You and Your Livestock: Living with Glyphosate Contamination

Created By:
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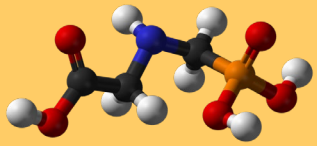
Glossary

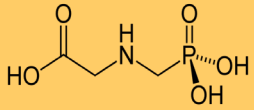


GMO: A genetically modified organism (plant, animal, bacteria, etc.) whose genetic material has been altered using genetic engineering techniques.

Glyphosate: 2-[(phosphonomethyl)amino]acetic acid or (N-(phosphonomethyl)glycine) is a broad-spectrum systemic herbicide used to kill weeds, especially annual broadleaf weeds and grasses known to compete with commercial crops grown around the globe.

RoundUp: Monsanto's broad spectrum herbicide containing glyphosate as the active ingredient.

Roundup Ready: Indicates plants such as corn, soybeans, beets and alfalfa that have been genetically engineered to be resistant to glyphosate herbicide.



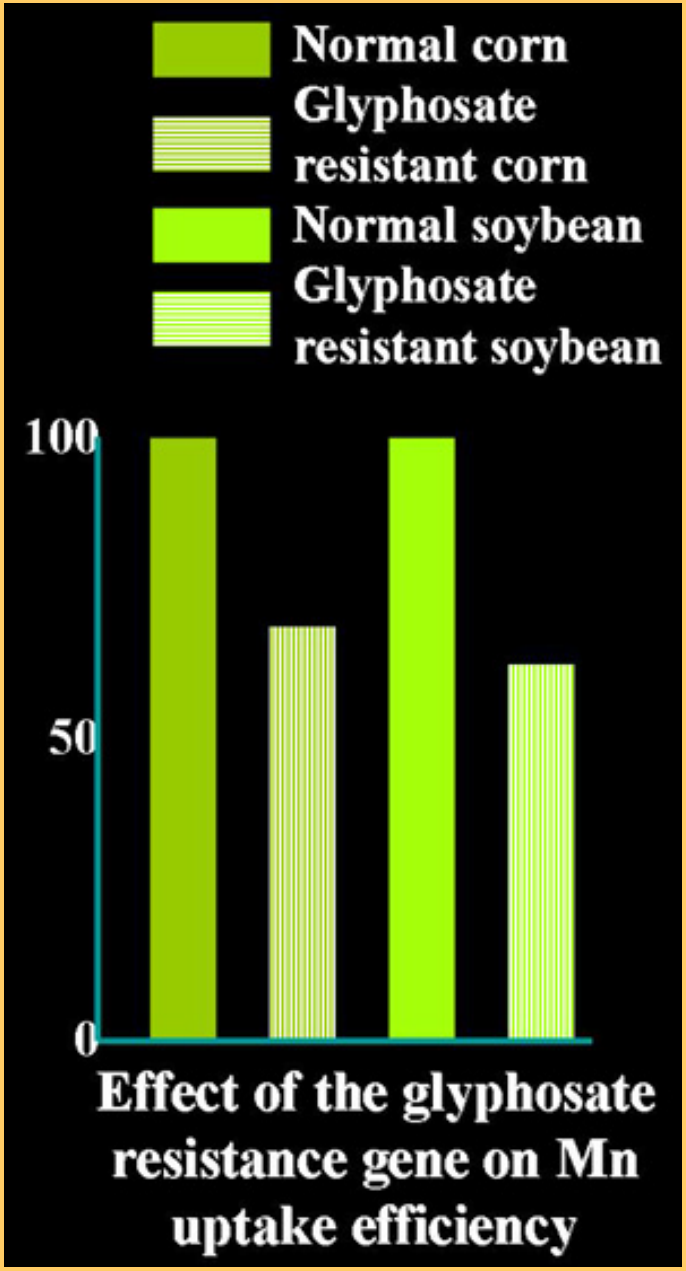
Grains today, unless they are certified organic or GMO-free, are contaminated with GMOs and glyphosate. Glyphosate contamination is known to tie-up minerals and to disrupt the normal activity of the beneficial intestinal bacteria, resulting in a variety of health problems in animals.

Is Your Feed Safe?

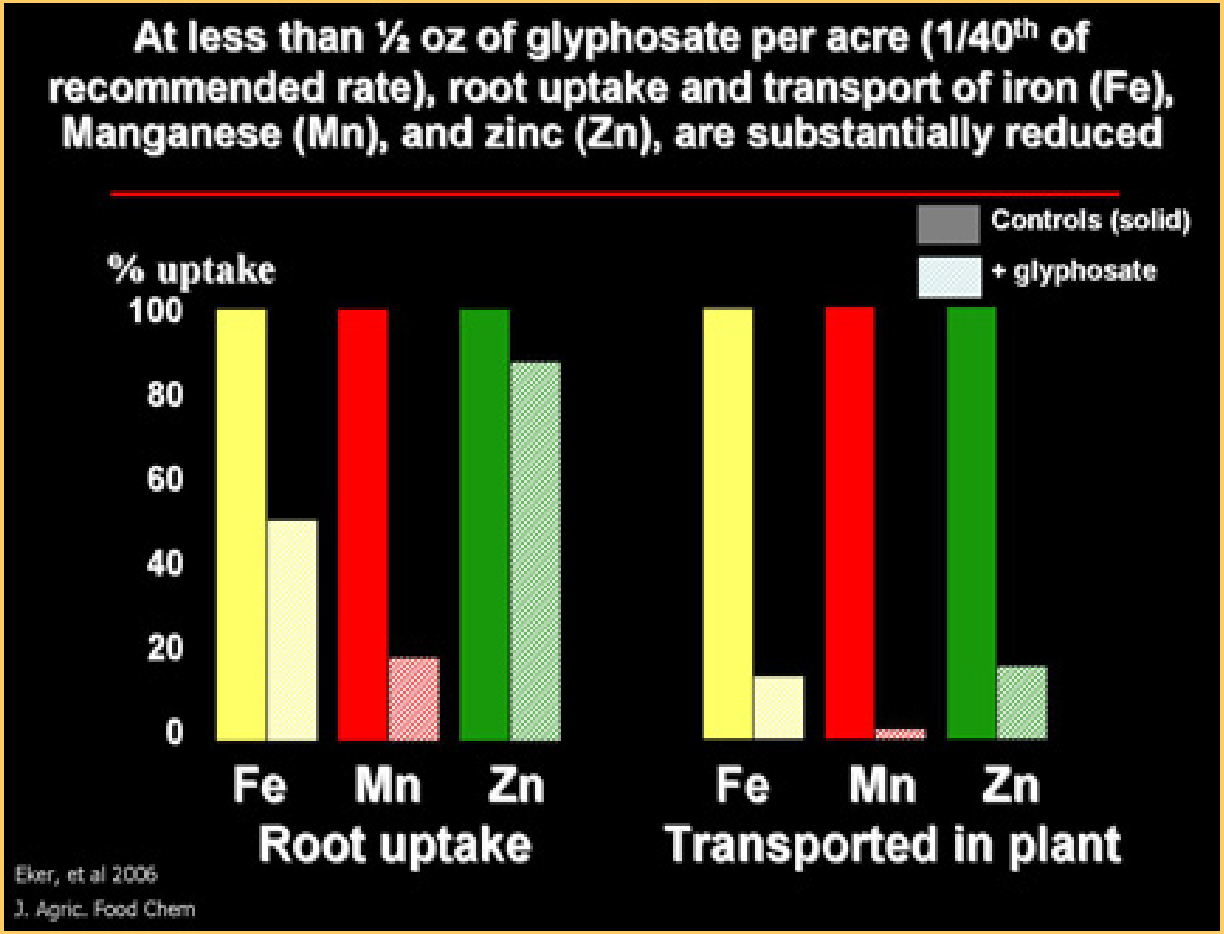
It used to be that we could generally trust that the grains and forages we fed to our livestock were reasonably safe, if not always of the same nutritional value. That all changed with the advent of GMO technology, and we are now forced to evaluate the safety of almost everything we feed to our animals or eat ourselves.

The main culprit is glyphosate. Many crops in the U.S. today, including corn, soybeans, small grains, beet pulp, molasses, corn syrup and alfalfa, are contaminated with glyphosate residue.

There is overwhelming world-wide evidence that glyphosate contamination of the environment poses a severe threat to the health of soils, beneficial bacteria, plants, animals, humans and even fish. Many countries have labeling requirements or outright bans on the use of GMO crops. Some countries are restricting the use of glyphosate based herbicides such as RoundUp.



Even without Glyphosate use, just the presence of the "*RoundUp Ready*" gene results in reduced mineral uptake in GMO corn and soybean plants.



Adding glyphosate to GMO RR plants further reduces the mineral uptake by plants.

A Double Whammy!

This chart shows one example of nutrient reduction in Alfalfa with only one application of Glyphosate the previous year. (Third year alfalfa, second cutting)

% Reduction in Alfalfa Nutrients by Glyphosate*

Nutrient	% reduction compared with Non-RR
Nitrogen	13 %
Phosphorus	15 %
Potassium	46 %
Calcium	17 %
Magnesium	26 %
Sulfur	52 %
Boron	18 %
Copper	20 %
Iron	49 %
Manganese	31 %
Zinc	18 %

*Third year, second cutting analysis; Glyphosate applied one time in the previous year

"A USDA scientist, Robert Kremer, found a 500% increase in Fusarium root infection of Round Up Ready soybeans when glyphosate is applied."

Glyphosate suppresses the plant's defense mechanisms and promotes the growth of soil-borne disease(s) such as the mold growth shown to the left.

Genetic engineering and glyphosate have disrupted the normal metabolism of soil micro-organisms. They are not able to efficiently make minerals in the soil available.

Less minerals for the plants to absorb means

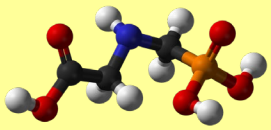
Less minerals in the grain –resulting in:

Less minerals in the animals – resulting in:

Less minerals in the people- resulting in:

Sick and dying soil, sick and dying plants, sick and dying animals and sick and dying people.

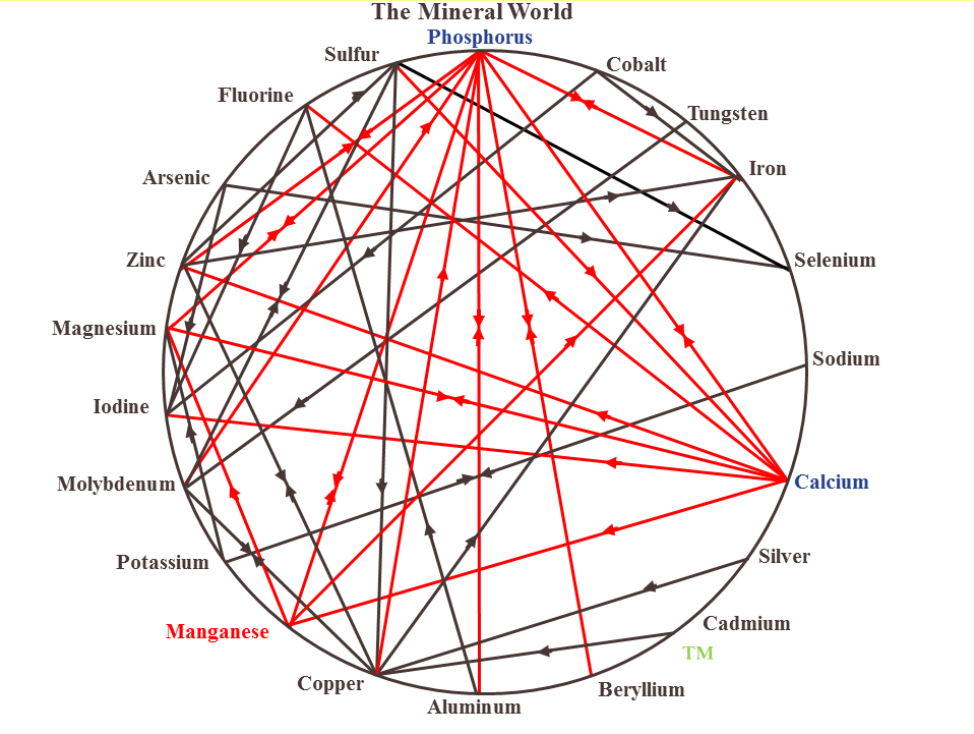
Genetic manipulation and the associated toxic chemicals have turned our "bread of life" into the "bread of death."

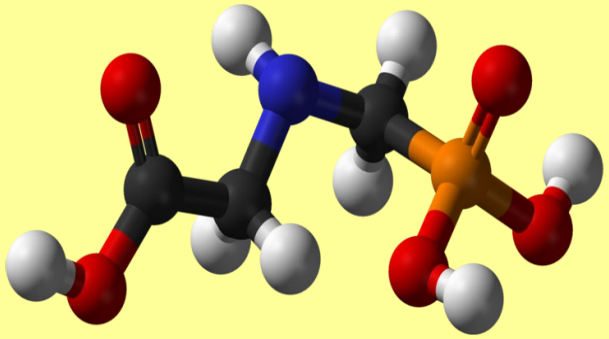


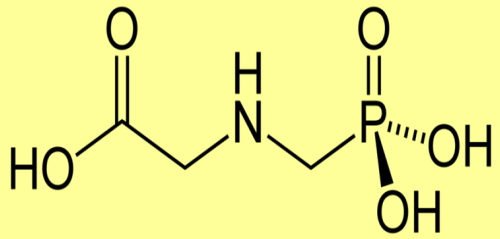
Effect(s) of glyphosate on Plant Nutrition & Disease

1. Glyphosate is a strong metal chelator and inhibits many plant essential enzymes, even at low, non-herbicidal rates.
2. Increases susceptibility to drought and disease.
3. Can persist and accumulate in the soil and plants with a half-life possible for as long as 22.5 years.
4. Toxic to beneficial soil organisms.
5. Inhibits the uptake and translocation of Fe, Mn, and Zn at very low, non-herbicidal rates.
6. Stimulates soil-borne pathogens, causing the growth of mold and mycotoxins.
7. Results in decreased nitrogen fixation.
8. Reduces physiological availability and concentration of Ca, Cu, Co, Fe, K, Mg, Mn, Ni, K, Se and Zn in plant tissues.
9. Reduces photosynthesis (CO_2 fixation).
10. Accumulates in food and feed products to enter the food chain as a risk to food safety.

GMOs and Glyphosate Mess-up the Mineral World







Animal and Human Health Concerns

- **Nutrient quality of feed and food – Lower nutrient content**
  - **Growth – skeletal development**
  - **Disease resistance – Mn deficient livers**
  - **Neurological effects – Parkinson's, ADHD**

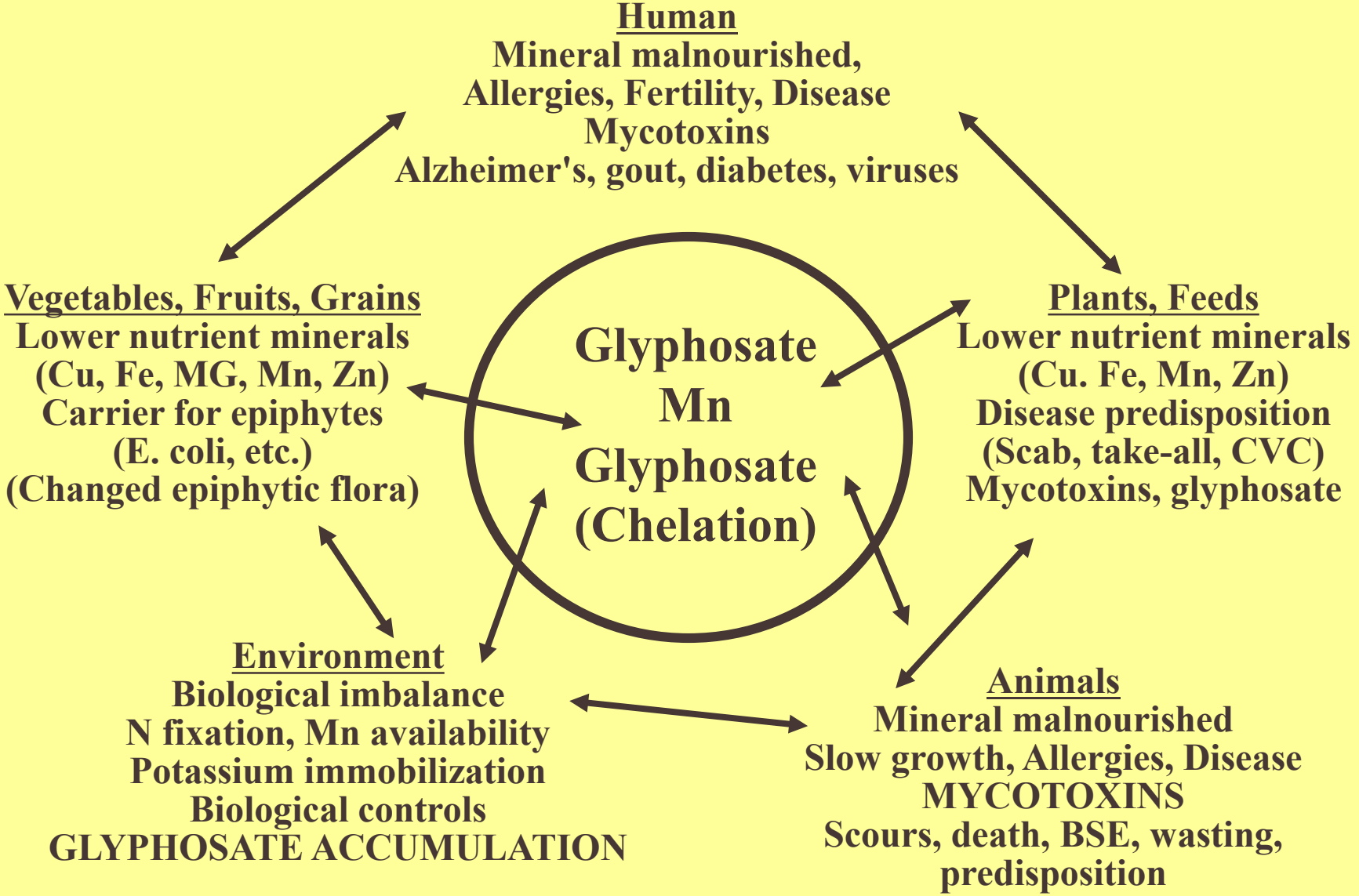
- **Reproductive failure – Direct effect of glyphosate residues in feed**
  - **Toxic to testicular cells, sperm, and sperm function**
  - **Toxic to embryonic, placental, and umbilical cord cells**
  - **Endocrine disruption - hormones**

- **Mycotoxins in feed**
  - **Fusarium toxins – neuro, estrogenic, hepatic toxins**
  - **Aflatoxins - carcinogens**

- **Allergy Reactions**
  - **Genetically Modified Foreign proteins causes allergies.**

Parts of this information courtesy of Dr. Don M. Huber

Potential Far-Reaching Impact of Glyphosate



Parts of this information courtesy of Dr. Don M. Huber

The use of Glyphosate tolerant crops not only damages the health of plants and soil microbes but also may produce feedstuffs that are toxic and nutritionally deficient.

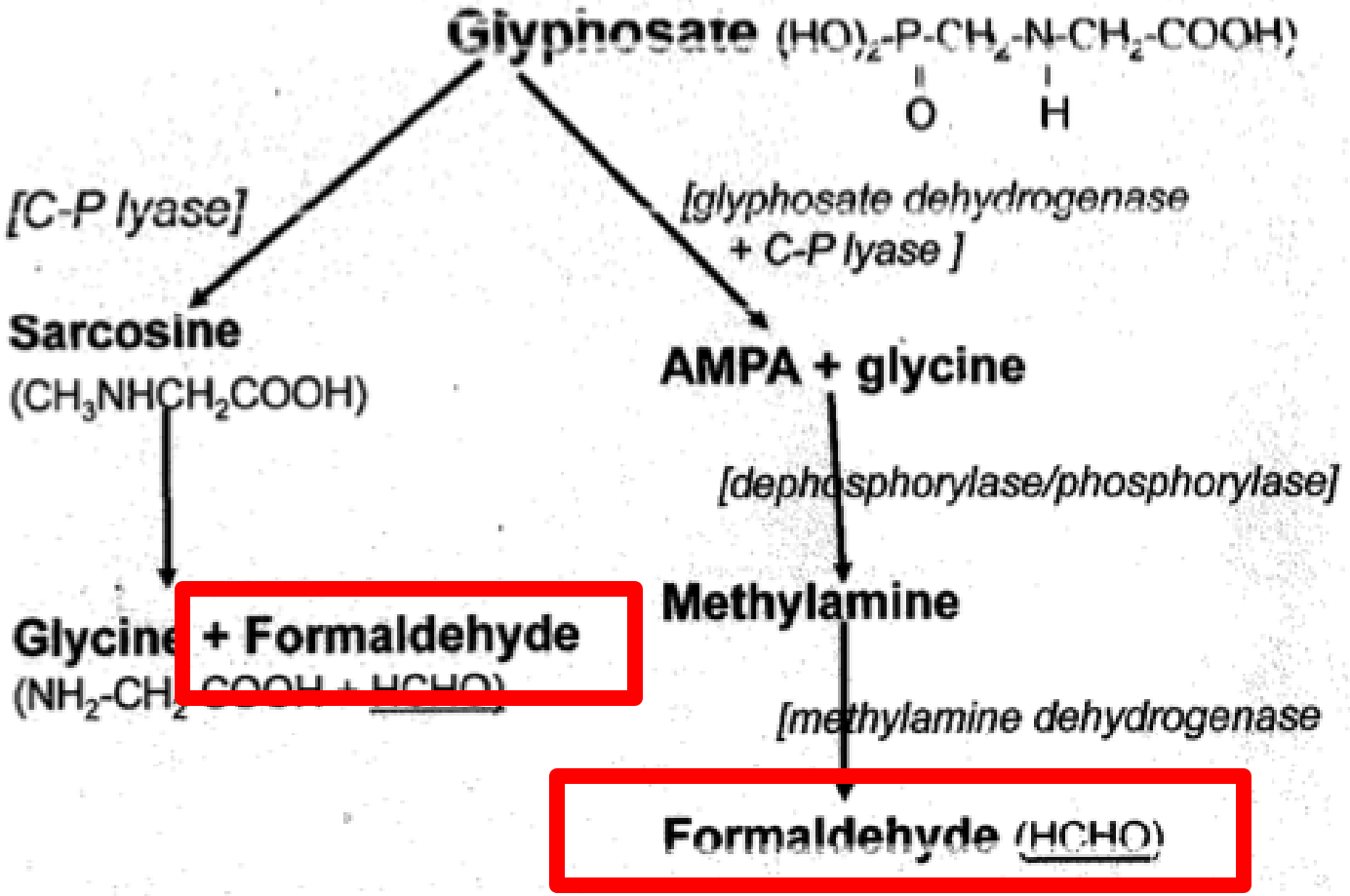
Crops not treated with glyphosate but grown in glyphosate contaminated fields may still harbor the chelating effects that interfere with mineral metabolism and reduce nutritional crop value.

Unfortunately, glyphosate residue is permitted by the EPA at some staggering levels.

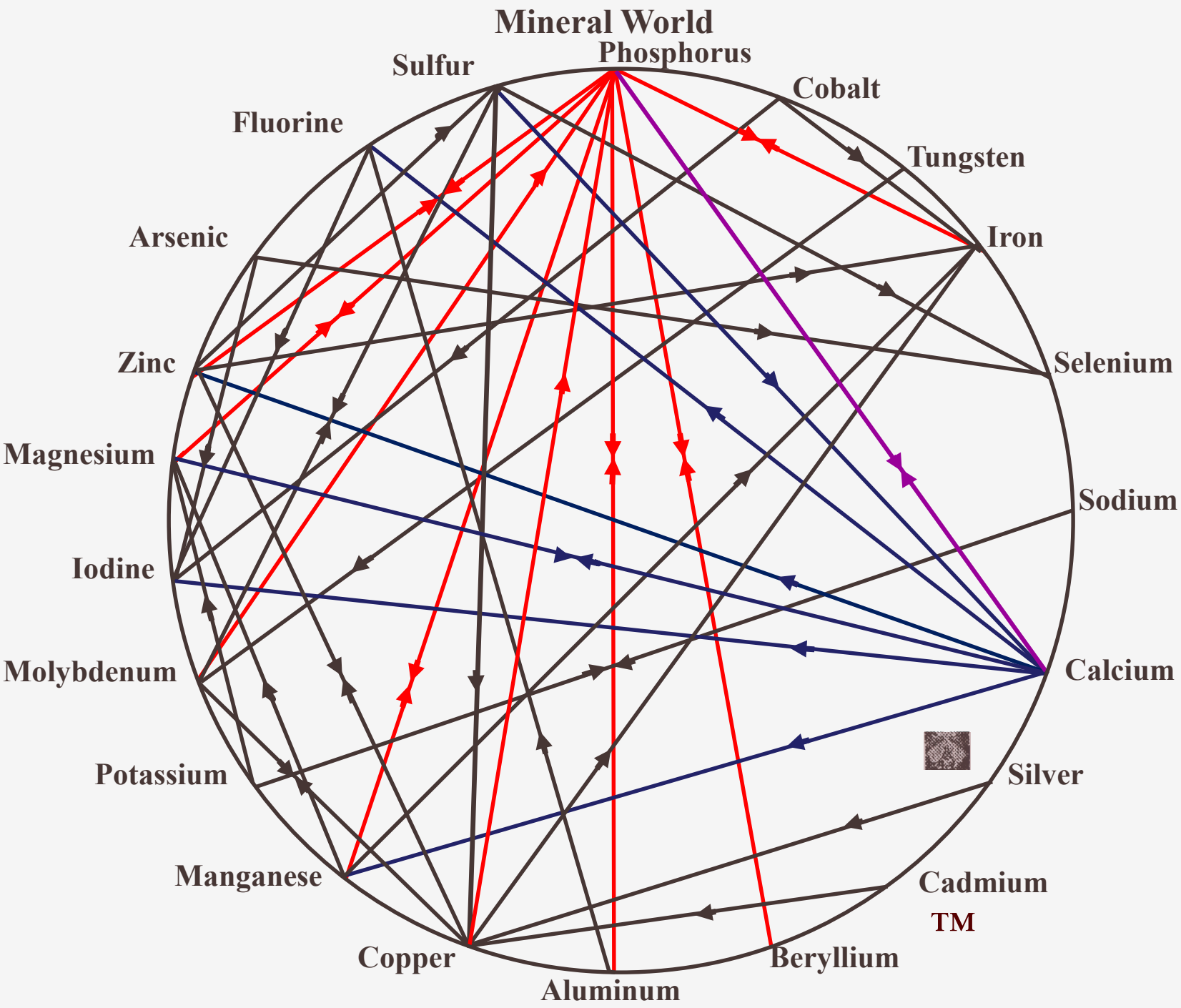
Soybeans and corn = 20 ppm
Alfalfa = 400 ppm
Corn silage = 100 ppm

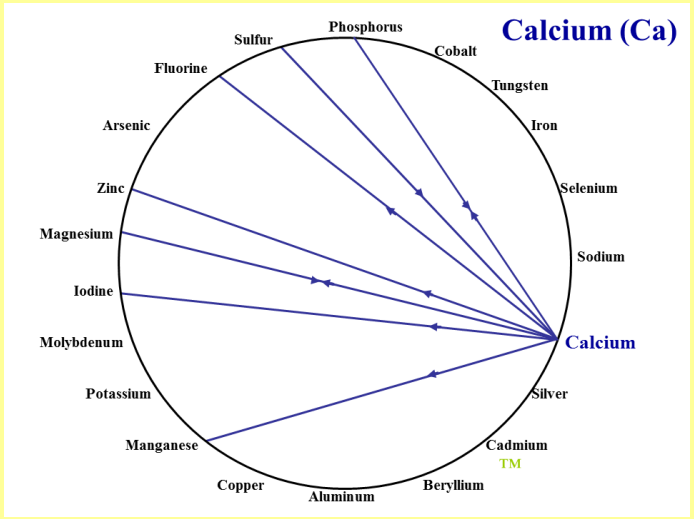
Glyphosate is toxic to beneficial GI flora at 0.1 ppm. Liver, kidneys and tissues = 0.1 ppbillion

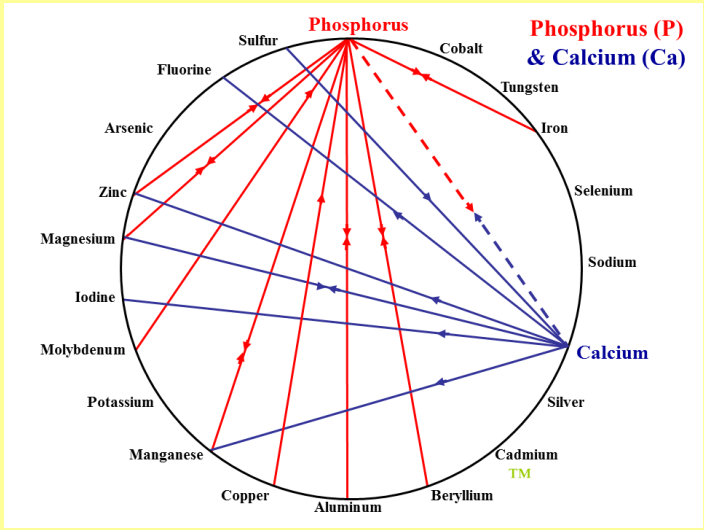
Degradation of Glyphosate

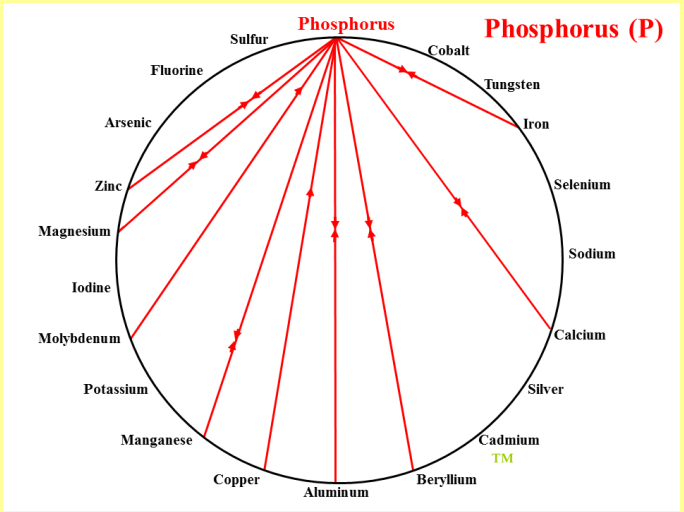


The Mineral World


Mineral World
Phosphorus
Sulfur
Cobalt
Fluorine
Tungsten
Arsenic
Iron
Zinc
Selenium
Magnesium
Sodium
Iodine
Molybdenum
Calcium
Potassium
Silver
Manganese
Cadmium
TM
Copper
Beryllium
Aluminum





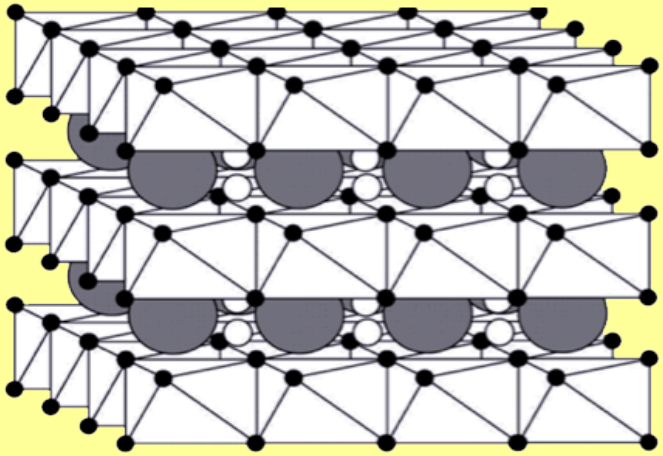


Calcium and Phosphorus are major elements that everyone seems to know about.

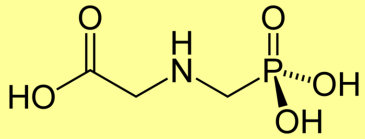
Together they have an effect on almost all elements in the Mineral World.

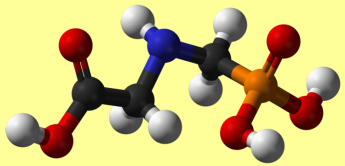
Glyphosate Matrix

This is a visual concept not the molecular structure.



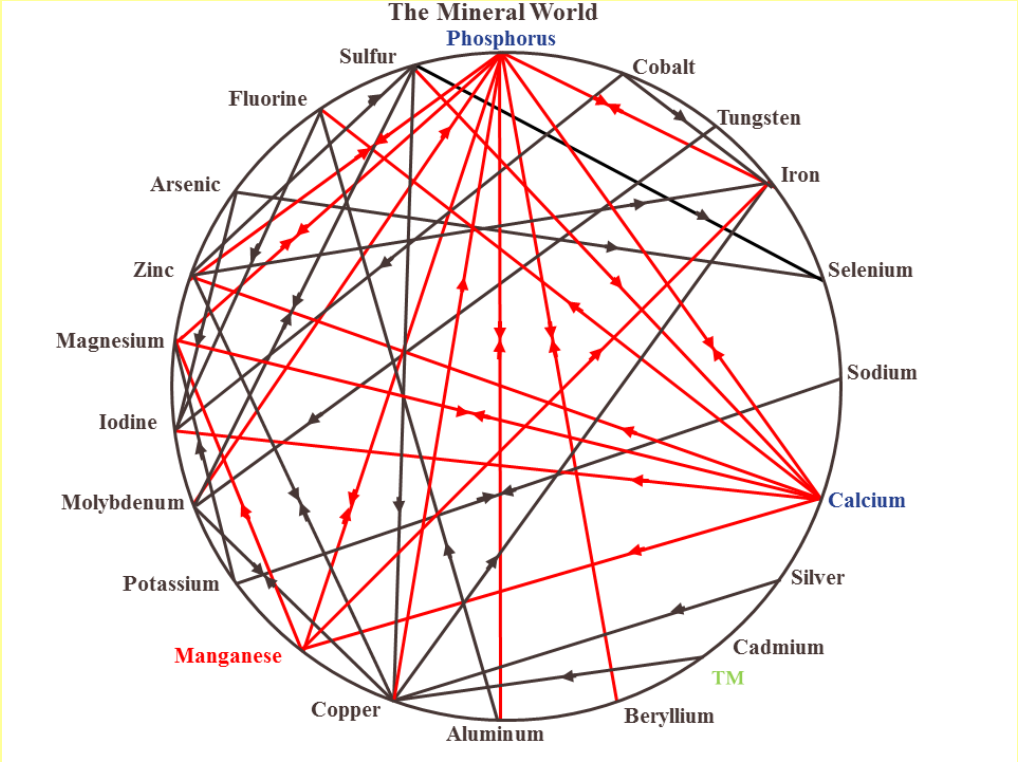
The inter-layer anion captures the cation mineral rendering it useless.





Glyphosate ties up:

Manganese (Mn)
Selenium (Se)
Calcium (Ca)
Copper (Cu)
Iron (Fe)
Potassium (K)
Magnesium (Mg)
Nitrogen (N)
Nickel (Ni)
Cobalt (Co)
Zinc (Zn)

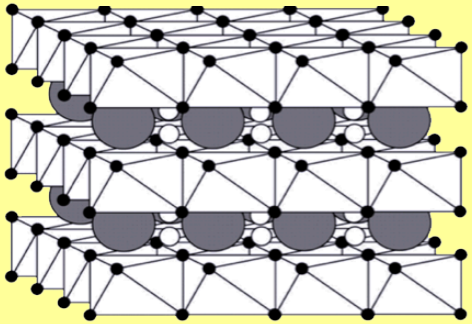


Glyphosate particularly reduces the availability of Manganese - an element necessary for the function of Calcium and Phosphorus.

Calcium and Phosphorus, available and in proper balance, are essential to the utilization of the majority of the other elements in the Mineral World as illustrated in the chart shown above.

The preceding is a simplified version of the actual mechanism by which Glyphosate affects the availability of Manganese, Calcium and Phosphorus and thus almost all the other elements as well. The actual mechanism is much more complex.

This is a visual concept not the molecular structure.

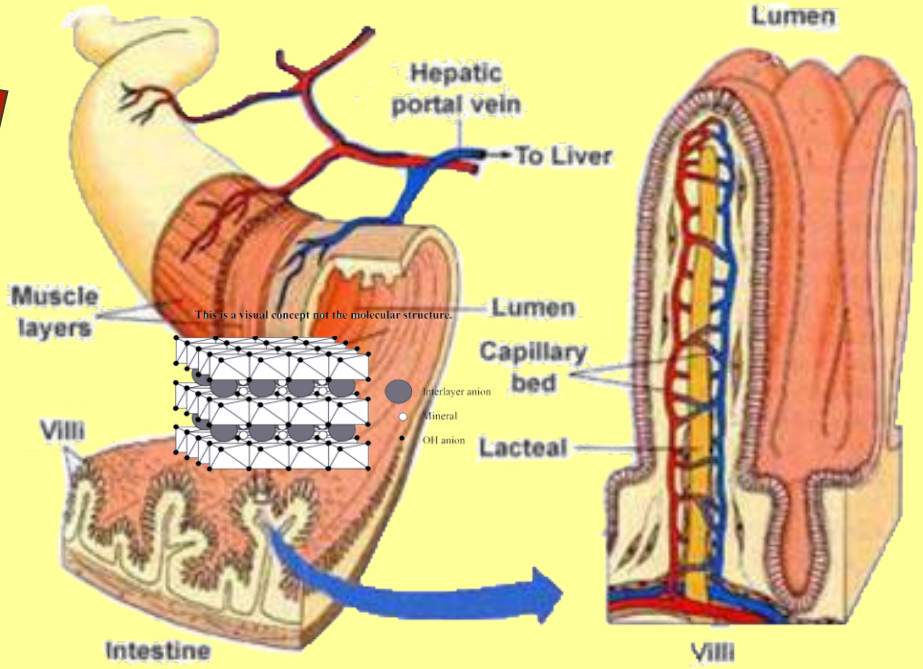


Glyphosate Matrix

Interlayer anion

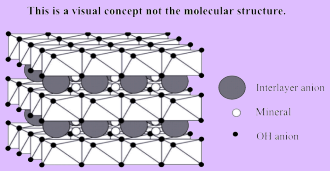
Mineral

OH anion



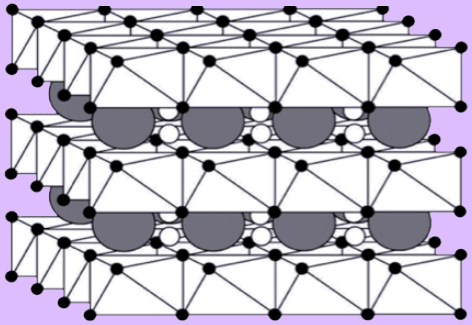
When a glyphosate contaminated plant is consumed, the glyphosate present in the plant can be released into the gut and tie-up the supplemental minerals in the ration.

The Impact of Glyphosate on Animal Health and How G.R.P.™ Makes Raising Livestock Successful and Fun



- Glyphosate, the active ingredient in Roundup, is a strong chelator that ties up the minerals in otherwise healthy plants.
- RoundUp Ready (GMO) plants can be extremely deficient in minerals in order to survive the glyphosate herbicide.
- When deprived of minerals, the defense system of the plant is compromised and the plant dies of a fungal disease.
- In animals the glyphosate kills off beneficial intestinal bacteria and ties up minerals in the gut.
- This lack of minerals and the resulting suppression of the immune system leads to sickness and potentially death.

This is a visual concept not the molecular structure.

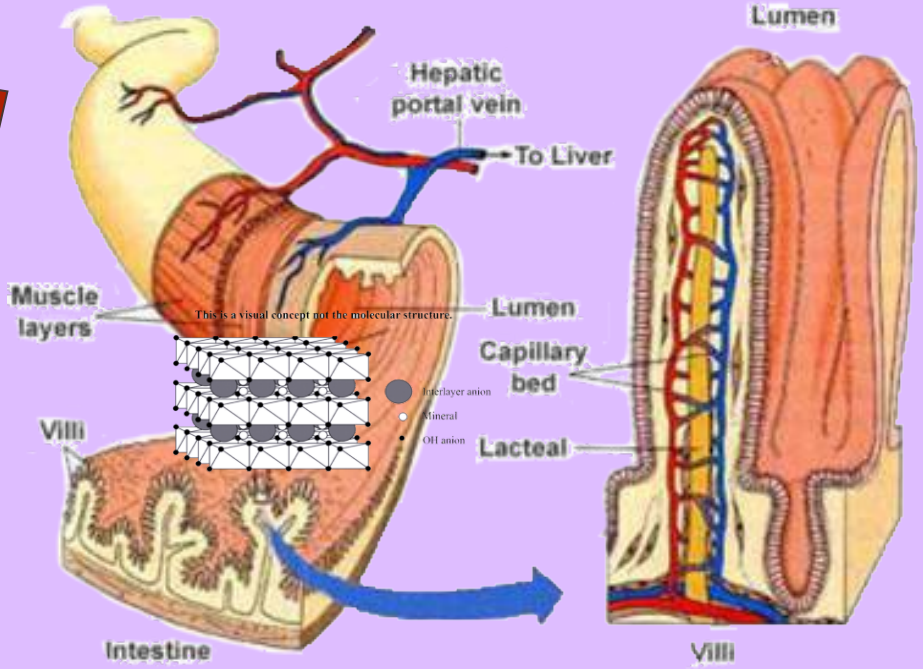


Glyphosate Matrix

Interlayer anion

Mineral

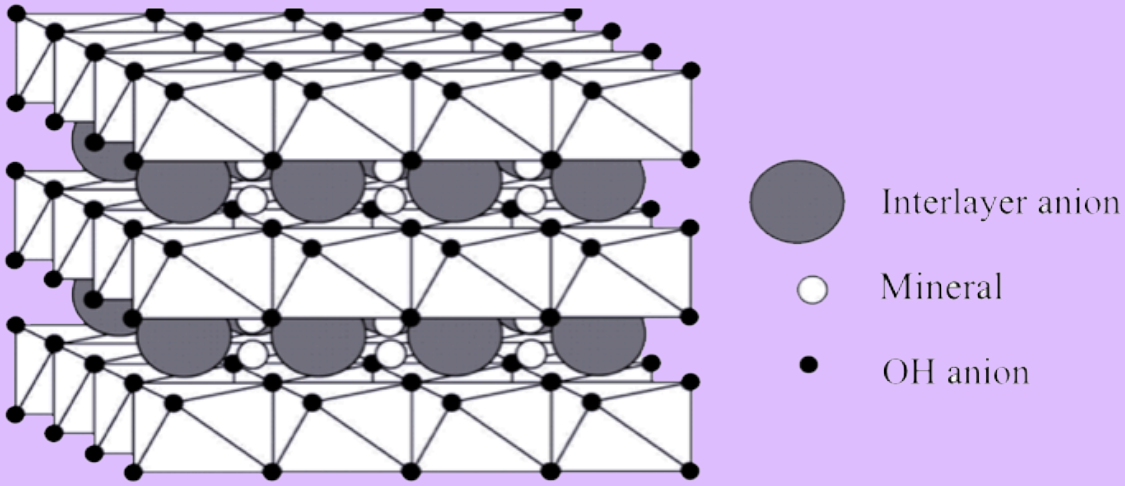
OH anion

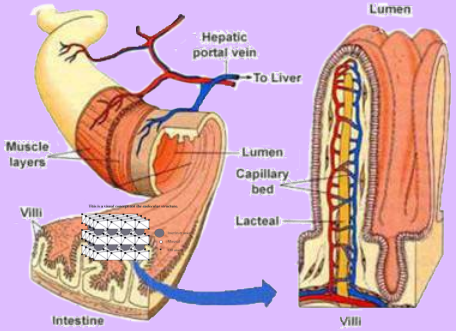


When a glyphosate contaminated plant is digested, the glyphosate present in the plant may be released into the gut and tie-up the supplemental minerals in the ration.

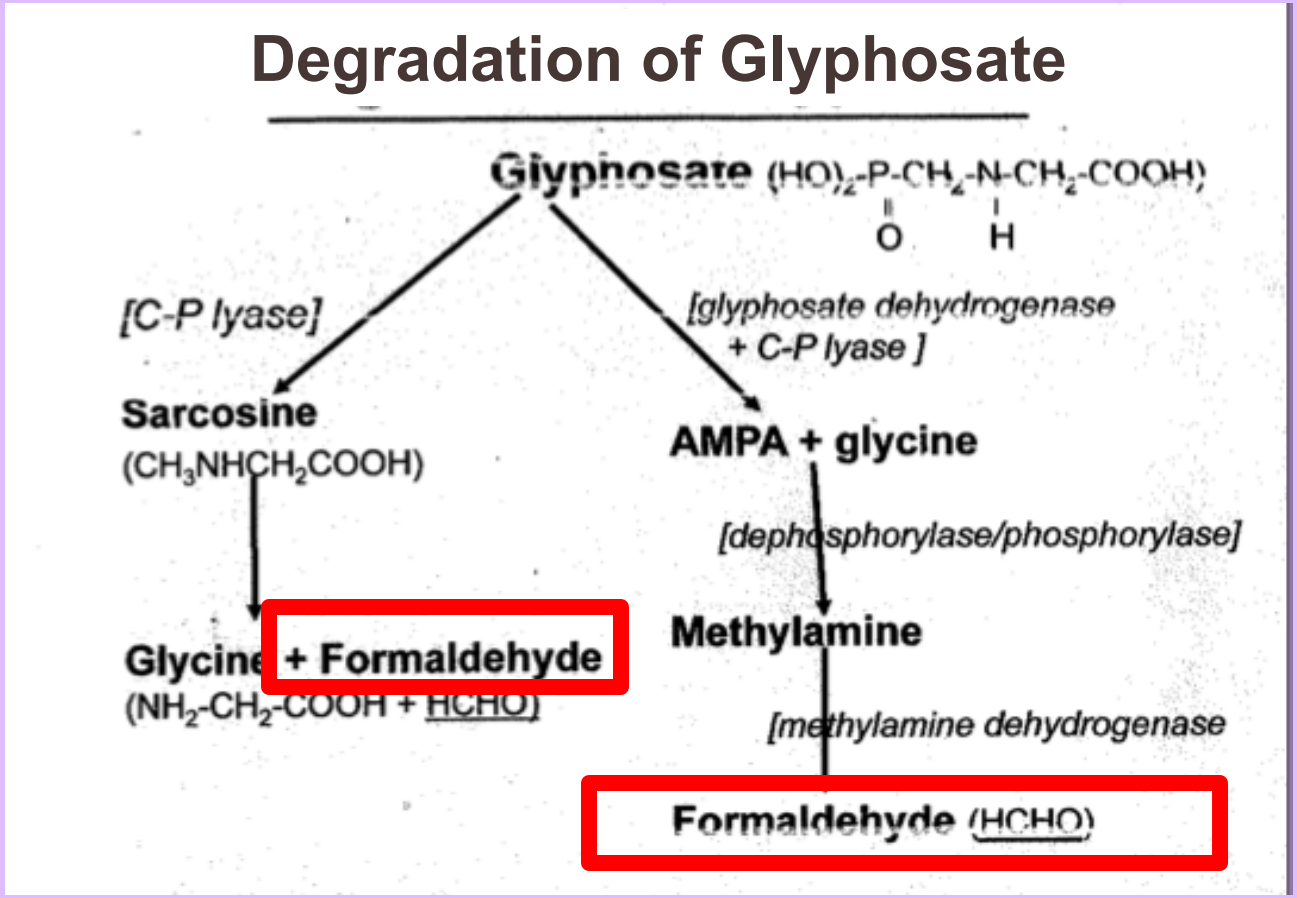
- G.R.P. neutralizes the charge on the molecule in the digestive tract.
- G.R.P. also has 11 chelated minerals that are too big to fit in the mousetrap (matrix) and are bio-available to the animal.

This is a visual concept not the molecular structure.





The end product of glyphosate when it is broken down in the digestive tract can be formaldehyde.



- When microorganisms degrade the Glyphosate molecule, the end product can be formaldehyde, which kills the microorganism(s) and stops the process.
- Glyphosate and formaldehyde adversely affect beneficial bacteria in the gut, and do not affect the pathogenic bacteria. This opens the door for increased incidence of Clostridium or Botulism and other problems in the intestine.
- Fecal samples have indicated levels of Botulism in animals.

G.R.P.™

- Neutralizes the negative effects of Formaldehyde on the digestive bacteria and the body's vital organs.
- Contains DUA (Digestion Utilization Absorption) technology, which supports the beneficial bacteria in the digestive tract.
- Supplies chelated essential minerals to support the immune system and other vital metabolic processes.

The Joy of Animal Husbandry will return to your livestock endeavors!

Notes:

Notes:

Notes:

Advanced Biological Concepts

P.O. Box 27

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Phone: 800-373-5971

Fax: 888-770-0735

Email: jgh@a-b-c-plus.com

www.abcplus.biz

Free Choice G.R.P.™

Dietary Nutritional Supplement for all Classes of Ruminants and Equine

G.R.P.™

Directions:
Free Choice

Free Choice G.R.P.™ -
25 LB Bag – Item no. A202

Glyphosate Matrix

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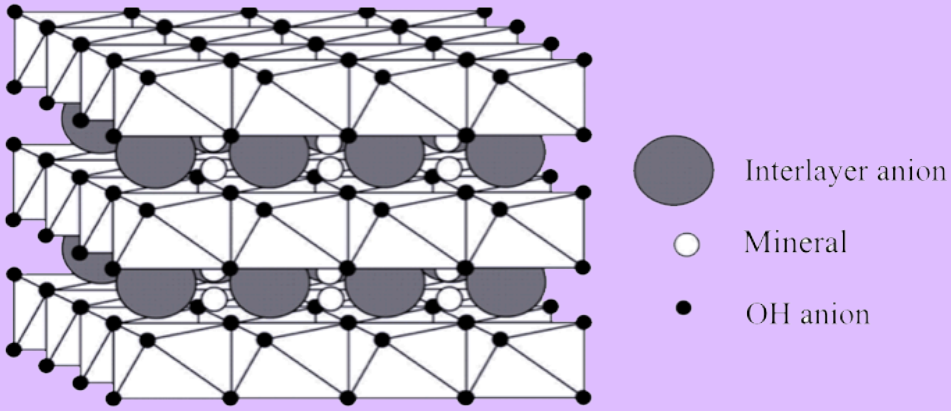

ADVANCED BIOLOGICAL CONCEPTS®
Applied Common Sense®

D.U.A. G.R.P.™

USDA ORGANIC

Dietary Nutritional Supplement for Dairy Cattle, Beef Cattle, Sheep, Goats, Swine, Poultry, and Llamas

GUARANTEED ANALYSIS

Crude Protein	(min)----------12.0 %	Phosphorus (P)	(min)----------1.0 %
Lysine	(min)----------0.05 %	Salt (NaCl)	(min)----------3.0 %
Methionine	(min)----------0.05 %	Salt (NaCl)	(max)----------3.5 %
Crude Fat	(min)----------3.5 %	Sodium (Na)	(min)----------1.0 %
Crude Fiber	(max)---------15.0 %	Sodium (Na)	(max)----------1.5 %
Acid Detergent Fiber (ADF)	(max)---------32.0 %	Copper (Cu)	(min)----------650 PPM
Calcium (Ca)	(min)----------5.0 %	Copper (Cu)	(max)----------750 PPM
Calcium (Ca)	(max)----------6.0 %	Zinc (Zn)	(min)--------1,500 PPM
		Vitamin A	(min)----180,000 IU/LB

INGREDIENT STATEMENT

This product contains only certified organic agricultural products or ingredients that conform to the NOP's national list of materials acceptable for organic livestock production.™

INGREDIENTS:

Dried Lactobacillus Acidophilus Fermentation Product, Organic Oat Groats, Diatomaceous Earth, Reed-Sedge Peat, Organic Linseed Meal, Dicalcium Phosphate, Calcium Carbonate, Attapulgite Clay, Organic Dehydrated Alfalfa Meal, Monosodium Phosphate, Organic Soybean Oil, Organic Dried Kelp, Bentonite, Sodium Aluminosilicate, Salt, Choline Chloride, Magnesium Oxide, Yeast Culture, Ferrous Sulfate, Zinc Sulfate, Sodium Sulfate, Potassium Chloride, Manganous Oxide, Zinc Hydroxychloride, Ascorbic Acid, Vitamin E Supplement, Manganese Hydroxychloride, Manganese Sulfate, Basic Copper Chloride, Organic Garlic, Organic Fenugreek, Niacin, Sulfur, Citric Acid, Folic Acid, Potassium Sulfate, Magnesium Sulfate, Riboflavin, Vitamin A Acetate, Organic Apple Cider Vinegar, Copper Sulfate, Organic Feed Grade Dried Milk, Calcium Pantothenate, Organic Egg Product, Pyridoxine Hydrochloride, Organic Cloves, Organic Lecithin, Organic Barley, Vitamin D3 Supplement, Cobalt Sulfate, Beta-Carotene, Calcium Hydroxide, Vitamin B12 Supplement, Biotin, Thiamine Mononitrate, Organic Dandelion, Ethylenediamine Dihydriodide, Organic Parsley, Magnesium Chloride, Organic Althea Root, Organic Dried Tomato Pomace, Organic Yucca Schidigera Extract, Organic Horseradish, Organic Licorice, Organic Sweet Orange Peel, Organic Aloe Vera Gel Concentrate, Organic Peppermint, Organic Calendula, Organic Ginger, Organic Coconut Oil, Organic Sage, Organic Common Fennel, Organic Thyme, Organic Lemon Grass, Organic Elder Flowers, Cobalt Carbonate, Organic Papain, Organic Basil, Organic Violet Leaves, Organic Coconut Flour, Organic Juniper Berries.

DIRECTIONS FOR USE:

DAIRY CATTLE:
Top Dress or Add Mix:
1/2 ounce (14.17 g) per head per day.

CALVES:
Top Dress or Add Mix:
1/2 ounce (14.17 g) per head per day.

BEEF CATTLE:
Top Dress or Add Mix:
1/4 ounce (7.09 g) per head per day.

Receiving: Top Dress or Add Mix:
1/2 ounce (14.17 g) per head per day for 14 days.

SHEEP & GOATS:
Top Dress or Add Mix:
1/8 ounce (3.54 g) per head per day.

SWINE:
Finishing:
Add **3** Pounds Per Ton of Complete Ration.
Grower and Lactation:
Add **5** Pounds Per Ton of Complete Ration.
Starter and Gestation:
Add **7** Pounds Per Ton of Complete Ration.

POULTRY:
Starter: Add **4** Pounds Per Ton of Complete Ration.
Complete Feed: Add **2** Pounds Per Ton of Complete Ration.

LLAMAS/ EMUS/ALPACAS:
Top Dress or Add Mix:
1/4 ounce (7.09 g) per head per day.

Manufactured for:
Advanced Biological Concepts®
P.O. Box 27 • Osco, Illinois 61274-0027
Phone: 800-373-5971 • **Fax:** 888-770-0735
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FPD680-25

Item no. **A101 – 25 Lb Bag**

Certified Organic by: ECOCERT SA

FPD710-15