Using herbicide to make harvesting easier

Glyphosate is a systemic-acting broadband herbicide that kills almost all green plants. It is the main ingredient in Monsanto's Roundup herbicide. Fields of genetically modified corn, soy or canola can be sprayed with glyphosate to exterminate weeds, but the GM crop plants survive.

However this results in a glyphosate residue on the crop, which then enters the food chain of animals and humans.

In December 2011 a study in Berlin found glyphosate in all urine samples of city workers, journalists and lawyers, 5 to 20 times higher than the legal drinking water limit. None of the examinees had direct contact with agriculture.

Spraying crops to death

Whole fields of crops are now routinely sprayed to death to ensure all 'mature' and dry out at the same time. This is now common for potatoes, cereals, canola and pulses. For perennial crops (raspberries, apples, kiwis, pineapples, etc.), the area directly under the crops and, in some cases, the entire plantations are cleared with glyphosate.

'Desiccation is one of the most egregious scandals of modern agricultural history'.

What actually happens in the process? Just before crops are harvested and sold to bakeries, farmers soak them in herbicides to kill them off and give them the appearance of uniform maturity. One could just as well stir the glyphosate right into the bread dough.

Glyphosate cannot be washed away

Glyphosate is transported from the leaves into the grains and fruit. During milling it is concentrated in wheat bran by a factor of four. It cannot be removed by washing or cooking, and is passed into milk and eggs.



http://www.foeeurope.org/sites/default/files/press_releases/foee_4_human_contamination_glyphosate.pdf

Diseases strongly linked to Glyphosate

According to Dr. S. Seneff, research scientist at MIT, glyphosate is possibly "the most important factor in the development of multiple chronic diseases and conditions that have become prevalent in Westernized societies," including but not limited to:

Autism	Gastrointestinal diseases such as inflammatory bowel disease, chronic diarrhea, colitis and Crohn's disease	Obesity
Allergies	Cardiovascular disease	Depression
Cancer	Infertility	Alzheimer's disease
Parkinson's disease	Multiple sclerosis	ALS

http://articles.mercola.com/sites/articles/archive/2013/06/25/glyphosate-residue.aspx

US data for % GE corn and soy crops planted and glyphosate applied plotted against the number of new cases of diabetes (adjusted) diagnosed annually.

Crop and glyphosate data from the United States Department of Agriculture; diabetes data from U.S. Centers for Disease Control (CDC).



Number of New Cases of Diabetes Diagnosed Annually (incidence)

US data for % GE corn and soy crops planted and glyphosate applied to corn & soy plotted against % of U.S. population who are obese (BMI 30.0-99.8).

Crop and glyphosate data from the USDA; obesity data from U.S. CDC. By kind permission of Dr Nancy Swanson.



Number of children with autism plotted against glyphosate use on GE corn and soy. Autism data were obtained from the U.S. Department of Education, under the Individuals with Disabilities Education Act (IDEA).

This plot is shown using data from USDE for the number of autistic children receiving services. By kind permission of Dr Nancy Swanson.



Glyphosate and Superweeds: Glyphosate applied to Corn, Soy and Cotton crops in the U.S. and the number of confirmed glyphosateresistant weeds.

Glyphosate data from USDA; super-weed data from Charles Benbrook. By kind permission of Dr Nancy Swanson.





Number of Hospitalizations in the US for Acute Kidney Injury (a sudden, temporary, and sometimes fatal loss of kidney function) plotted against glyphosate applied to corn & soy.

Data from USDA and US CDC



Adjusted Death Rate from Parkinson's disease.

Data from USDA and CDC. By kind permission of Dr Nancy Swanson



Glyphosate applied to corn & soy (1,000 tons)

Deaths per 100,000 from Senile Dementia plotted against glyphosate applications on corn and soy.

Data from USDA and CDC. By kind permission of Dr Nancy Swanson



plotted against glyphosate applications on corn & soy R=0.9908, p <= 6.31e-09

Deaths from Senile Dementia



Deaths per 100,000 glyphosate applications (1,000 tons)



Glyphosate Applied (1000 tons)

soy planted

ø

COLN

Ю

%

Incidence of thyroid cancer (adjusted) related to glyphosate applied to corn & soy crops and % GE soy & corn crops in the US.

Data from USDA and CDC. Graph reproduced by kind permission of Dr Nancy Swanson.

How does glyphosate affect cows?

In September 2013 a study of 8 dairy farms in Denmark found glyphosate in the urine and blood of 100% of the cows. Many of the cows showed various types of organ damage including kidney, liver and muscles, high urea, and mineral depletion (glyphosate is known to chelate minerals, especially Co and Mn).



Journal of Environmental & Analytical Toxicology, http://gmoevidence.com

How does glyphosate affect humans?

The GM industry claims that glyphosate affects plants by the disruption of the shikimate pathway, which is involved in the synthesis of the essential aromatic amino acids. The industry further claims that glyphosate is not harmful to humans or mammals because they lack the shikimate pathway.

However, this pathway is present in gut bacteria, which are negatively affected by glyphosate. It selectively targets beneficial bacteria, and does not affect pathogens.

In addition, glyphosate inhibits cytochrome P450 (CYP) enzymes. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics (foreign compounds). By reducing the body's ability to detoxify other food-borne chemical residues and environmental toxins, glyphosate enhances their damaging effects. The negative impact on the body manifests slowly as inflammation damages cellular systems throughout the body.

Glyphosate's Suppression of Cytochrome P450 Enzymes and Amino Acid Biosynthesis by the Gut Microbiome: Pathways to Modern Diseases by Anthony Samsel and Stephanie Seneff

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But are we safe?



In December 2011 a study in Berlin found glyphosate in all urine samples of city workers, journalists and lawyers, 5 to 20 times higher than the legal drinking water limit.

None of the examinees had direct contact with agriculture.

New health risks of glyphosate

Glyphosate inhibits useful bacteria and kills off algae, resulting in an increasing prevalence of fungi that are pathogenic to plants. In addition, glyphosate chelates micronutrients, especially copper and manganese, thus leading to deficiency diseases.



Evidence is showing a similar process taking place in the digestive tract of humans and animals, where glypohosate affects the microflora of the gastrointestinal tract. The first studies indicate that the gradual negative impact on the intestinal microflora is most likely the cause of long-term health consequences.

New health risks of glyphosate

Prof. Gilles Seralini and his team of the University of Caen has proved that even small amounts of Roundup lead to the death of human cell



cultures. Seralini concluded that the typical glyphosate presence in desiccated crops, as found in animal and human foods, causes cell damage.

Short-term studies in rodents have shown no apparent toxicity from glyphosate. However studies involving life-long exposure have demonstrated liver and kidney dysfunction and a greatly increased risk of cancer, and shortened lifespan.

www.cornucopia.org/2013/05/glyphosates-suppression-of-cytochrome-p450-enzymes-andamino-acid-biosynthesis-by-the-gut-microbiome-pathways-to-modern-diseases/

GM toxins found in 93% of pregnant women

In 2011 doctors at Sherbrooke University Hospital in Quebec, Canada, found that Bt-toxin from genetically engineered Bt corn accumulates in the human body, contrary to industry assurances.

The toxin was identified in 93 percent of pregnant women tested; 80 percent of umbilical blood in their babies; and 67 percent of non-pregnant women.

Maternal and fetal exposure to pesticides associated to genetically modified foods in Eastern Townships of Quebec, Canada, Aris A, Leblanc S., Department of Obstetrics and Gynecology, University of Sherbrooke Hospital Centre, Sherbrooke, Quebec, Canada. Reprod Toxicol. 2011 May;31(4):528-33. doi: 10.1016/j.reprotox.2011.02.004. Epub 2011 Feb 18. NCBI, PubMed.gov

Breast cancer and kidney disease risks of glyphosate

A groundbreaking new study has found that glyphosate, the active ingredient in Monsanto's best-selling herbicide Roundup, is responsible for fueling breast cancer by increasing the number of breast cancer cells through cell growth and cell division. The effects are so potent that the effect of Roundup is seen even in the parts-per-trillion range.

Scientists have also found that Roundup causes *toxicity to human cells*, and actually kills human kidney cells at low doses.

Cytotoxicity on human cells of Cry1Ab and Cry1Ac Bt insecticidal toxins alone or with a glyphosate-based herbicide, Mesnage R, Clair E, Gress S, Then C, Székács A, Séralini G-E, 15 February 2012. What has the European Food Safety Authority done to ensure our food is safe?



Committed to ensuring that Europe's food is safe

EFSA has RAISED the legal limit for glyphosate.

Glyphosate contamination 100 times the legal limit for vegetables is now allowed in wheat and bread, and the limit for feed grains has been raised 200-fold.

Glyphosate residues in UK wholemeal bread



Glyphosate is more prevalent in wholemeal bread.

http://www.foeeurope.org/sites/default/files/press_releases/foee_4_human_contamination_glyphosate.pdf

Non-organic Cookies, Pastry, Cake, and Bread?



It is likely that all these products contain high glyphosate concentrations. Wheat is now allowed a glyphosate concentration 100 times the legal limit for vegetables.

Non-organic Cheese, Milk, Butter, and Yogurt?



Most non-organic dairy products contain high glyphosate concentrations, as the limit for feed grains has been raised 200-fold.

Non-organic French fries and Potato Chips?



Non-organic potato products likely contain glyphosate concentrations 100 times the legal limit for other vegetables.



The Gut-brain Axis

Within the first few days of life the human gut is colonized by commensal intestinal microbiota.

Studies show that commensal, probiotic, and pathogenic bacteria in the gastrointestinal tract can activate neural pathways and central nervous system signaling systems.



Gut-brain axis: how the microbiome influences anxiety and depression, Foster JA, McVey Neufeld KA.

Gut and Brain Tissue

The brain and the gut both develop from the same tissue – during foetal development one part becomes the central nervous system, while the other develops into the enteric nervous system. They are connected via the Vagus nerve.

The gut has a large, semi-autonomous brain, and its endocrine signaling to the entire body is very elaborate.



jonlieffmd.com/blog/gut-feelings-the-brain-gut-microbe-axis

How the Gut-brain Axis works

The microbiome is affected by our experiences and emotions.

In turn microbes in the gut send chemical signals (including neurotransmitters) affecting memory, emotions and behaviour in important parts of the brain. Gut microbes even alter gene expression in the gut.



jonlieffmd.com/blog/gut-feelings-the-brain-gut-microbe-axis

Nature Reviews | Microbiology

Early Gut Bacteria Regulate Happiness

- Scientists have shown that brain levels of serotonin, the 'happy hormone', are regulated by the amount of bacteria in the gut during early life.
- Normal adult brain function depends on the presence of gut microbes during development.
- This research has multiple health implications as it shows that manipulations of the microbiota (e.g. by antibiotics, diet, or infection) can have profound knock-on effects on brain function and mental well-being, including developing microbial-based strategies for treatment for brain disorders.

www.sciencedaily.com/releases/2012/06/120612115812.htm, from Alimentary Pharmabiotic Centre, University College Cork

Gut microbiome and immunity

About 70% of our immune cells are located in our digestive tract at any time. While there, they are programmed by the gut microbiome to function in different ways. For example, if they are programmed to fight inflammation in the gut, they may continue to fight inflammation when the travel to other parts of the body. Changes in gut microbial communities can cause immune dysfunction leading to autoimmune disorders.



The role of gut microbiota in the gut-brain axis: Current challenges and perspectives, Xiao Chen, Roshan D'Souza, Seong-Tshool Hong

Functions of our digestive microbiome

- Aid digestion, synthesize vitamins
- Detoxify foreign compounds and help metabolize indigestible compounds
- Defend against opportunistic pathogens.
- Help programme the functioning of immune cells.
- Compounds produced by the microbiome are found throughout the body, where they continue to signal disease.

Importance of balance: "It's like a garden you're less likely to have weeds growing if you have lush vegetation, but without this vegetation the weeds can potentially take over"

The role of gut microbiota in the gut-brain axis: Current challenge D'Souza, Seong-Tshool Hor





Best sources of probiotics (everything must be unpasteurized)

Kefir – water or milk
Yogurt, lassi
Buttermilk, etc.
Cultured vegetables – sauerkraut,
Sourdough (contains lactobacilli)
Miso (fermented soy paste)
Tempeh (fermented soybeans)
Soft cheeses (like Gouda)
Probiotics – choose carefully as some may not be very effective.



Prebiotics: While probiotic-foods contain live bacteria, prebiotic foods feed the good bacteria already living in your digestive system. They are found in foods such as asparagus, Jerusalem artichokes, bananas, oatmeal, red wine, honey, maple syrup, and legumes

Best ways to improve gut microbiome (flora)

The types of probiotics found in good quality yogurt are helpful but do not normally colonize the gut; if you stop eating yogurt, the benefits gradually fade. Both types of kefir, dairy and water, have MANY more types of probiotics than yogurt. There is some evidence that kefir can change the gene expression of gut flora in positive ways and there is some evidence that some of the kefir probiotics can colonize the gut. Scientists were amazed that kefir made in unsanitary conditions by pastoral peoples didn't contain any "dangerous" bugs. They actually injected a batch of kefir with pathogens and 3 days later the bad bugs were gone, apparently killed.

"Both kefir and yogurt improve lactose digestion simply because some of the bacterial cells give up their lives in the intestinal tract, release their enzymes and digest the lactose. It's a one-shot deal. However, kefir has additional microorganisms that may be able to colonize the intestines and benefit health further by protecting the intestine against disease-causing bacteria." -ScienceDaily. 2003-05-30

The role of gut microbiota in the gut-brain axis: Current challenges and perspectives, Xiao Chen, Roshan D'Souza, Seong-Tshool Hong

Best ways to improve gut microbiome (flora)

Dr Przuntek, a neurologist working in the field of diet and the gut-brain axis at the university hospital in Bochum, finds that Ayur-Vedic dietary guidelines are best for the gut microbiome, and are most effective in preventing and treating degenerative diseases such as Parkinsons.



Benefits of fermented foods

•Restore beneficial microbe populations, boosting immunity and nutrition.

•Improve gut function and therefore brain and mood.

•Detoxify and chelate toxins and heavy metals.

Start with small amounts, ¹/₄ to ¹/₂ cup per meal. Too much too fast can cause die-off symptoms which can be confusing.



Nature Reviews | Microbiology

The role of gut microbiota in the gut-brain axis: Current challenges and perspectives, Xiao Chen, Roshan D'Souza, Seong-Tshool Hong

Animals, including humans, actively select the gut microbes that are the best partners and nurture them with nutritious secretions.

Nutrients are more powerful when released by the host epithelial cell layer than when coming from the food in the gut.

This allows 'selectivity amplification', whereby relatively tiny amounts of secretions amplify to produce a largescale effect.

We do the same as plants



Bacteria growing in the lumen on top of host epithelial cells. Epithelial and bacterial cells in green, and the epithelial border brush in blue.

Jonas Schluter, Kevin R. Foster. The Evolution of Mutualism in Gut Microbiota Via Host Epithelial Selection. PLoS Biology, 2012; 10 (11): e1001424 DOI: 10.1371/journal.pbio.1001424



The Importance of Pure Food

The ability of the nervous system to cognize extra subtle states of experience is marred through contamination of the brain matter by impure physical matter, through fatigue or wrong thinking, all of which exhaust mental energy. Fatigue is the main factor. It does not allow the mind to experience subtleties. Wrong food also can make the mind dull, put one to sleep or make one irritated. We eat and drink and whatever we eat or drink may contain some impure element which affects the mind." Maharishi, The Science of Being and Art of Living

The Vedic Consciousness of the Farmer

"With Vedic Consciousness, all the farmer's thought, speech and action will be according to Natural law. Seasons will come on time, crops will be abundant, everything will be scientific – always evolutionary. The Vedic Consciousness of the farmer will enjoy the support of the infinite creativity of 'Devaa adhi vishve' – the Administrators of the Universe – the specific and holistic qualities of intelligence that are lively in Vedic **Consciousness – Transcendental Consciousness –** Parame Vyoman".

Celebrating Perfection in Administration, p186



"It is my joy to make difficult things simple". – Maharishi