From: JOHN LITTLE
To: P65Public Comments
Cc: JOHN LITTLE
Subject: "NOIL". Bio-Accumulation of "Glyphosate" Chemicals and its Developmental Toxicity.
Date: Monday, October 19, 2015 3:57:28 AM
Attachments: Fig 9 liver cancer.pdf
Fig 10 kidney cancer.pdf
Fig 11 urinary bladder.pdf
Fig 12 thyroid inc.pdf
Fig 16 diabetes inc.pdf
Fig 21 renal failure.pdf
Fig 22 autism.pdf
Fig 23 dementia.pdf
Fig 27 intestinal deaths.pdf
autism 6-yr-olds.pdf

Your Reference: Proposition 65.

World Health Organization's(WHO) experimental research with rats into 'Glyphosate and AMPA in Drinking–Water' found that an isotope administered in a single daily dose of [14C] glyphosate on day seven was widely distributed throughout the body of the rat with the highest concentration in the bones. The AMPA was approx 20% absorbed (1).

Prof Monika Krueger et al 2014's research 'Detection of Glyphosate in Malformed Piglets'found presence of glyphosate in the brain, heart, kidneys, lungs, liver etc of these piglets and her further research 'Detection of Glyphosate Residues in Animals and Humans 2014' resulted in her observing residues in the intestine, liver, muscles, spleen and kidney in cows. Krueger, in taking human urine samples for glyphosate found that chronically diseased people had higher levels of glyphosate than those consuming a conventional diet and those on a conventional diet had higher levels than those on an organic diet. Her further research awaiting publication will show the presence of glyphosate in milk from cows fed on GM soybeans (2).

A paper by Monsanto Brussels 'Evaluation of the impact of glyphosate residues in food on human health' states that 'The results show that glyphosate and AMPA do not transfer to animal tissues; at the expected 1x dose level, glyphosate residues were <0.05 mg/kg in all tissues and <0.025 mg/kg

in milk and eggs'.

In the 7-1-12 edition of the US Code of Federal Regulation glyphosate tolerances for residues are listed (including its metabolites and degradates). There is no tolerance listed for milk. (4)

Although it is widely accepted that glyphosate inhibits the production of amino acids tryptophan, phenylalanine and tyrosine, which result in plant death, little or nothing is reported on the effects of their deficiency in humans and animals from food and feed crops that have been subject to glyphosate chemical applications. Considering the importance of milk to an infant's diet is it acceptable that infants should be allowed to consume milk from cows fed on GM feed? In 2000 the US EPA in its chronic dietary exposure assessment of glyphosate considered that infants under one year old represented the most highly exposed population subgroup. (5)

You will be aware that the presence of glyphosate in human breast milk has been observed in America (6).

WHO's IARC found that glyphosate was a possible cause of the cancer Non Hodgkin's Lymphoma (7). Krebs Cancer Germany makes an international comparison of age-standardized incidence rates of 13 peer countries, including the USA for a range of cancers. Based on 2009-2010 data the USA incidence rates were the highest or second highest for both males and females in respect of ICD 10 of the following listed cancers: C22 Liver, C54-55 Uterus, C64 Kidney, C73 Thyroid Gland, C82-85 Non-Hodgkin's Lymphoma, C90 Multiple Myeloma and C91-C95 Leukemias.

The United States Preventative Services Task Force indicates that about two in three adults have been tested for Colorectal cancer, the prime method being colonoscopy to find and remove precancerous polyps (8). This was in 2013 when the SEER estimate for new cases was 142,820 for this cancer. The

observation must be made this is an indictment of theAmerican GM diet. After the Second World War Americans were the envy of the World for their health and diet – what has gone wrong? This letter postulates that Anthony Samsel and Stephanie Seneff provide scientific analysis as to why glyphosate residues damage good human gut bacteria and are the causation of many modern diseases which includes cancer, diabetes and autism (9).

Nancy Swanson's research into the increased use of glyphosate on GM crops and the increased incidence of cancers of the liver, kidney, thyroid and intestinal infections are appended to this letter along with like research for diabetes, renal failure and autism; her research shows marked collations.

There can be little doubt that the excessive use of glyphosate chemicals being sprayed by manual means has led to the deaths from an epidemic of Kidney disease of some 20,000 in Sri Lanka and an estimated 400,000 people affected (10). As for mentioned Krueger found glyphosate in the kidneys of deformed piglets and dairy cattle.
An important observation was made by Channa Javasumana et al that incidence in Sri Lanka was largely confined to hard water areas (11). Fordyce et al researching endemic goitre in Sri Lanka suggests that trace element deficiencies of iodine and selenium are relevant (12). Sussman noted that in comparison to a healthy population both hemodialysis and peritonaeal patients are deficient in selenium (13). Whether or not iodine and selenium deficiencies are co-factors in kidney disease should be researched. You will be aware that the incidence is higher in southern California (14), a hard water area (15) and may have low bio-availability in selenium, for instance the shale area of Eagle Ford (16). The biodegradability of glyphosate is greatly reduced in hard water areas and may persist for years and longer in the soil (17).

In 2013 there was a major review:US Health in International Perspective: 'Shorter Lives –Poorer Health,' in which the problems of high US Infant Mortality and Low Birth Weight were identified. The authors noted that between 2005-2009 8.2% of live newborns in the US had a birth-weight of less than 2,500g, which with the exception of Japan was the lowest in 17 peer countries. MacDorman & Mathews noted that one in eight births were pre-term in 2005, comparing badly to Europe, where one in 16 or better could be observed (18). The US Centers for Disease Control (CDC) notes that congenital heart defects affect nearly 40,000 births and are the most common type of birth defect (19). On 2012 data CDC estimate that about half of US adults suffer from a chronic disease and one in four had two or more (20).

The US CDC state an infant mortality rate of 6.1 infant deaths per 1,000 live births, higher than in any other 27 wealthy countries. However California's infant mortality rating in 2011 was 4.8 according to the California Department of Public Health (CDPH) a figure still higher than European countries. This improvement on the National figure could in a significant part be down in part to CDPH providing the Fluid Milk List, although there is no notation as to the feed or water requirements of the dairy cows concerned. Dairy farming is of economic importance to California and one assumes that Livestock Water Recycling (LWR) is in place, but is the hazard of excreted glyphosate dealt with adequately, especially in hard water areas? Your Office of Environmental Health Hazard Assessment's decision in 2007 to set a Public Health Guard (PLG) for glyphosate of 1 mg/L for drinking water appears to be more a concession to the LWR program than protecting the health of Californians. As you will be aware the federal Maximum Contaminant Level for drinking water is lower at 0.7 mg/L (21) and a great deal higher than set by the EU, namely 0.1 mcg/L (22). Excessive use of glyphosate heightens the risk of contaminants in commercial glyphosate, which can lead to the formation of a N-nitroso derivative, namely N-nitrosoglyphosate known for its toxicity (23).

Another outcome is the epidemic of autism in young children. Nancy Swanson informs by 2010 there were over 30,000 cases of autism in the US for children under seven, Swanson correlates the prevalence of autism for 6 year olds to glyphosate applied to GM corn and soy crops having a Pearson coefficient of 0.9972 (her data is appended along with her 6 – 21 year olds autism research (Fig 22). In 2009 the US EPA anticipated that glyphosate would require two studies, acute and sub chronic neurotoxicity - by 2013 these studies remained extant and I assume still are)? (24)

If you consider that you have insufficient evidence in regard to developmental toxicity brought about by glyphosate formulations, I commend the post-mortem of infants, including still-born, who have died from congenital malformations to ascertain whether or not there is the presence of glyphosate/nitrosoglyphosate.

I would be grateful to be informed of the outcome of Proposition 65 in regard to glyphosate in California.

Yours Sincerely

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References:

1. WHO/SDE/WSH/03.04/97 (updated June 2005): Glyphosate and AMPA in drinking water. See 'Kinetics and metabolism in laboratory animals and humans'.
2. Monika Krueger's recent research on this, awaiting publication, shows a mean of 8.91ng/ml, N=57, standard deviation: 12.83ng/ml, median: 3.26. This would be indicative, according to Dr Michael Antoniou, of a level for glyphosate well above that permitted for EU drinking water.

3. Spare.
4. US Code of Federal Regulations: Protection of Environment 40 CFR Ch 1
Para 180.364 Glyphosate: tolerances for residues.
5 US EPA 2009: Glyphosate Summary Document Registration Review: Initial Docket.
6. Moms Across America 4 August 2015 report that Pennsylvania's GMO Free Lancaster County organization announced that 1 out of 12 mothers tested had glyphosate in their blood at a detectable level of 75 ppb.
7. International Agency for Research on Cancer Volume 112: Some organophosphate insecticides and herbicides: tetrachlorvinphos, parathion, malathion, diazinon and glyphosate.
8. CDC 2013: Colorectal cancer screening rates remain low.
9. Antony Samsel & Stephanie Seneff 2013: Glyphosate's suppression of cytochrome P450 enzymes and amino acid biosynthesis by the gut micro biome: Pathways to modern diseases.
10. ISIS Report 09/04/04: Dr Eva Sirinathsinghji: Sri Lanka Partially Bans Glyphosate for Deadly Kidney Epidemic.
11. Channa Jayasumana et al 2014: Glyphosate, Hard Water and Nephrotoxic Metals: Are They the Culprits Behind the Epidemic of Chronic Kidney Disease of Unknown Etiology in Sri Lanka?
12. FM Fordyce et al 2000: Selenium and Iodine in soil, rice and drinking water in relation to endemic goitre in Sri Lanka.
13. EJ Sussman 2014: Remember Selenium? Evaluating One Trace Element at a Time. Renal Nutrition Forum Vol 33 No 2.
14. CHIS 2011- 2012 Adult Survey.
15. USGS: Water Hardness and Alkalinity.
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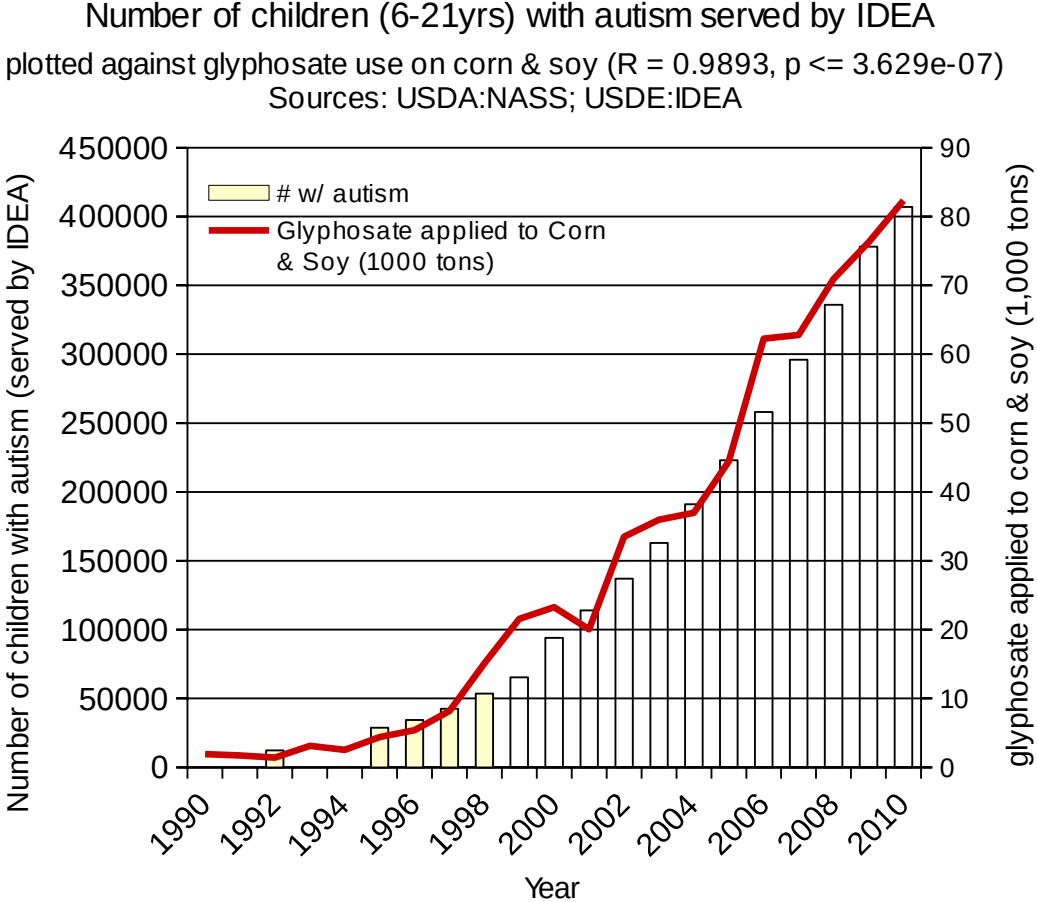
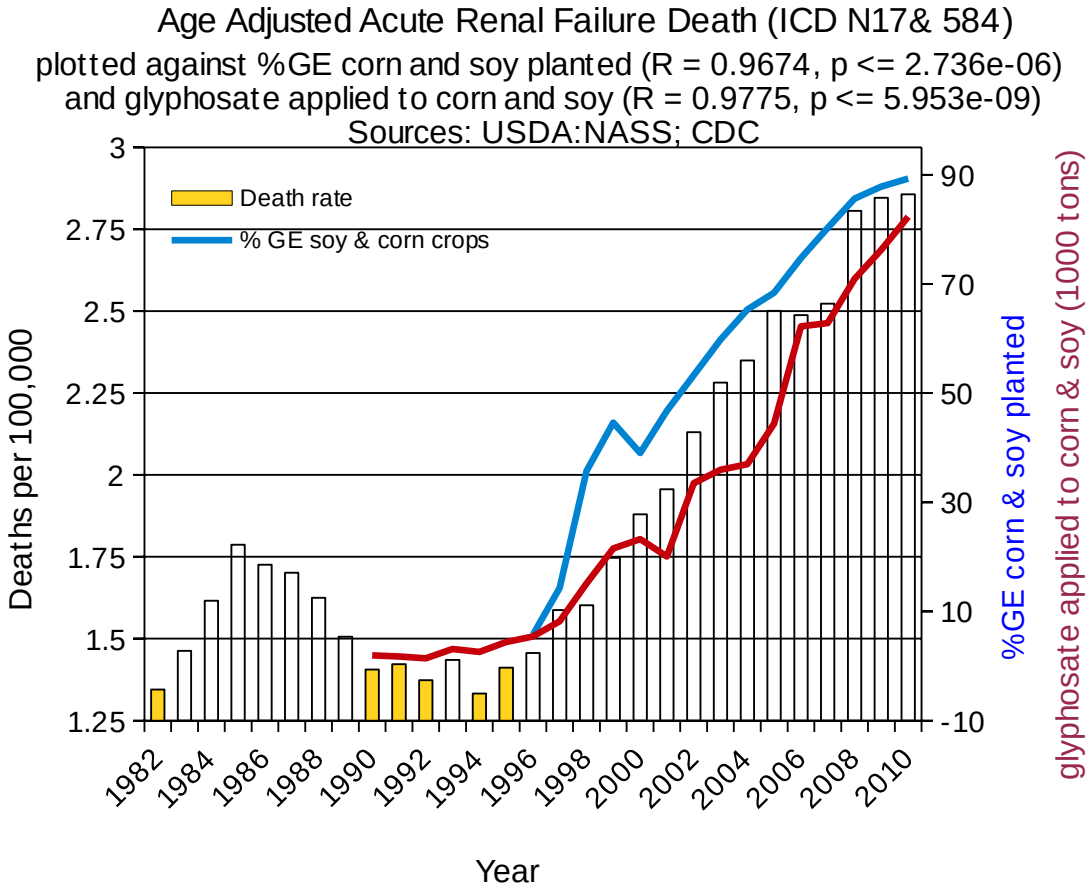
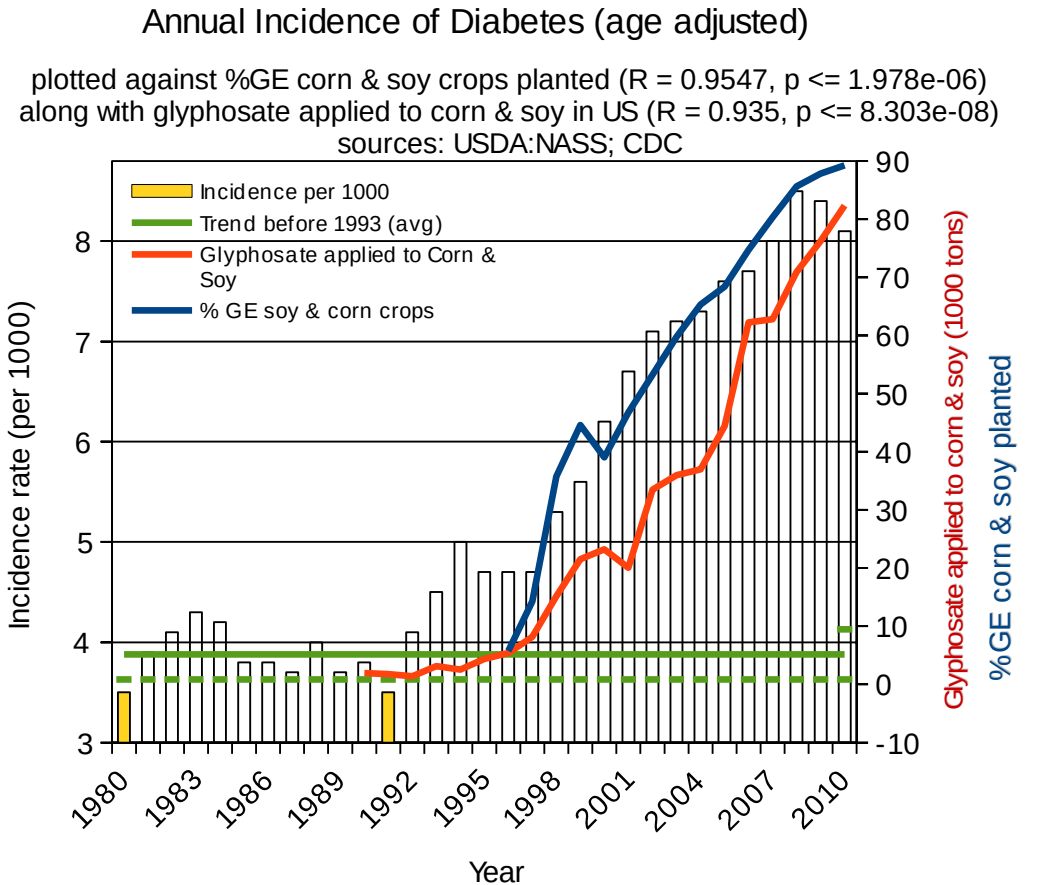
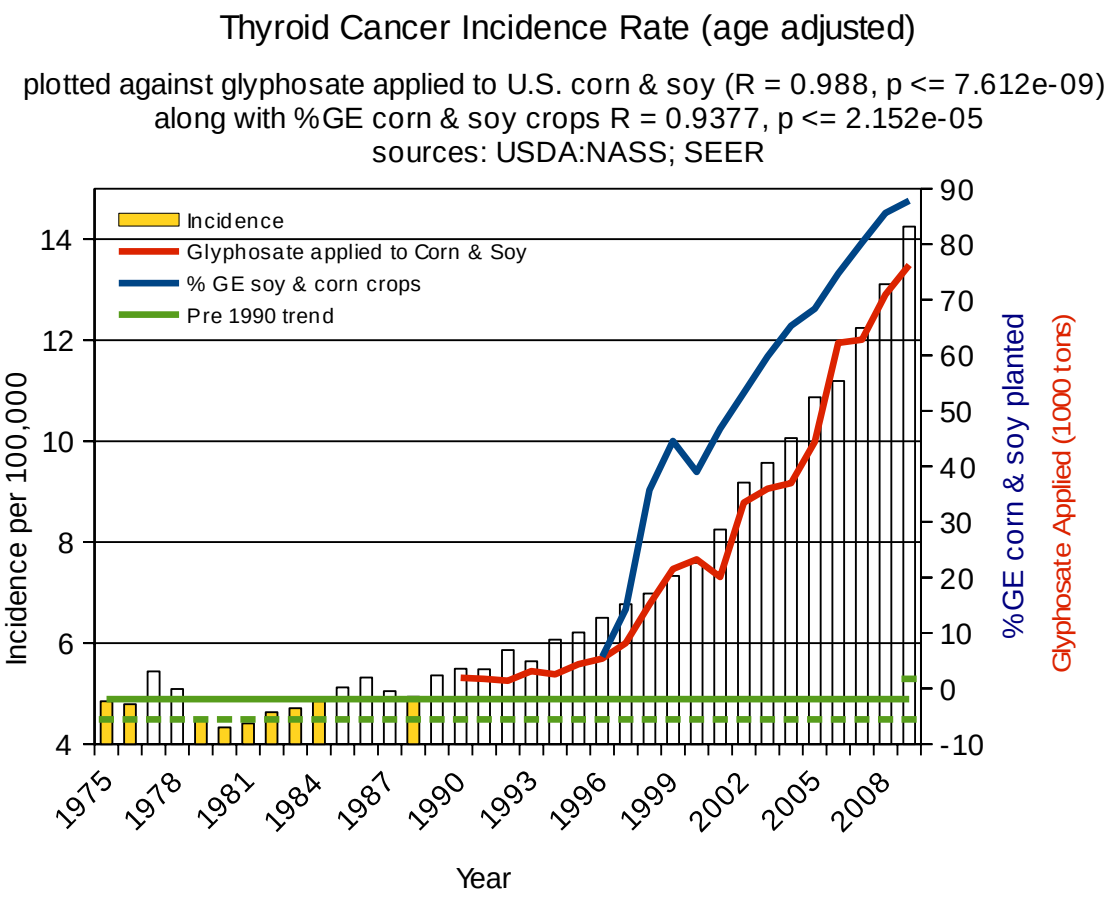
17. NS Nomura & HW Hilton 2006: The adsorption and degradation of glyphosate in five Hawaiian sugarcane soils. See also Ref 11 above.
18. MacDorman & Mathews 2010: Behind international rankings of infant mortality: hoe the United States compares with Europe.

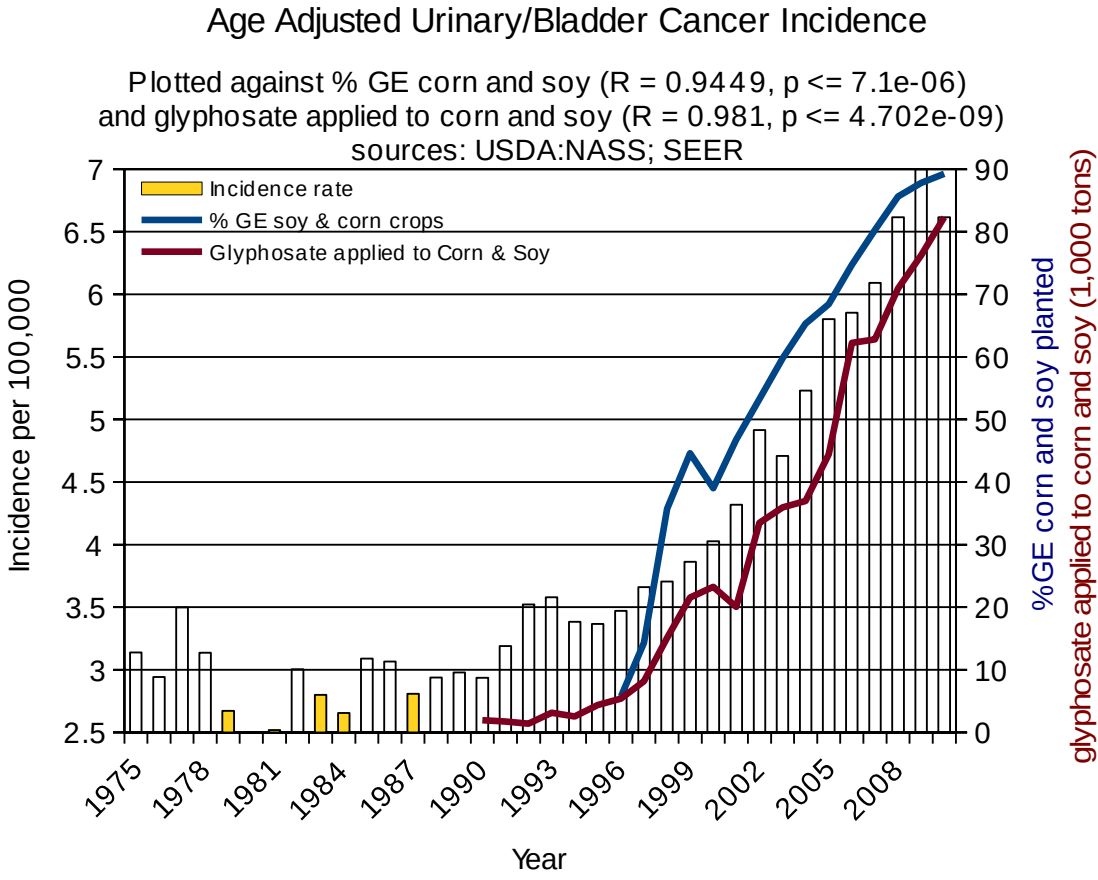
19. CDC: Key findings: Mortality resulting from Congenital Heart Disease among Children and Adults in the United States, 1999-2006.
20. CDC INFO 16 October 2015, 13.50.
21. OEHHA Water Summary for Glyphosate.
22. Glyphosate Task Force 2015: Glyphosate in Surface Water.
23. Pickering Laboratories Inc: Analysis of N-Nitroso Glyphosate in Glyphosate Samples.
24. USA EPA June 2009: Glyphosate Summary Document Registration Review: Initial Docket.


Number of children (6-21yrs) with autism served by IDEA
plotted against glyphosate use on corn & soy (R = 0.9893, p <= 3.629e-07)
Sources: USDA:NASS; USDE:IDEA
w/ autism
Glyphosate applied to Corn & Soy (1000 tons)
Number of children with autism (served by IDEA)
glyphosate applied to corn & soy (1,000 tons)
Year
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
90
80
70
60
50
40
30
20
10
0
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010


Age Adjusted Acute Renal Failure Death (ICD N17& 584)
plotted against %GE corn and soy planted (R = 0.9674, p <= 2.736e-06)
and glyphosate applied to corn and soy (R = 0.9775, p <= 5.953e-09)
Sources: USDA:NASS; CDC
Death rate
% GE soy & corn crops
Deaths per 100,000
%GE corn & soy planted
glyphosate applied to corn & soy (1000 tons)
Year
3
2.75
2.5
2.25
2
1.75
1.5
1.25
90
70
50
30
10
-10
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010

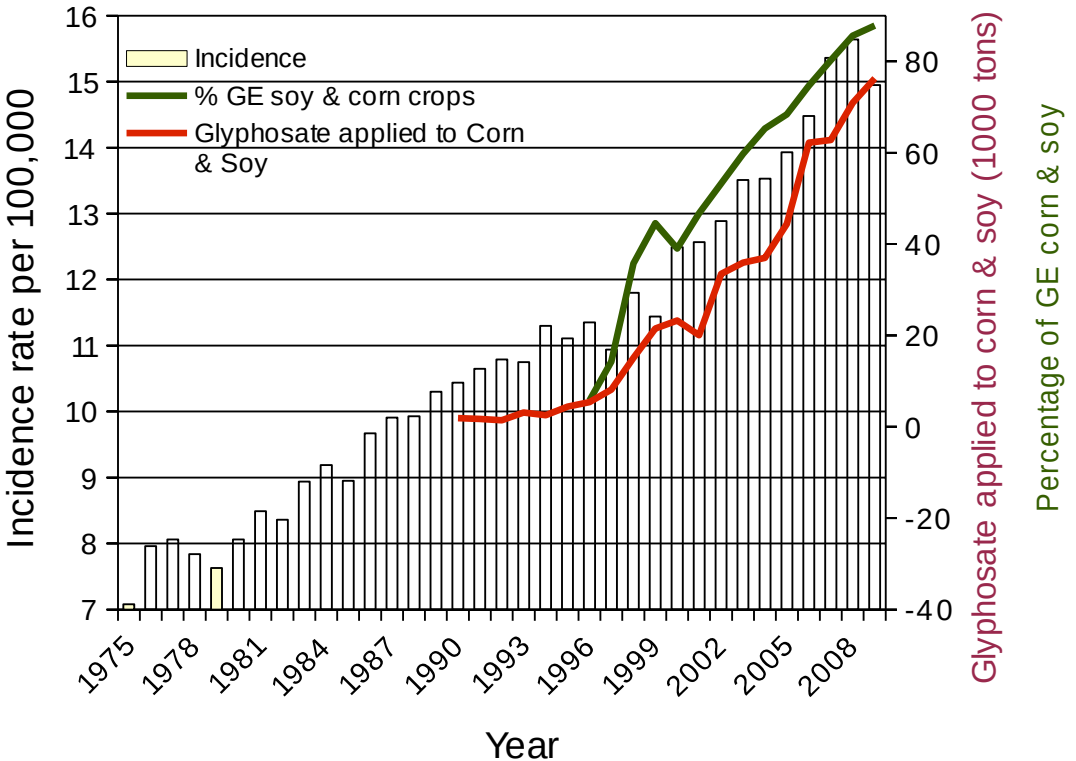

Annual Incidence of Diabetes (age adjusted)
plotted against %GE corn & soy crops planted (R = 0.9547, p <= 1.978e-06)
along with glyphosate applied to corn & soy in US (R = 0.935, p <= 8.303e-08)
sources: USDA:NASS; CDC
Incidence per 1000
Trend before 1993 (avg)
Glyphosate applied to Corn & Soy
% GE soy & corn crops
Incidence rate (per 1000)
Glyphosate applied to corn & soy (1000 tons)
%GE corn & soy planted
Year
3
4
5
6
7
8
-10
0
10
20
30
40
50
60
70
80
90
1980
1983
1986
1989
1992
1995
1998
2001
2004
2007
2010


Thyroid Cancer Incidence Rate (age adjusted)
plotted against glyphosate applied to U.S. corn & soy (R = 0.988, p <= 7.612e-09)
along with %GE corn & soy crops R = 0.9377, p <= 2.152e-05
sources: USDA:NASS; SEER
Incidence
Glyphosate applied to Corn & Soy
% GE soy & corn crops
Pre 1990 trend
Incidence per 100,000
%GE corn & soy planted
Glyphosate Applied (1000 tons)
Year
4
6
8
10
12
14
-10
0
10
20
30
40
50
60
70
80
90
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008


Age Adjusted Urinary/Bladder Cancer Incidence
Plotted against % GE corn and soy (R = 0.9449, p <= 7.1e-06)
and glyphosate applied to corn and soy (R = 0.981, p <= 4.702e-09)
sources: USDA:NASS; SEER
Incidence rate
% GE soy & corn crops
Glyphosate applied to Corn & Soy
Incidence per 100,000
%GE corn and soy planted
glyphosate applied to corn and soy (1,000 tons)
Year
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
90
80
70
60
50
40
30
20
10
0
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008

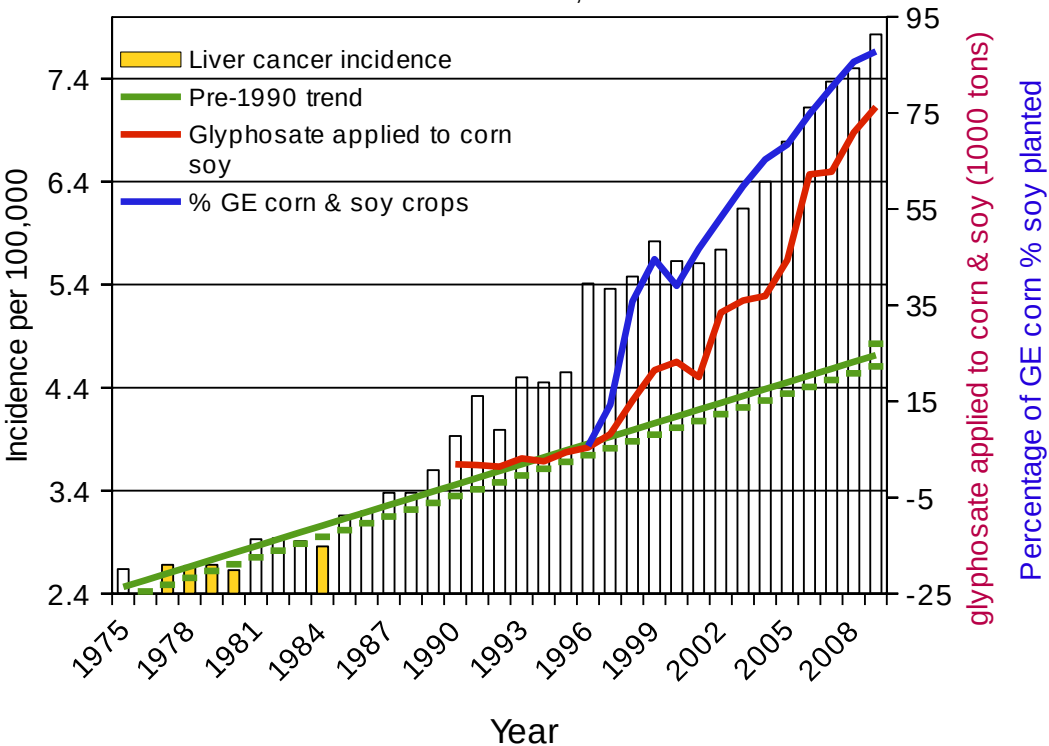
Age Adjusted Kidney and Renal Pelvis Cancer Incidence

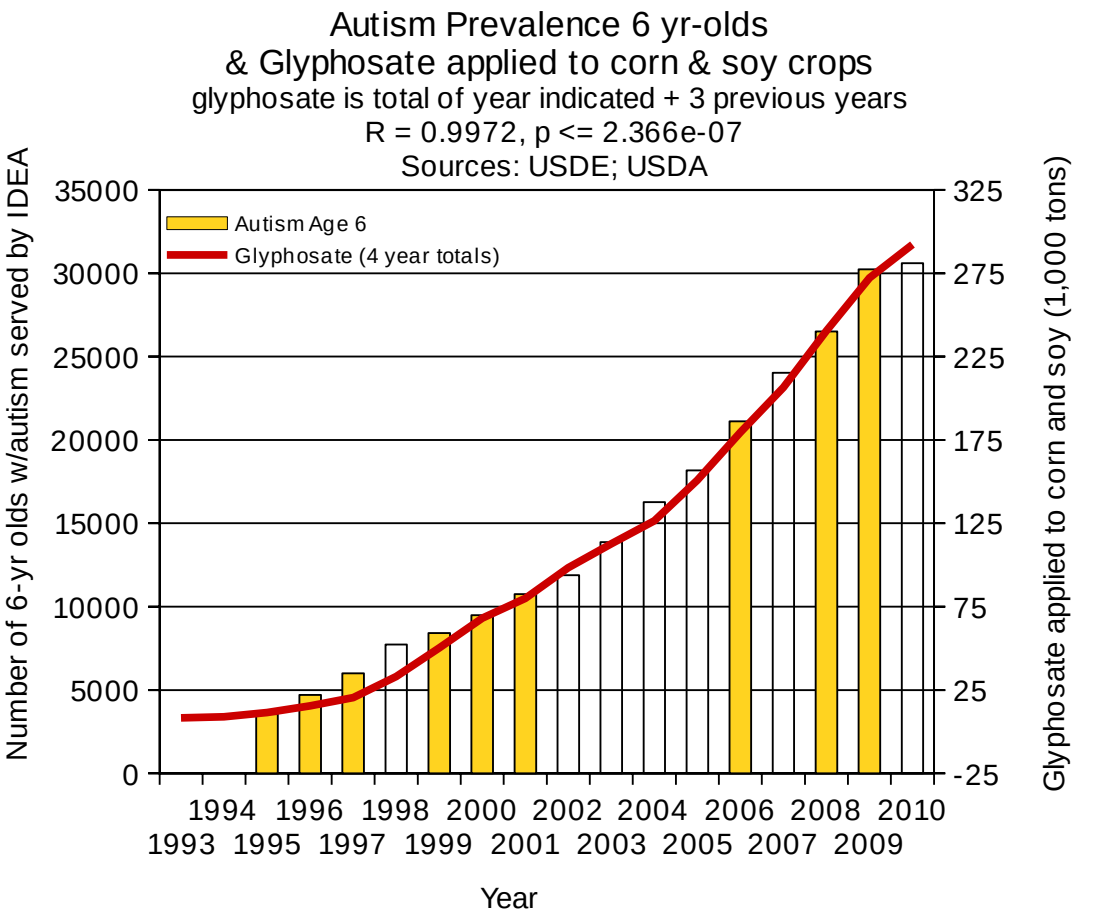
Plotted against glyphosate applied to corn & soy (R = 0.9734, p <= 1.98e-08)
along with %GE corn and soy planted in U.S. (R = 0.94, p <= 1.978e-05)
sources: USDA:NASS; SEER

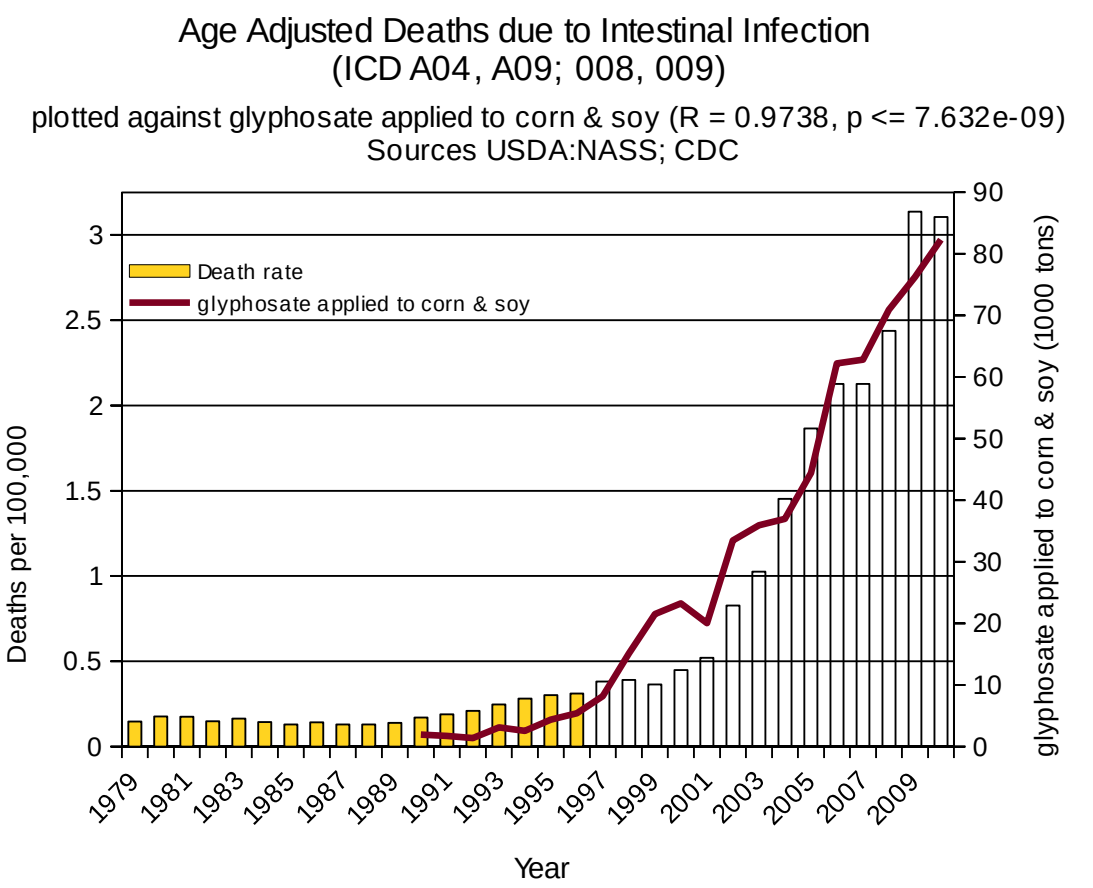


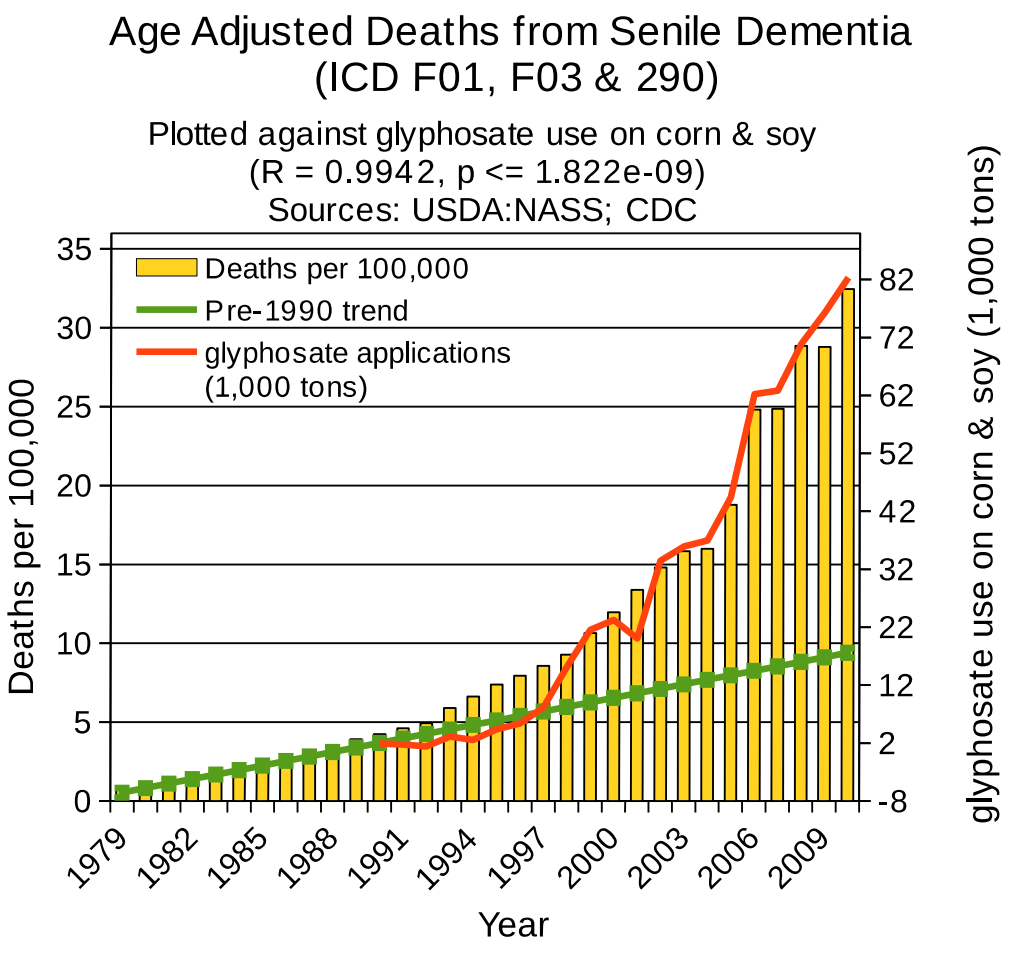
Liver and Intrahepatic Bile Duct Cancer Incidence (age adjusted)

plotted against glyphosate applied to corn & soy (R = 0.9596, p <= 4.624e-08)
along with %GE corn & soy planted in U.S. (R = 0.9107, p <= 5.402e-05)
sources: USDA:NAS; SEER




Autism Prevalence 6 yr-olds
& Glyphosate applied to corn & soy crops
glyphosate is total of year indicated + 3 previous years
R = 0.9972, p <= 2.366e-07
Sources: USDE; USDA
Autism Age 6
Glyphosate (4 year totals)
Number of 6-yr olds w/autism served by IDEA
Glyphosate applied to corn and soy (1,000 tons)
35000
30000
25000
20000
15000
10000
5000
0
325
275
225
175
125
75
25
-25
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year


Age Adjusted Deaths due to Intestinal Infection
(ICD A04, A09; 008, 009)
plotted against glyphosate applied to corn & soy (R = 0.9738, p <= 7.632e-09)
Sources USDA:NASS; CDC
Death rate
glyphosate applied to corn & soy
Deaths per 100,000
glyphosate applied to corn & soy (1000 tons)
Year
0
0.5
1
1.5
2
2.5
3
10
20
30
40
50
60
70
80
90
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009


Age Adjusted Deaths from Senile Dementia
(ICD F01, F03 & 290)
Plotted against glyphosate use on corn & soy
(R = 0.9942, p <= 1.822e-09)
Sources: USDA:NASS; CDC
Deaths per 100,000
Pre-1990 trend
glyphosate applications
(1,000 tons)
Deaths per 100,000
glyphosate use on corn & soy (1,000 tons)
Year
0
5
10
15
20
25
30
35
-8
2
12
22
32
42
52
62
72
82
1979
1982
1985
1988
1991
1994
1997
2000
2003
2006
2009