FOOD ADDITIVES TO AVOID

Riordan Clinic | Dr. Anne Zauderer

Riordan Clinic

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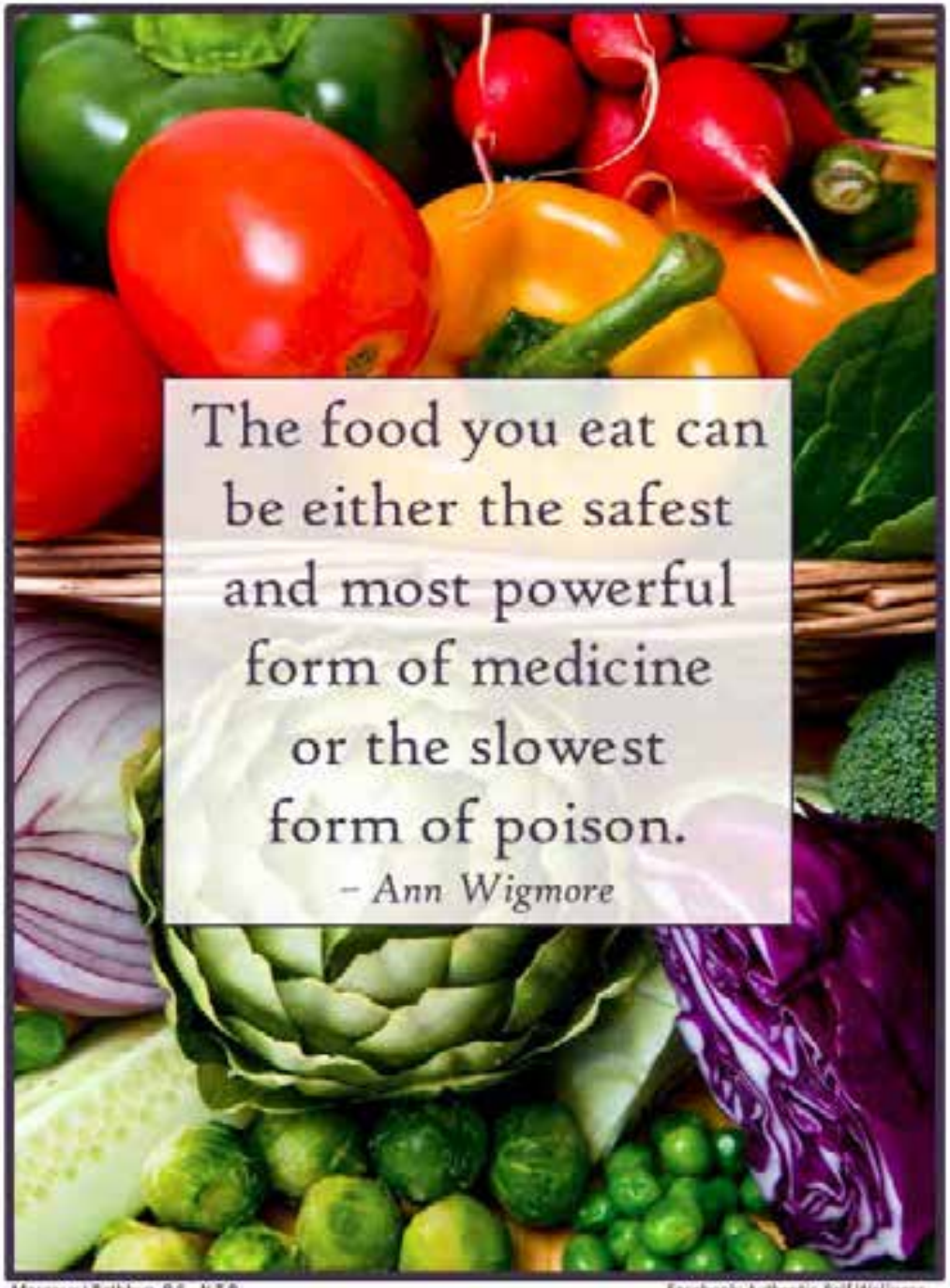
"Food as Medicine" Series | Part 2 of 4


The food you eat can
be either the safest
and most powerful
form of medicine
or the slowest
form of poison.
– Ann Wigmore

Food additives: substances added to food to preserve flavor or enhance its taste, appearance, or other qualities.

Food as Medicine

Why use food additives?

- Lengthen shelf life of food
- Enhance color, flavor, and texture of food
- Consistency of color, flavor, and texture of food
- Reduce cost of food

Food *as* Medicine

Food *as* Medicine

Ingredients: Corn, Vegetable Oil (Sunflower, Canola, and/or Corn Oil), Maltodextrin (Made From Corn), Salt, Cheddar Cheese (Milk, Cheese Cultures, Salt, Enzymes), Whey, Monosodium Glutamate, Buttermilk, Romano Cheese (Part-Skim Cow's Milk, Cheese Cultures, Salt, Enzymes), Whey Protein Concentrate, Onion Powder, Corn Flour, Natural and Artificial Flavor, Dextrose, Tomato Powder, Lactose, Spices, Artificial Color (Including Yellow 6, Yellow 5, and Red 40), Lactic Acid, Citric Acid, Sugar, Garlic Powder, Skim Milk, Red and Green Bell Pepper Powder, Disodium Inosinate, and Disodium Guanylate.
CONTAINS MILK INGREDIENTS.

Nutrition Facts

Serving Size 1 oz (28g/About 11 chips)

Amount Per Serving

Calories 140	Calories from Fat 70
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 210mg	**9%**
Total Carbohydrate 16g	**5%**
Dietary Fiber 1g	**4%**
Sugars 0g	
Protein 2g	

Vitamin A 2%	•	Vitamin C 0%	
Calcium 0%	•	Iron 0%	
Thiamin 2%	•	Vitamin B6 2%	

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Ingredients: Corn, Vegetable Oil (Sunflower, Canola, and/or Corn Oil), Maltodextrin (Made From Corn), Salt, Cheddar Cheese (Milk, Cheese Cultures, Salt, Enzymes), Whey, Monosodium Glutamate, Buttermilk, Romano Cheese (Part-Skim Cow's Milk, Cheese Cultures, Salt, Enzymes), Whey Protein Concentrate, Onion Powder, Corn Flour, Natural and Artificial Flavor, Dextrose, Tomato Powder, Lactose, Spices, Artificial Color (Including Yellow 6, Yellow 5, and Red 40), Lactic Acid, Citric Acid, Sugar, Garlic Powder, Skim Milk, Red and Green Bell Pepper Powder, Disodium Inosinate, and Disodium Guanylate.

CONTAINS MILK INGREDIENTS.

Food as Medicine

OREO - SANDWICH COOKIES - OREO

Ingredients: SUGAR, ENRICHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, THIAMINE MONONITRATE (VITAMIN B1), RIBOFLAVIN (VITAMIN B2), FOLIC ACID), HIGH OLEIC CANOLA OIL AND/OR PALM OIL AND/OR CANOLA OIL, AND/OR SOYBEAN OIL, COCOA (PROCESSED WITH ALKALI), HIGH FRUCTOSE CORN SYRUP, CORNSTARCH, LEAVENING (BAKING SODA AND/OR CALCIUM PHOSPHATE), SALT, SOY LECITHIN (EMULSIFIER), VANILLIN - AN ARTIFICIAL FLAVOR, CHOCOLATE. CONTAINS: WHEAT, SOY.

Size: 16 OZ
Upc: 4400000820

Nutrition Facts

Serving Size 34g
Servings per Container about 15

Amount Per Serving	
Calories 160	Calories from Fat 60
	% Daily Value*
Total Fat 7g	11 %
Saturated Fat 2g	10 %
Trans Fat 0g	0 %
Cholesterol 0mg	0 %
Sodium 160mg	7 %
Total Carbohydrate 25g	8 %
Dietary Fiber 1g	4 %
Sugars 14g	
Protein 1g	
Vitamin A 0 %	Calcium 2 %
Vitamin C 0 %	Iron 10 %

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholest	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carb		300g	375g
Fiber		25g	30g

Food as Medicine

OSCAR MAYER HOT DOGS - WIENERS - CLASSIC

print

Ingredients: MECHANICALLY SEPARATED TURKEY, MECHANICALLY SEPARATED CHICKEN, PORK, WATER, CORN SYRUP, CONTAINS LESS THAN 2% OF SALT, SODIUM PHOSPHATES, SODIUM DIACETATE, SODIUM BENZOATE, SODIUM ASCORBATE, FLAVOR, SODIUM NITRITE.
Size: 16 OZ
Upc: 4470000063

Product Locator

Nutrition Facts

Serving Size	45g
Servings per Container about	10
Amount Per Serving	
Calories 110	Calories from Fat 80
	% Daily Value*
Total Fat 9g	14 %
Saturated Fat 3g	15 %
Trans Fat 0g	0 %
Cholesterol 35mg	12 %
Sodium 340mg	14 %
Total Carbohydrate 1g	0 %
Dietary Fiber 0g	0 %
Sugars 1g	
Protein 5g	

Vitamin A 0 %	Vitamin C 15 %
Calcium 4 %	Iron 4 %

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholest	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carb		300g	375g
Fiber		25g	30g

Food as Medicine

Food *as* Medicine

Details

Make any sandwich more satisfying with Wonder® hot dog buns. Baked just right to be soft and delicious tasting, they're the perfect complement to your favorite hot dogs, bratwurst or sausage.

Ingredients

Unbleached Enriched Flour (Wheat Flour, Malted Barley Flour, Niacin, Reduced Iron, Thiamin Mononitrate, Riboflavin, Folic Acid), Water, High Fructose Corn Syrup, Vegetable Oil (Soybean Oil Or Canola Oil), Contains 2% Or Less Of Each Of The Following: Yeast, Wheat Gluten, Salt, Dough Conditioners (Contains One Or More Of The Following: Sodium Stearoyl Lactylate, Calcium Stearoyl Lactylate, Monoglycerides And/Or Diglycerides, Calcium Peroxide, Calcium Iodate, Datem, Ethoxylated Mono- And Diglycerides, Enzymes), Calcium Sulfate, Calcium Carbonate, Ammonium Sulfate, Ascorbic Acid, Sorbic Acid, Soy Flour, Monocalcium Phosphate, Soy Lecithin, Calcium Propionate (To Retard Spoilage). If Seeded, Sesame Seeds Added. If Yellow, Contains Turmeric, Paprika And Corn Flour.

Nutrition Facts

Serving Size 1 ea
Servings Per Container 8

Amount Per Serving	
Calories 120	
	% Daily Value
Total Fat 1.5g	**2%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 220mg	**9%**
Total Carbohydrate 24g	**8%**
Dietary Fiber 0g	**0%**
Sugars 4g	
Protein 4g	

Percent Daily Values are based on a 2,000 calorie diet.

Food *as* Medicine

Food as Medicine

Details

Freshly Made Pasta When we created this dish, we started with great ingredients. We made the pasta from scratch with our special recipe so that it's sure to taste fresh and delicious! Al dente pasta with tender meatballs in a savory cream sauce. 9 SmartPoints® Value. 290 Calories. 18g Protein.

Ingredients

Sauce (Water, Nonfat Milk, Onions, Modified Cornstarch, Hydrolyzed Corn, Soy and Wheat Protein, Sour Cream Powder [Sour Cream Solids (Cream, Culture), Cultured Nonfat Milk Solids, Citric Acid, Tocopherols, Ascorbyl Palmitate], Salt, Maltodextrin, Roasted Beef and Concentrated Beef Stock, Yeast Extract, Sugar, Garlic, Enriched Flour [Wheat Flour, Malted Barley Flour, Niacin, Reduced Iron, Thiamine Mononitrate, Riboflavin, Folic Acid], Corn Oil, Dried Onion, Xanthan Gum, Caramel Color, Sauteed Mushrooms, Parsley, Sauteed Onions, Natural Flavor, Spices, Dextrose, Citric Acid, Dried Garlic, Lactic Acid Powder [Lactic Acid, Calcium Lactate], Butter [Cream, Lactic Acid], Beef Fat, Canola Oil, Corn Syrup Solids), Cooked Enriched Macaroni Product (Water, Enriched Macaroni Product [Durum Wheat Flour, Niacin, Ferrous Sulfate, Thiamine Mononitrate, Riboflavin, Folic Acid], Carrageenan), Swedish Meatballs (Pork, Water, Bread Crumbs [Wheat Flour, Sugar, Yeast, Sea Salt, Canola Oil], Onion, Soy Protein Concentrate, Dextrose, Seasoning [Natural Flavors, Sugar, Onion Powder, Spices, Garlic Powder, Salt, Beef Fat], Salt, Onion Powder, Dehydrated Milk Powder, Garlic Powder, Spices, Worcestershire Sauce [Distilled Vinegar, Water, Molasses, Corn Syrup, Water, Salt, Caramel Color, Garlic Powder, Sugar, Spices, Tamarind, Natural Flavor], Caramel Color).

Nutrition Facts

Serving Size 258.0 g
Servings Per Container 1

Amount Per Serving	
Calories 290	
	% Daily Value
Total Fat 5g	**8%**
Saturated Fat 1.5g	**8%**
Trans Fat 0g	
Polyunsaturated Fat 1.5g	
Monounsaturated Fat 2.5g	
Cholesterol 30mg	**10%**
Sodium 740mg	**31%**
Total Carbohydrate 40g	**13%**
Dietary Fiber 2g	**8%**
Sugars 7g	
Protein 17g	

Percent Daily Values are based on a 2,000 calorie diet.

Food as Medicine


Ingredients: Organic Corn, Organic Expeller-Pressed Sunflower Oil, Organic Cheddar Cheese (Milk, Cheese Cultures, Salt, Enzymes), Organic Maltodextrin (Made from Corn), Sea Salt, Organic Sweet Cream Buttermilk, Organic Tomato Powder, Natural Flavors, Organic Onion Powder, Organic Romano Cheese (Cow's Milk, Cheese Cultures, Salt, Enzymes), Organic Butter (Cream, Salt), Organic Skim Milk, Organic Spices, Citric Acid, Organic Garlic Powder, Organic Cream, and Lactic Acid.
CONTAINS MILK INGREDIENTS.

Ingredients: Organic Corn, Organic Expeller-Pressed Sunflower Oil, Organic Cheddar Cheese (Milk, Cheese Cultures, Salt, Enzymes), Organic Maltodextrin (Made from Corn), Sea Salt, Organic Sweet Cream Buttermilk, Organic Tomato Powder, Natural Flavors, Organic Onion Powder, Organic Romano Cheese (Cow's Milk, Cheese Cultures, Salt, Enzymes), Organic Butter (Cream, Salt), Organic Skim Milk, Organic Spices, Citric Acid, Organic Garlic Powder, Organic Cream, and Lactic Acid.
CONTAINS MILK INGREDIENTS.

Common Additives

Monosodium Glutamate (MSG)

- Flavor enhancer
- Added to fast food, Chinese food, canned soups, canned vegetables, dips, crackers, processed meats
- Excitotoxin (damages nerve cells)
- Headaches, fatigue, depression, rapid heart rate

BHA / BHT

- Preservative
- Added to luncheon meat, cereal, nut mixes, gum, butter, beer
- May be a human carcinogen (cancer-causing)

High Fructose Corn Syrup

- Sweetening agent made from corn
- Cheaper than sugar
- Found in most processed food items, condiments, drinks, soda, candy, cookies …etc.
- High source of dietary fructose (overconsumption can contribute to non-alcoholic fatty liver disease)
- Dysregulation of appetite hormones (leptin and ghrelin)

Aspartame (NutraSweet, Equal)
Splenda (Sucralose)

- Artificial sweeteners
- Found in ”diet” sodas, gum, “sugar free” products (yogurt, cookies, candy…etc)
- Possible carcinogen (leukemia, lymphoma)
- Decreased insulin sensitivity, increased hunger, increased weight gain (abdominal fat)
- Reduction of healthy intestinal bacteria
- Neurotoxic

Artificial Colors

(Blue #1, Blue #2, Yellow #5, Yellow 6, Red #3, Red #40)

- Artificial coloring agents
- Found in candy, sports drinks, soda, yogurt, crackers, chips, cheese, medicines, cosmetics
- Most artificial colors are made from coal tar, a carcinogen
- Linked to hyperactivity and behavioral effects in children

Brominated Vegetable Oil (BVO)

- Used as a stabilizing agent for flavors
- Found in sports drinks and citrus-flavored sodas
- Bromides compete with iodine for receptor sites – hypothyroidism, autoimmune disease and cancer
- Bromines are a corrosive chemical linked to birth defects, growth problems, schizophrenia and hearing loss

Potassium Bromate (brominated flour)

- Used as a binding agent
- Found in rolls, wraps, flatbread, bread crumbs, bagel chips
- Bromides compete with iodine for receptor sites – hypothyroidism, autoimmune disease and cancer
- Associated with kidney and nervous system disorders, GI discomfort

Azodicarbonamide

- Used as a bleaching agent in breads, also helps with texture
- Found in breads, frozen dinners, packaged baked goods, boxed pasta mixes
- Linked to asthma (if inhaled) and allergic reactions
- Also used commercially in plastics

Sodium Benzoate

- Chemical preservative
- Found in salad dressings, condiments, dips, cheese, fruit juices, mouthwash, toothpaste, cough syrup, and other cosmetics
- May be a human carcinogen (cancer-causing)

Sodium Nitrate ("Nitrites")

- Chemical preservative
- Found in bacon, ham, hot dogs, lunch meats, smoked fish, corned beef
- May be a human carcinogen (cancer-causing)

Sodium Sulfite ("Sulfites")

- Preservative
- Found in dried fruits, fruit juices, lemon juice, wine, sauerkraut
- Can increase asthma and allergy symptoms
- Need to be avoided by people sensitive to sulfur

Trans Fats

(Partially-hydrogenated and hydrogenated oils)

- High heated fat, creates shelf stability
- Found in fast food, baked goods, crackers, cereal, margarine, shortening
- Now required on the label if over a certain amount
- Can increase LDL or “bad” cholesterol
- Possible carcinogen

Toxicants in Food

(not listed on the label)

rBGH and rBST (Synthetic Hormones)

- Genetically modified hormones used in cows to increase milk production
- Found in dairy (milk, cheese…etc.)
- Linked to breast, colon and prostate cancers
- Contains 2 to 10 times as much IGF-1 (insulin-like growth factor) - increases prostate cancer risk 8x, breast cancer risk 7x

Arsenic

- Naturally occurring metallic element, also used in certain pesticides and fertilizer
- Found in high amounts in rice, apple juice, grape juice and poultry
- Possible effects of over-exposure: nausea, vomiting, decreased RBC and WBC, neuropathy, heart arrhythmia, possible carcinogen (increased risk of skin, bladder, and lung cancers)

Mercury

- Naturally occurring metallic element
- Found in high amounts certain fish, high fructose corn syrup, sodium benzoate, artificial coloring
- Central Nervous System issues: cognitive thinking, memory, attention, language, fine motor and visual/spatial skills. Lack of coordination of movements and muscle weakness.
- Developmental issues if baby exposed inutero.

Fish highest in mercury:

- Mackerel (King)
- Marlin
- Orange Roughy
- Shark
- Swordfish
- Tilefish
- Tuna (Bigeye, Ahi)

BPA

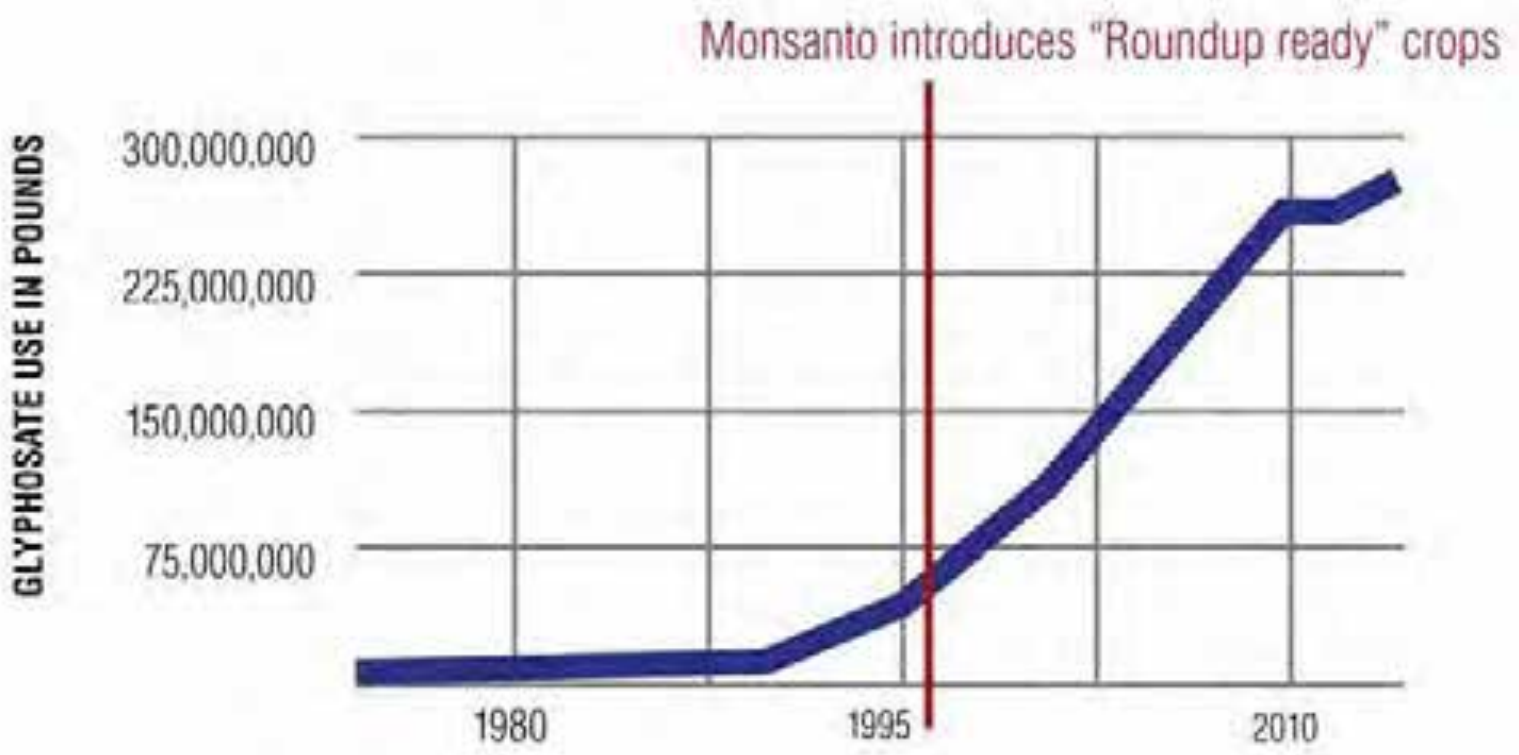
(Bisphenol-A)

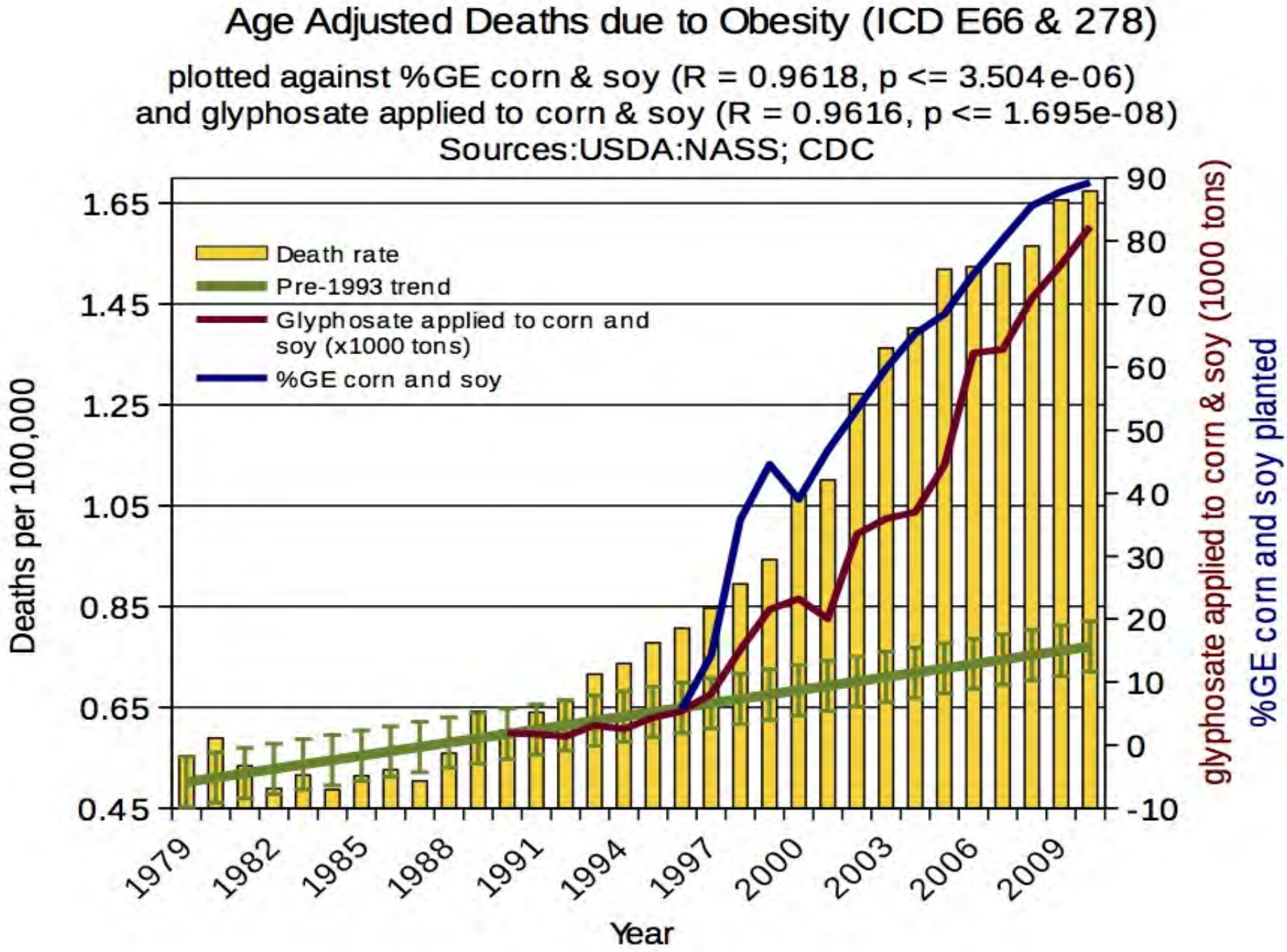
- Common plastic
- Found in water bottles, plastics, Tupperware, baby bottles, lining of cans
- Endocrine disruptor (structure similar to estrogen – can mimic effects in the body)

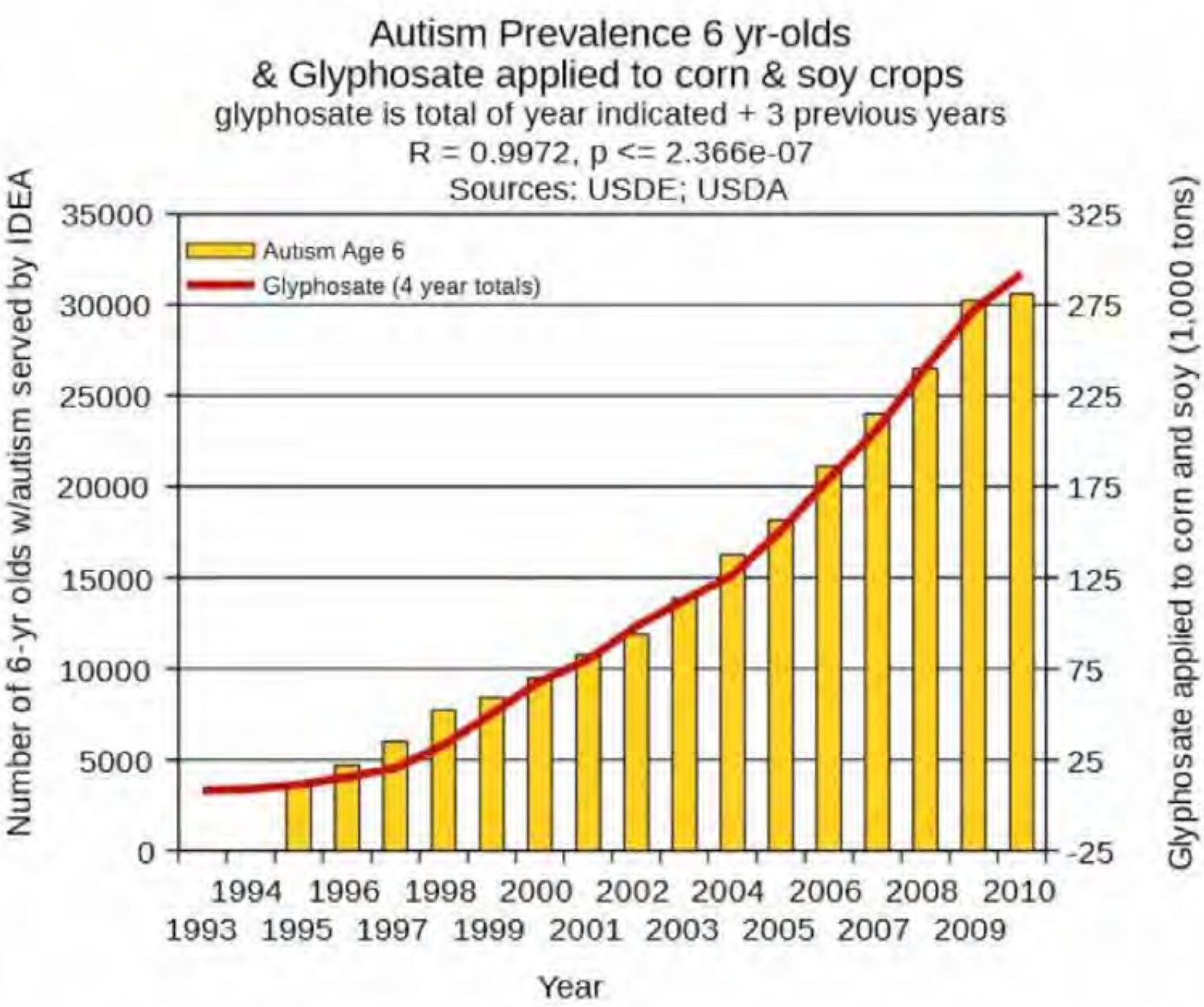
Glyphosate (Roundup)

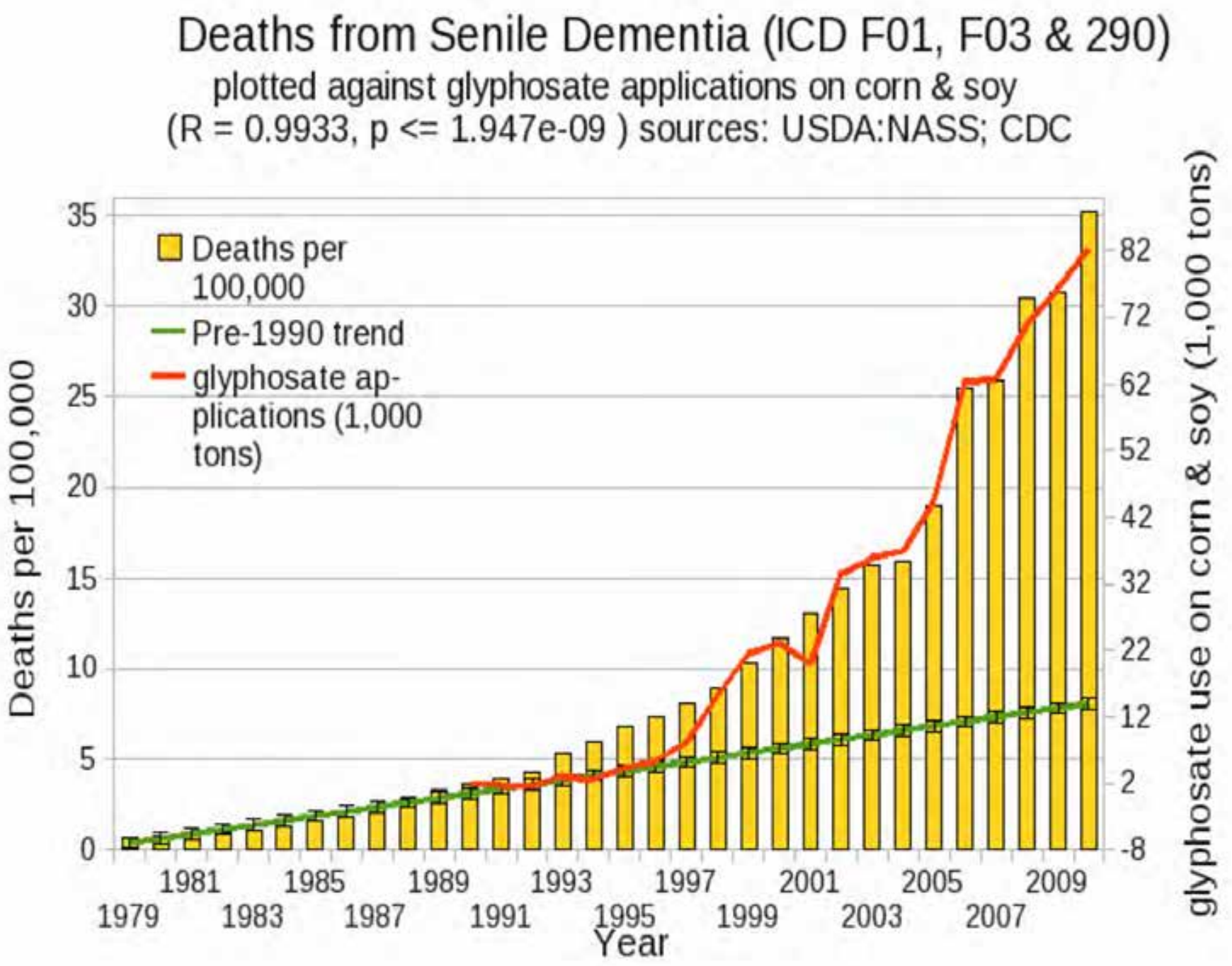
- Broad-spectrum herbicide
- Interferes with shikimate pathway – chelates minerals away from weeds
- In 2015 the World Health Organization's International Agency for Research on Cancer classified glyphosate as "probably carcinogenic to humans."

ROUNDUP USE SKYROCKETS




Age Adjusted Deaths due to Obesity (ICD E66 & 278)
plotted against %GE corn & soy (R = 0.9618, p <= 3.504e-06)
and glyphosate applied to corn & soy (R = 0.9616, p <= 1.695e-08)
Sources:USDA:NASS; CDC
Death rate
Pre-1993 trend
Glyphosate applied to corn and soy (x1000 tons)
%GE corn and soy
Deaths per 100,000
1.65
1.45
1.25
1.05
0.85
0.65
0.45
90
80
70
60
50
40
30
20
10
0
-10
glyphosate applied to corn & soy (1000 tons)
%GE corn and soy planted
1979
1982
1985
1988
1991
1994
1997
2000
2003
2006
2009
Year


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
1994
1996
1998
2000
2002
2004
2006
2008
2010
1993
1995
1997
1999
2001
2003
2005
2007
2009
Year


Deaths from Senile Dementia (ICD F01, F03 & 290)
plotted against glyphosate applications on corn & soy
(R = 0.9933, p <= 1.947e-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
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009

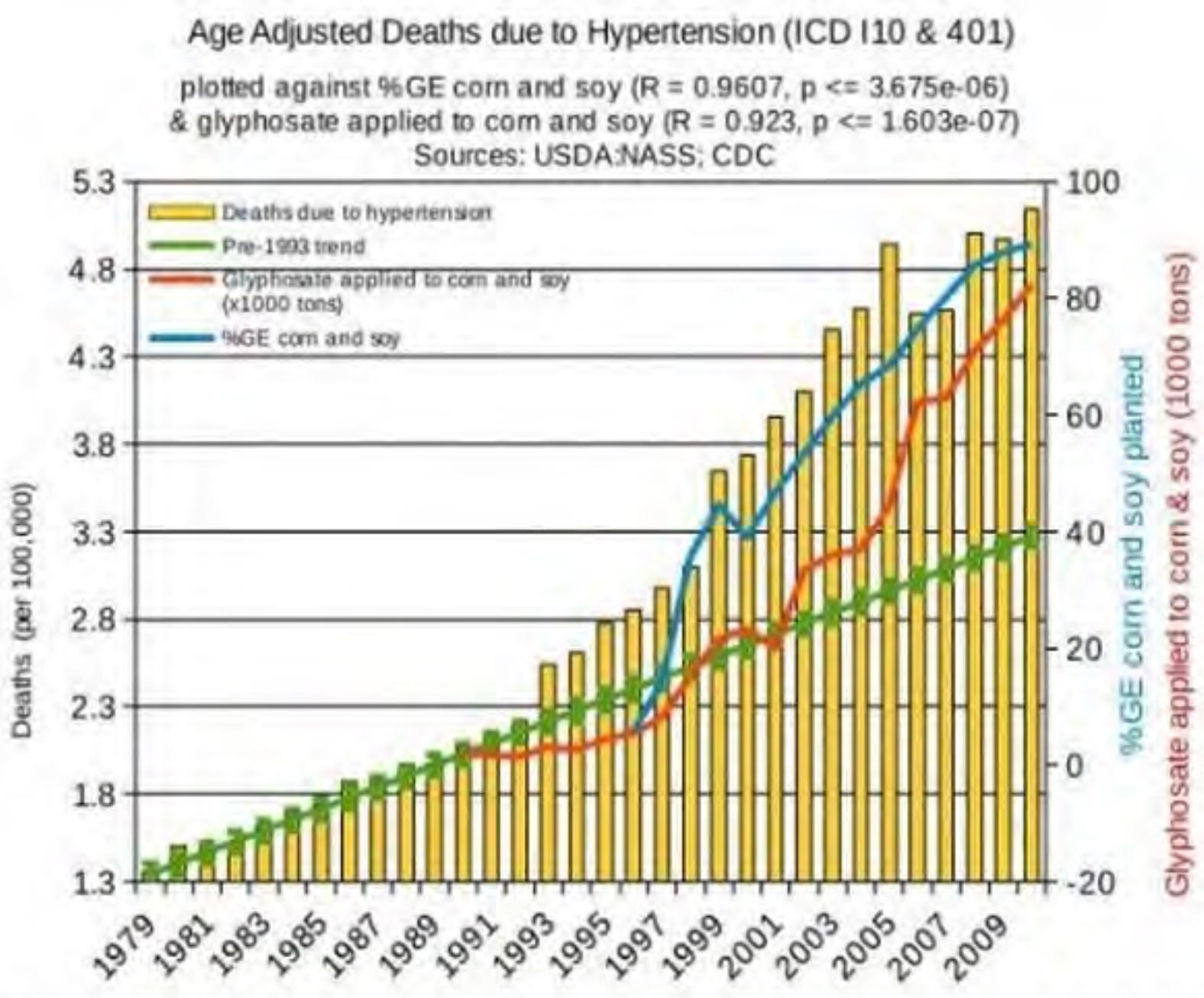
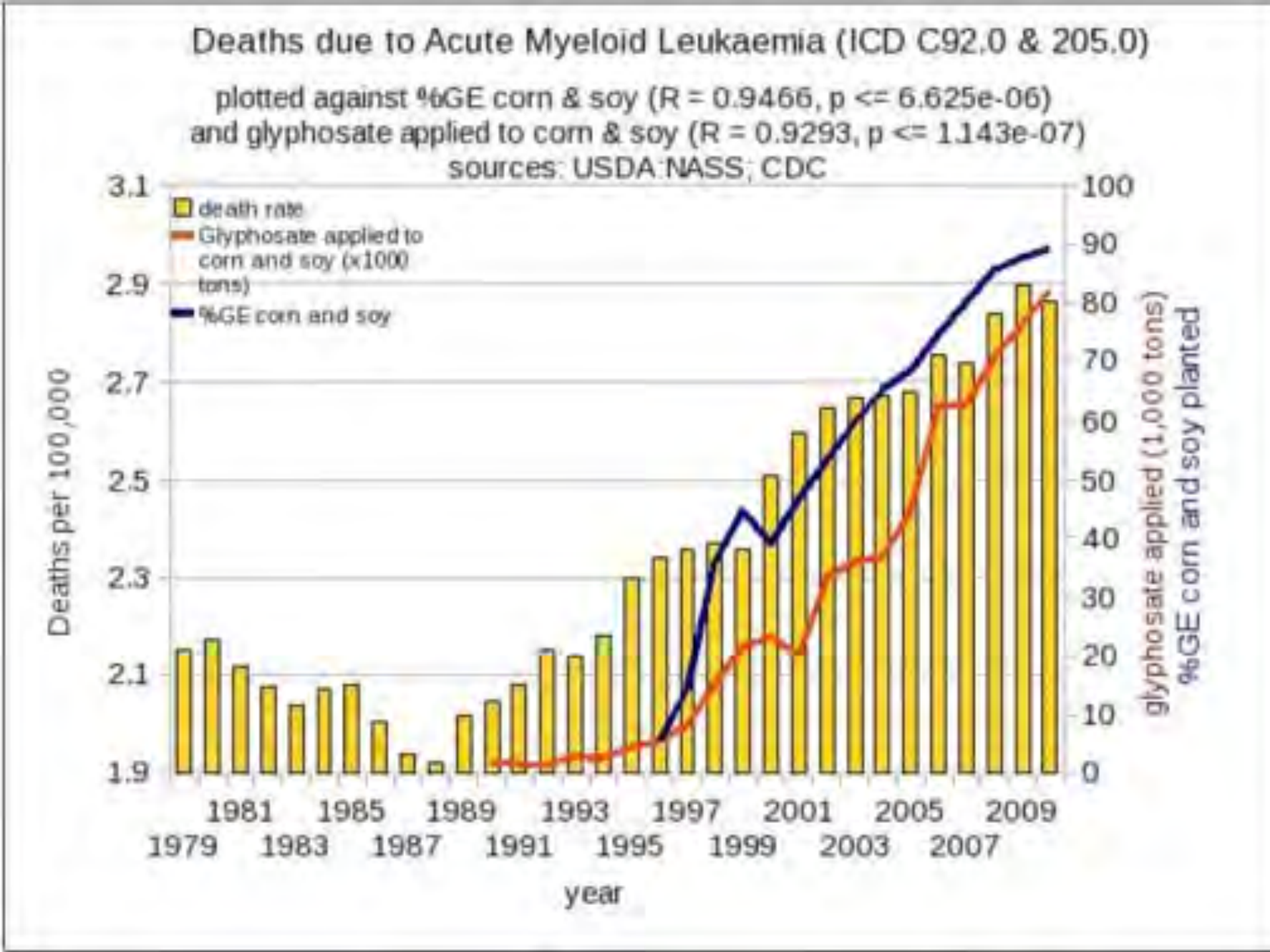
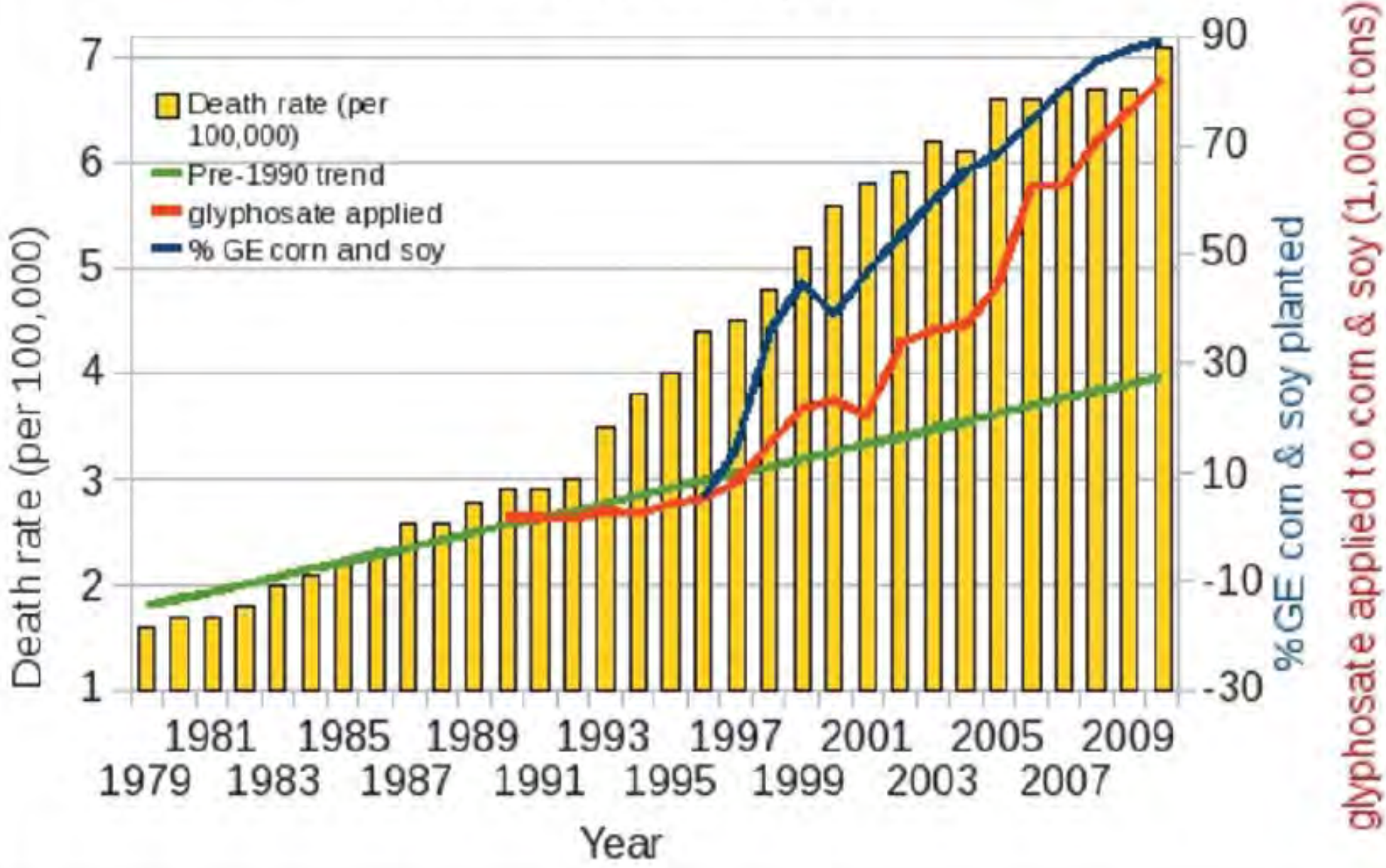


Figure 11. Correlation between age-adjusted hypertension deaths and glyphosate applications and percentage of US corn and soy crops that are GE.


Deaths due to Acute Myeloid Leukaemia (ICD C92.0 & 205.0)
plotted against %GE corn & soy (R = 0.9466, p <= 6.625e-06)
and glyphosate applied to corn & soy (R = 0.9293, p <= 1.143e-07)
sources: USDA:NASS; CDC
death rate
Glyphosate applied to corn and soy (x1000 tons)
%GE corn and soy
Deaths per 100,000
glyphosate applied (1,000 tons)
%GE corn and soy planted
year
3.1
2.9
2.7
2.5
2.3
2.1
1.9
100
90
80
70
60
50
40
30
20
10
0
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009

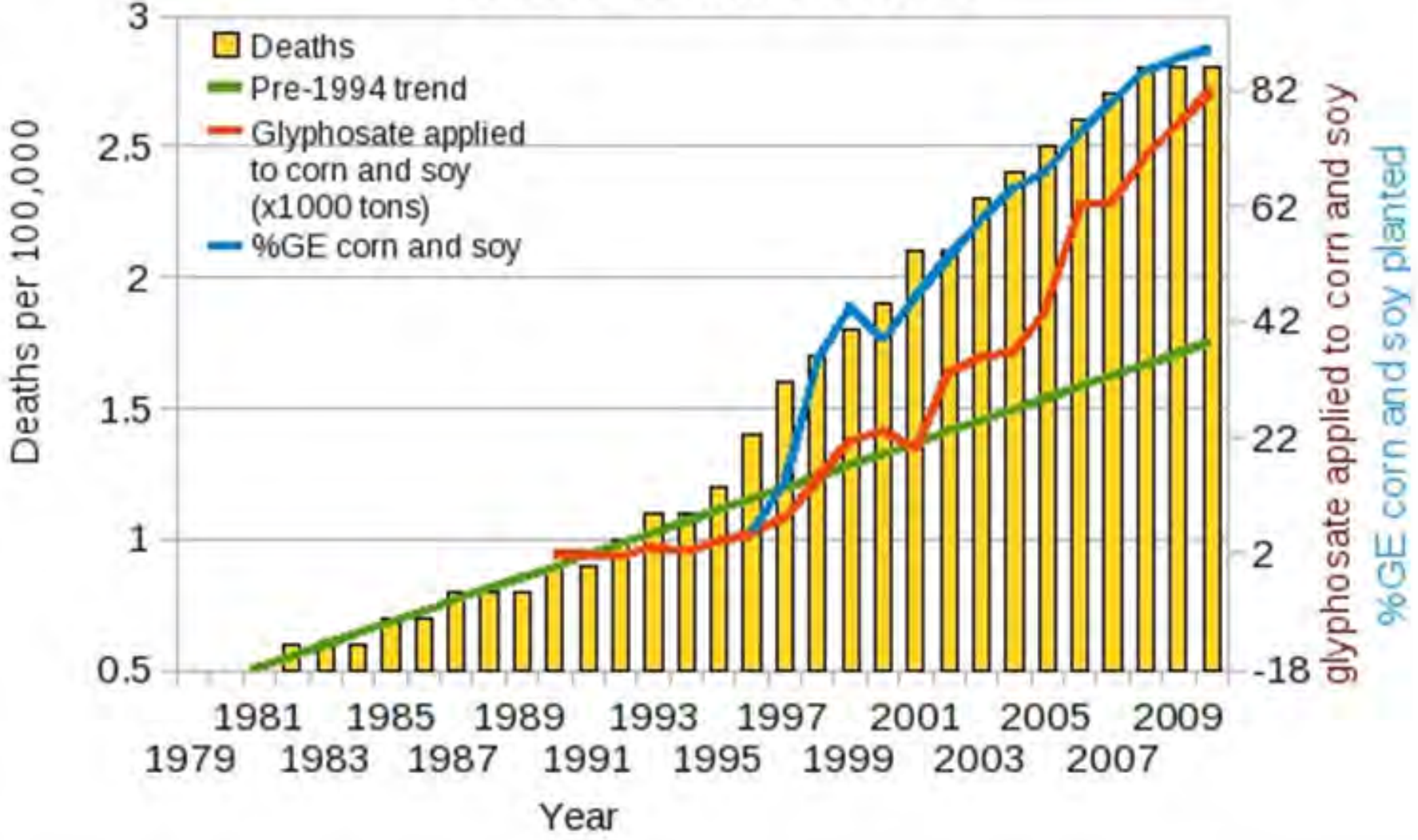
Deaths from Parkinson's disease (ICD G20 & 332.0)

plotted against glyphosate use on corn & soy(R = 0.9006, p <= 5.063e-07)
and percent GE corn & soy planted (R=0.9676, p <= 2.714e-06)
sources: USDA:NASS; CDC

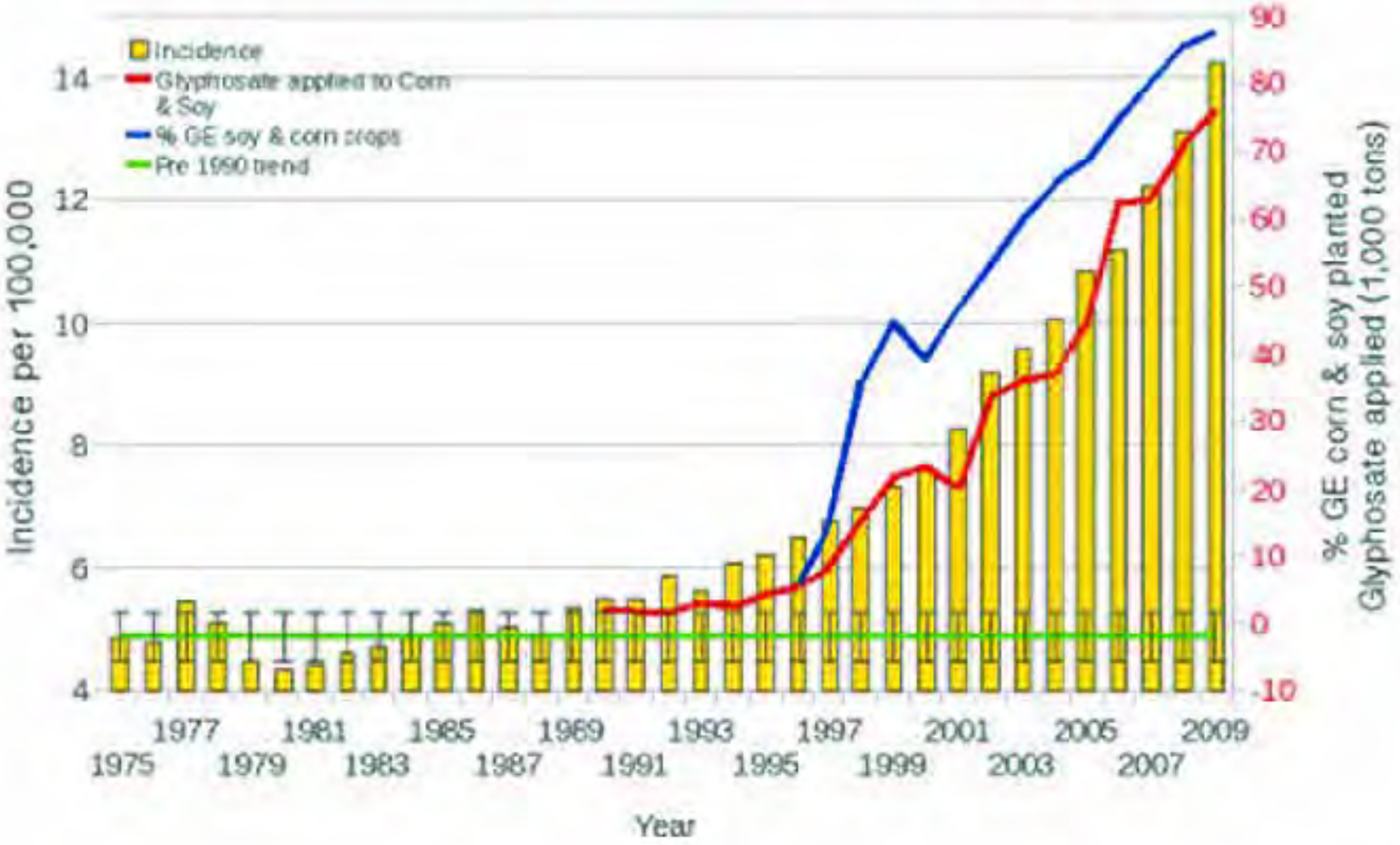


Deaths due to Stroke (ICD I62.9 & 432.9 hemorrhage, non embolic)

Plotted against %GE corn and soy (R = 0.982, p <= 1.395e-06)
& glyphosate applied to corn and soy (R = 0.9422, p <= 5.497e-08)
sources: USDA:NASS; CDC



Thyroid Cancer, GMOs, and Glyphosate



The Dirty Dozen

1. Strawberries
2. Apples
3. Nectarines
4. Peaches
5. Celery
6. Grapes
7. Cherries
8. Spinach
9. Tomatoes
10. Sweet Bell Peppers
11. Cherry Tomatoes
12. Cucumbers

Source: Environmental Working Group www.ewg.org

Resources for more information:

- Environmental Working Group (EWG)
  - www.ewg.org
- Food Babe
  - www.foodbabe.com

Questions?

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