus. In 2000, Tomiwaza *et al.* showed that neonicotinoids acted on mammalian nicotinic acetylcholine receptors as well as those of insects, but considered that the selective nature of its binding (i.e. less affinity than in insects) made them safe for human exposure.<sup>24</sup> However, they are long acting and are now widespread in the environment. Clothianidin, for example, has a half-life in soil of up to 1386 days so it accumulates in the soil yet farmers apply neonicotinoids blindly the following year. There are several papers that have shown harmful effects of neonicotinoids on mammalian nicotinic acetylcholine receptors. (Li *et al.*,<sup>25</sup> Abou-Donia *et al.*<sup>26</sup> and Kimura-Kuroda *et al.*<sup>27</sup>)

<sup>21</sup> [http://www.cmec.ca/252/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment- \(PISA\)/PISA-2012/index.html](http://www.cmec.ca/252/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment- (PISA)/PISA-2012/index.html)

<sup>22</sup> <http://www.bbc.co.uk/news/education-25187997>

<sup>23</sup> [http://farmlandbirds.net/sites/default/files/Tennekes\\_2010\\_2.pdf](http://farmlandbirds.net/sites/default/files/Tennekes_2010_2.pdf)

<sup>24</sup> <http://pubs.acs.org/doi/abs/10.1021/jf000873c>

<sup>25</sup> <http://www.tandfonline.com/doi/abs/10.1080/15287390701613140#.VdmL8fVhHw>



**When did the Advisory Committee on Pesticides (ACP) become the Expert Committee on Pesticides (ECP)? ANSWER: When the farmers needed Bayer and Syngenta to plead on their behalf on lifting of the European neonicotinoid moratorium on oilseed rape**

On 08/03/2012 Defra launched a consultation seeking views on the future of the ACP and the sister body covering Northern Ireland, the ACPNI. One of the considerations was to abolish the ACP "and to reconstitute it as a new expert scientific committee." The Expert CP was launched on 27 March 2015...just in time for the May 2015 meeting when the Committee intended inviting Syngenta and Bayer to provide input to the NFU's request to discuss the "emergency lifting of the EU moratorium on systemic neonicotinoid insecticides for oil seed rape." There was a delay on publication of these minutes.<sup>28</sup>

Industry representatives explained to the ECP meeting *"that 79% of the oilseed rape crop was under threat or severe risk from cabbage stem flea beetle and aphids. They explained that failure to control these pests could result in significant impacts on yields. For example a significant presence of Turnip Yellow Virus could reduce yields by 6-12%. 'High levels' of infestation were being reported. They also outlined how the difficulty of bringing new products to the EU market meant it was unlikely that alternative pesticides would be available."*

**In contrast, Italy's partial ban on systemic neonicotinoid insecticides in 2008 had been successful**

At a Beekeeping Conference held in Guelph University, Ontario on 12 August 2015,<sup>29</sup> Prof Franco Mutinelli said Italy instituted a partial ban on neonicotinoids in 2008 and it has been extended each year since. No active substances are allowed in seed coatings and the use of neonicotinoids is restricted to specific cases. *"It's been effective"*, he said. *"After the ban there has been strong improvement. The effect of the ban was immediate."* He said corn producers were worried about losing crop yield to disease, *"but that didn't happen,"* he said. *"The ban has been now seven years and crop yield is within the expected range."* Christian Krupke's (University of Purdue) research indicates that the benefit of neonicotinoid treatment to corn seeds only lasts two weeks. Then it washes away with the water and seeps into the soil. Further, he said the pests the neonicotinoids are supposed to fend off are not present in the majority of farms. But they are really toxic to honey bees, he said. *"The benefit of the seed treatments is hard to justify,"* he said. *"We know the status quo just doesn't work."*

**Pan-European epidemiological study on honeybee colony losses EPILOBEE 2012-2014<sup>30</sup>**

The second and final report on the recently finished pan-European epidemiological study on honeybee colony losses (EPILOBEE 2012-2014) was prepared by the EU reference laboratory for bee health. The objective of the two-year programme was to get a state of play of honeybee colony losses on a harmonised basis in each of the participating Member States. This landmark study revealed the UK was suffering one of the worst rates of honeybee colony deaths in Europe.<sup>31</sup> In the cold winter of 2012-13, **29%** of honeybee colonies in the UK died, with only Belgium suffering a higher rate of losses (34%) of the 17 countries

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<sup>26</sup> <http://www.tandfonline.com/doi/abs/10.1080/15287390701613140#.VdmL8fVhHw>

<sup>27</sup> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0032432>

<sup>28</sup> <http://www.theguardian.com/environment/2015/jul/29/bee-harming-pesticide-firms-took-part-key-meeting-ban>

<sup>29</sup> <http://www.guelphmercury.com/news-story/5795639-italy-s-ban-on-neonicotinoids-effective-u-of-g-conference-told/>

<sup>30</sup> [http://ec.europa.eu/food/animals/live\\_animals/bees/study\\_on\\_mortality/index\\_en.htm](http://ec.europa.eu/food/animals/live_animals/bees/study_on_mortality/index_en.htm)

<sup>31</sup> <http://www.theguardian.com/environment/2014/apr/07/britain-honey-bee-colony-deaths-worst-europe-study>

surveyed. By contrast, only 5% of colonies in Italy were lost. Not satisfied with this as proof that neonicotinoids are harmful to bees, Defra, Bayer and Syngenta insisted that a prospective study must be done.

### **Farmers use more carcinogenic weed killer: The Times August 15 2015<sup>32</sup>**

According to Ben Webster, the Times Environment Correspondent: *"Farmers have sharply increased their use of a weed killer that has been classified as 'probably carcinogenic in humans.' More than 1,700 tonnes of glyphosate were sprayed on crops last year, up a third on 2012, according to the Department for Environment, Food and Rural Affairs (Defra). The total area sprayed with the weed killer grew by almost 500,000 hectares to 2.1 million hectares, an area the size of Wales."* Guy Gagen, chief arable adviser for the National Farmers' Union, said that glyphosate usage had probably increased to control black-grass,<sup>33</sup> a weed that is resistant to weaker herbicides. He said: *"No farmer would be wanting to put a chemical on a crop when he doesn't need to."* He added that spraying wheat could result 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."*

### **The Soil Association's campaign against Glyphosate residues in our bread**

On finding that there are glyphosate residues in our bread and the WHO International Agency for Research into Cancer has declared that glyphosate is probably carcinogenic to humans, the Soil Association has launched a campaign NOT IN OUR BREAD.<sup>34</sup> It has been shown that 46% of non-organic food in 2013 contained residues of one or more pesticides and this had increased from 25% in 2003.<sup>35</sup> Another Report: 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.<sup>36</sup> This is all the more concerning because UK farmers have been spraying glyphosate pre-harvest since 1980<sup>37</sup> at the suggestion of a scientist from Monsanto.<sup>38</sup> The National Farmers' Union (NFU), Crop Protection Association (CPA) and Agricultural Industries Confederation (AIC) launched *Healthy Harvest – safeguarding the crop protection toolbox* in June 2014. The NFU and pesticide companies continually defend the use of pesticides for economic reasons and complain at any attempt to restrict the 320 at their disposal. One farmer defended aerial spraying of bracken with a herbicide.<sup>39</sup> CPA, AIC and the NFU, commissioned Andersons to write a Report: The effect of the loss of plant protection products (i.e. pesticides) on UK Agriculture and Horticulture.<sup>40</sup>

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<sup>32</sup> <http://www.thetimes.co.uk/tto/environment/article4528297.ece>

<sup>33</sup> HERBICIDE RESISTANT BLACKGRASS, FIRST SEEN IN 1982 IS NOW FOUND ON 16,000 FARMS IN 34 COUNTIES. This is a glyphosate-resistant super weed, the same as in GM in the US and Japanese Knotweed in the UK. Does the NFU understand super weeds and do they really want GMO technology?

<sup>34</sup> <http://www.soilassociation.org/notinourbread>

<sup>35</sup> [http://www.pan-uk.org/files/pesticides\\_on\\_a\\_plate\\_2013\\_final.pdf](http://www.pan-uk.org/files/pesticides_on_a_plate_2013_final.pdf)

<sup>36</sup> [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)

<sup>37</sup> <http://cereals.ahdb.org.uk/media/185527/is02-pre-harvest-glyphosate-application-to-wheat-and-barley.pdf>

<sup>38</sup> O'Keeffe MG. The control of Agropyron repens and broad-leaved weeds pre-harvest of wheat and barley with the isopropylamine salt of glyphosate; 1980. pp. 53–60. Proceedings of British Crop Protection Conference-Weeds.

<sup>39</sup> [http://www.nfonline.com/healthyharvest\\_final\\_digital/](http://www.nfonline.com/healthyharvest_final_digital/) The impact of losing plant protection products on UK Food Production

<sup>40</sup> [http://www.cropprotection.org.uk/media/89364/andersons\\_final\\_report.pdf](http://www.cropprotection.org.uk/media/89364/andersons_final_report.pdf)



**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**

On 25<sup>th</sup> October 2012 Dr Helen Wallace Director of Genewatch and Pete Riley Campaign Manager GM Freeze published a Press Release:<sup>41</sup> Monsanto meets Ministers to push return of GM crops to Britain. On 26 June 2012, Roundtable discussion on 'Going for Growth': Realising the potential of agricultural technologies in the UK. Attendees<sup>42</sup> 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, the National Farmers Union and the Agricultural and Horticultural Development Board. Here are the links to the Agenda<sup>43</sup> and a summary of the meeting.<sup>44</sup> The ABC had also communicated with the Food Standards Agency (FSA). These organisations or individuals have colluded with industry. George Freeman MP, one of those present, was appointed by David Cameron as Parliamentary Under Secretary of State for Life Sciences at the Department for Business, Innovation and Skills and the Department of Health on 15 July 2014. He has a large portfolio at the Department of Health: nine subjects including genomics, medicine and industry.<sup>45</sup>

**Why is England one of the few countries in Europe that hasn't opted out from GM crops?<sup>46</sup>**

Because the British Government has colluded with industry to try and get GM crops into the UK...but Scotland and Wales **have** opted out. David Cameron received an Open Letter from America<sup>47</sup> from 60 million US citizens urging Europe not to adopt GMO technology for reasons of dangers to human health and biodiversity, but passed it quietly to the then Defra Under Secretary of State, Lord de Mauley. Was this warning ignored for economic reasons, as with farmers?

Extract from the Letter from America: Control of Food: *"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."*

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

On June 12/13, 2013, an Autism conference was held in Edinburgh.<sup>48</sup> Dr Martha Herbert, an expert on Autism from Harvard Medical School, was an invited speaker. Dr Herbert believes the culprit is an environmental toxin in autistic children that interferes with nutrient absorption. *"We need to get them built up again, getting the gut micro-flora sorted out."* In the US in 1970, the incidence was 1 in 10,000 and in 2009 it was 1 in 100. In the UK in 2015 it is 1 in 100.

**Violent Behavior: A Solution in Plain Sight**

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<sup>41</sup> <http://www.genewatch.org/article.shtml?als%5Bcid%5D=569457&als%5Bitemid%5D=571449>

<sup>42</sup> <http://tinyurl.com/9jbce4g>

<sup>43</sup> <http://tinyurl.com/8ahylza>

<sup>44</sup> <http://tinyurl.com/92rrajn>

<sup>45</sup> <https://www.gov.uk/government/ministers/parliamentary-under-secretary-of-state--42>

<sup>46</sup> <http://sustainablepulse.com/2015/10/04/gm-crop-bans-confirmed-in-19-eu-countries/#.VhUMcYtYXww>

<sup>47</sup> <http://www.theletterfromamerica.org/>

<sup>48</sup> <http://www.scotsman.com/lifestyle/autism-unlocking-a-generation-1-2944710>

This paper by Sylvia Onusic,<sup>49</sup> PhD, CNS, LDN, seeks reasons for the increase in violent behaviour in America, especially among teenagers. She identifies malnutrition, vitamin and micronutrient deficiency as potent causes of aberrant behaviour, crime and the spectrum of autistic diseases. Some children have been corrected by a proper diet free of junk food.

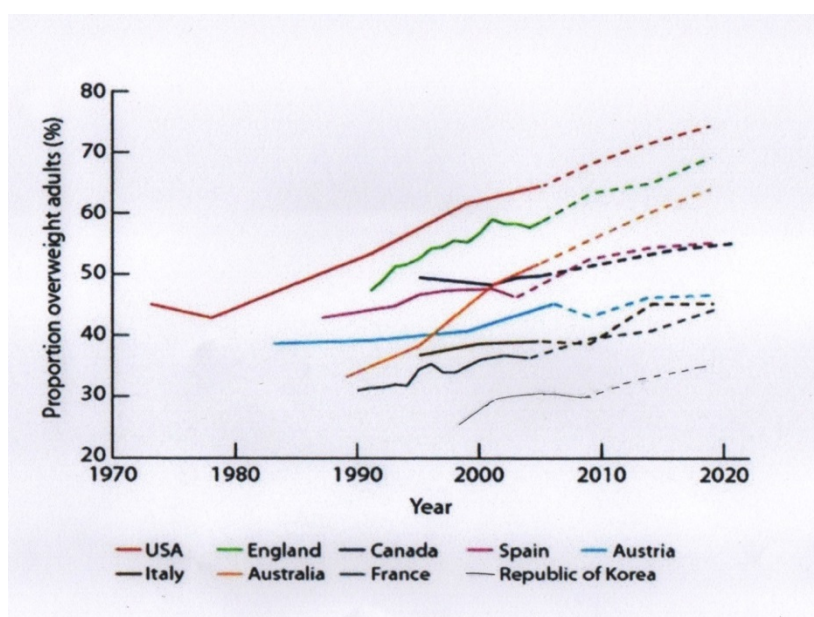
### **Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study<sup>50</sup>**

The Centre for Longitudinal Studies based at the Institute of Education University of London published their latest report on 9 November 2013.

Their key findings of the cohort at age 42 were that:

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

### **Obesity levels in England are second only to the US and are running a parallel course to the US**



### **Historical and projected overweight rates in OECD countries<sup>51</sup>**

Some of the UK population has been exposed to glyphosate residues in foods since 1980, even without growing GM Glyphosate-Tolerant crops. The US has had GM crops since 1996. The third area with the most overweight adults and children is Australia, where obesity levels started to rise steeply in 1990 and by 2000 have overtaken Spain and Canada, both of which have GMs. There are 553 glyphosate products registered in Australia. Glyphosate use on GM crops is accelerating. GM canola was registered in 2003, but bans in NSW and Victoria were lifted in 2008.<sup>52</sup> Canola has been registered to be desiccated since October 2014<sup>53</sup> and sunflowers since 2012.<sup>54</sup> However, the Commonwealth Scientific and Industrial

<sup>49</sup> <http://www.westonaprice.org/environmental-toxins/violent-behavior-a-solution-in-plain-sight/pdf>

<sup>50</sup> [Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study at age 42](http://www.westonaprice.org/environmental-toxins/violent-behavior-a-solution-in-plain-sight/pdf)

<sup>51</sup> Healthy Choices OECD Health Ministerial Meeting, Paris, 7-8 October 2010

<http://www.oecd.org/health/ministerial/46098333.pdf>

<sup>52</sup> <http://www.sbs.com.au/news/article/2012/11/15/factbox-gm-foods-australia>

<sup>53</sup> <http://www.farmweekly.com.au/news/agriculture/cropping/general-news/new-canola-weed-control-option/2714416.aspx>

<sup>54</sup> [http://www.australianoilseeds.com/about\\_aof/news/glyphosate\\_as\\_a\\_desiccant\\_in\\_sunflowers](http://www.australianoilseeds.com/about_aof/news/glyphosate_as_a_desiccant_in_sunflowers)

Research Organisation (CSIRO) is Australia's pre-eminent public scientific research body. *"Although ostensibly publicly funded, CSIRO has, in reality, been encouraged to get 30% of its funding from business, with the CSIRO top management encouraging its staff to go to 40%."* According to John Stocker, CSIRO's former Chief Executive: *"Working with the transnationals makes a lot of sense, in the context of market access. There are very few Australian companies that have developed market access in the United States, in Europe and in Japan, the world's major marketplaces. Yes, we do find that it is often the best strategy to get into bed with these companies."*<sup>55</sup>

#### **US Kids' Health Report October 2012 A Generation in Jeopardy: How pesticides are undermining our children's health & intelligence.**<sup>56</sup>

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

#### **Doesn't Genetic Modification follow what nature does already?**

In April 2004 Dr Maewan Ho, Geneticist and Co-Director of the Institute of Science in Society was interviewed by Anastasia Stephens, a journalist from the Evening Standard.<sup>57</sup>

AS *"Doesn't genetic modification follow what nature does already - the evolutionary principle of genetic selection?"*

MWH *"No, GM breaks all the rules of evolution, it short circuits evolution altogether. It bypasses reproduction, creates new genes and gene combinations that have never existed, and is not restricted by the usual barriers between species."*

#### **Glyphosate preparations authorised by Chemicals Regulation Directorate (CRD)**

In 2013, the CRD listed on its approved pesticides database 187 different glyphosate products that were licenced to be sold as suitable for the amateur gardener.<sup>58</sup> Glyphosate preparations for professional use are even more: 211. This is for Amenity Usage. This is why it is so critical to industry that glyphosate is re-registered in Europe in December 2015.

#### **However, the extent of glyphosate usage on 'amenity' land in the UK is 'unknown'**

The CRD commissioned a Report Determining the Usage and Usage Patterns of Amenity Pesticides Across the UK, from Risk & Policy Analysts in association with Britt Vegetation Management.<sup>59</sup> It was published in February 2011.

The customers for Contractors were: all local authorities across the UK; transport organisations (including the Highways Agency, Network Rail, British Waterways and airport

<sup>55</sup> <http://www.gmwatch.org/latest-listing/1-news-items/13325-csiro-in-bed-with-multinationals>

<sup>56</sup> <http://www.panna.org/publication/generation-in-jeopardy>

<sup>57</sup> <http://www.i-sis.org.uk/GMmyths.php>

<sup>58</sup> <https://secure.pesticides.gov.uk/pestreg/prodlist.asp?pageno=1&origin=prodsearch>

<sup>59</sup> Amenity\_Pesticide\_Report\_Final Feb 2011.pdf

management companies); Ministry of Defence; sports and leisure clubs and facilities (including golf clubs, football clubs, cricket clubs, rugby clubs, bowling greens, leisure centres); conservation bodies (including the National Trust, local Wildlife Trusts, the RSPB, Natural England, National Park Authorities, Countryside Council for Wales, Scottish Natural Heritage and the Environment and Heritage Service Northern Ireland); industrial premises, factories and utility companies; and contracted third parties.

The surface types considered were: amenity grass; sports turf; amenity woodland including tree and shrub beds; riparian and aquatic areas; roads; and other hard surfaces, including gravel/ballast surfaces, pavements and kerbs.

From the 240-page Report, of which more than half were questionnaires, it was apparent that:

- So few questionnaires had been returned that it wasn't possible to apply statistics<sup>60</sup>
- The authors had to extrapolate from the 2007 figures
- To supplement the absence of information they undertook detailed case reports
- The ban on diuron meant that Roundup® would be anticipated to take its place.

*"In 2007 it was estimated that for the 2006 calendar year, 747 tonnes of active ingredient were used in plant protection products by the amenity sector, 679 tonnes (91%) of which were herbicides and 68 tonnes (9%) were non-herbicides (algicides, fungicides, insecticides and moss-killers)."*

### **The Agrochemical Industry's herbicides have turned UK garden escapes into thugs**

Japanese knotweed *Reynoutrie japonica* (syn. *Polygonum cuspidatum*) was introduced into Europe in the mid-16<sup>th</sup> Century by an amateur botanist from the Netherlands, Van Reynoutrie (syn: Karel van Sint Omaars).<sup>61</sup> The myth that it was brought in by the Victorians in the late 19 Century, as stated by BBC Wales, has been deliberately spread, presumably by the pesticides industry.<sup>62</sup> For about 500 years it appears to have caused minimal trouble, until the introduction of chemical herbicides in the early 1900s. However, even in the 1969 edition of the Marshall Cavendish Illustrated Encyclopedia of Gardening, knotweed was still being recommended as a suitable plant for the larger garden. In fact, with regard to the compact variety: *"It is the most desirable garden form having received the RHS's Award of Merit."* A member of the Balsam species *Impatiens royalei* (syn: *I glandulifera*) that was similarly recommended for garden cultivation has also become a monster on waste ground in urban situations. Chemical herbicides: In 1941 2,4-D was discovered by scientists in the US and Rothamsted Research UK at the same time. It was commercialized in 1946, atrazine in 1958, dicamba in 1967 and glufosinate in 1991. Glyphosate was introduced into Europe in 1974 and became a global best-selling herbicide because the public was told by industry and the regulators that it was 'safe.' The public believed these assurances of safety therefore it was used repeatedly in the same areas such that weeds developed a resistance to it. Richard Mabey said: *"Its rampaging spread across Britain in the late 1970s and 80s is regarded as a parable of the dangers of casually introducing alien species into the countryside."*<sup>63</sup> However, Pearman and Walker in 2009 suggested the problem of alien species could be with our perception. They occur mainly in urban and suburban areas, in disturbed or abandoned ground where their root systems can take hold.<sup>64</sup> It is one of the first species to colonize

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<sup>60</sup> No replies were returned from Wales

<sup>61</sup> Van Reynoutrie (or Karel van Sint Omaars) (1533-1569) H. Wille: The discovery of the scientific heritage of Karel van Sint Omaars (1533-1569). The Libri Picturati a 16-30 in the Jagiellon Library in Krakow. Scientiarum Historia 22 (1996) 2 67.

<sup>62</sup> [http://news.bbc.co.uk/1/hi/wales/south\\_west/8557491.stm](http://news.bbc.co.uk/1/hi/wales/south_west/8557491.stm) Winston Smith in Orwell's 1984 was employed to re-write history; presumably this is the task of lobbyists.

<sup>63</sup> Flora Britannica: Richard Mabey 1996; page 106.

<sup>64</sup> Pearman & Walker: Alien plants in Britain: a real or imagined problem? British Wildlife October 2009.

settled volcanic lava, and can tolerate extreme levels of acidity and mineral pollution.<sup>65</sup> Because of their strong underground root systems we have unwisely employed repeated applications of the same chemicals to eradicate them. As a result of Roundup® being sprayed annually (from April to October) on Japanese knotweed in the valleys around Swansea, our Nature Reserve has been poisoned.<sup>66</sup> We asked the CRD to instruct Swansea City Council to stop spraying, but the HSE Chief Scientist declined, saying that the European Commission was currently reviewing the renewal of glyphosate's registration in Europe.

### **Is there a Depopulation Agenda?**

The élite might think that they can survive by eating organic food, as suggested by Monsanto's CEO Hugh Grant, but they cannot evade the pollution of water, soil and air by these chemicals...and the total loss of biodiversity, without which human life would collapse. These silent poisons are toxic to rich and poor alike; they do not distinguish between Presidents or Prime Ministers, media Moghuls or their journalists, Monsanto Executives or Pesticide Regulators, Lords, MPs or citizens of the UK, Members of US Congress, the House of Representatives or US citizens. None of them is guaranteed to be safe.

### **Accelerated modern human-induced species losses: Entering the sixth mass extinction<sup>67</sup>**

In Science Advances June 2015, Ceballos *et al* calculated the average rate of vertebrate losses over the last century and compared it with the background rate of losses. They estimated it to be up to 114 times the background rate. They said that this rate of loss of biodiversity indicated that a sixth extinction is already underway. The authors described themselves variously as ecologists, field biologists, paleo-biologists or population biologists. However, all had two common beliefs. That the conservation of natural ecosystems is essential to human health, but that the accelerated losses of biodiversity were as a result of human activity.

### **UK Pesticides Campaign founded by Georgina Downs in 2001<sup>68</sup>**

*"People move to the countryside thinking it will be a healthy environment to bring up their children and do not know about the dangers and risks inherent in the spraying of poisonous chemicals on surrounding fields, until they themselves suffer adverse effects on their health."* -- Georgina Downs.

Georgina Downs' summary of written evidence to the Parliamentary Environmental Audit Committee on Insects and Insecticides: <sup>69</sup> (link to the full evidence number 28).

Read Georgina's recent article in *The Ecologist*:

**It's not just glyphosate and neonicotinoids – we need a pesticide-free future.<sup>70</sup>**

Rosemary Mason 22 October 2015

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<sup>65</sup> Richard Mabey: Weeds: The Story of Outlaw Plants. Profile Books 2010

<sup>66</sup> [http://www.i-sis.org.uk/How\\_Roundup\\_Poisoned\\_My\\_Nature\\_Reserve.php](http://www.i-sis.org.uk/How_Roundup_Poisoned_My_Nature_Reserve.php)

<sup>67</sup> <http://advances.sciencemag.org/content/advances/1/5/e1400253.full.pdf>

<sup>68</sup> <http://www.pesticidescampaign.co.uk/>

<sup>69</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvaud/writev/668/contents.htm>

<sup>70</sup>

[http://www.theecologist.org/News/news\\_analysis/2848400/its\\_not\\_just\\_glyphosate\\_and\\_neonicotinoids\\_why\\_we\\_need\\_a\\_pesticidefree\\_future.html](http://www.theecologist.org/News/news_analysis/2848400/its_not_just_glyphosate_and_neonicotinoids_why_we_need_a_pesticidefree_future.html)