

# Agricultural Chemicals and Human Health

The green revolution, the use of fossil-fuel based fertilizers and pesticides, was only necessary because we have been turning living soil to dirt through  
**PLOWING – MONOCULTURES – FALLOWING**  
 This unsustainable form of agricultural is all about killing:  
 weeds, fungi, insects, biodiversity, and even the farmer's profit

Pesticides = Herbicides, Fungicides, Insecticides

Synthetic fertilizers and monocultures give rise to the need for pesticides

Glyphosate is the most widely used pesticide in the world.

Glyphosate is the active ingredient of most weed killing herbicides



Glyphosate may be the most significant toxin in the environment. It used to be sprayed selectively, but with the introduction of genetically engineered seeds in 1996, it is now sprayed on the whole field. Weed resistance has led to a more-on attitude.

**Herbicide Failure Can Be Rapid**  
 occurs at a logarithmic rate

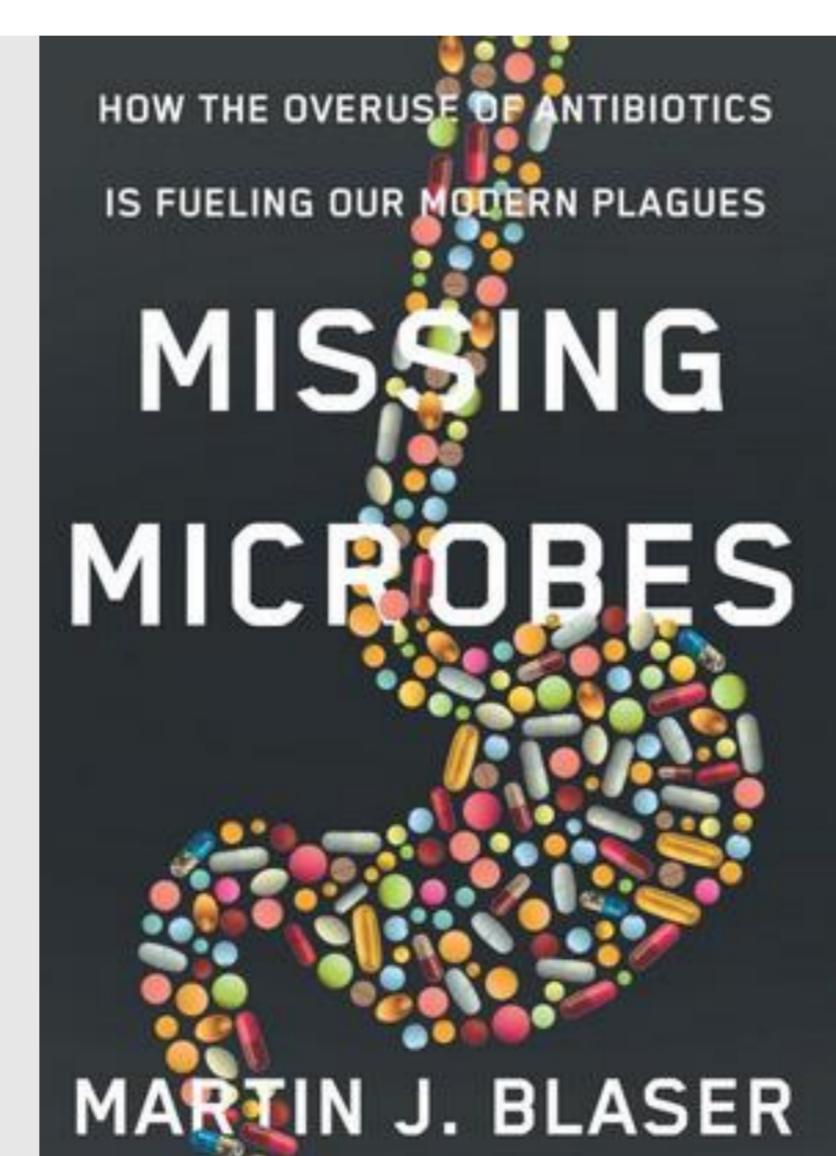
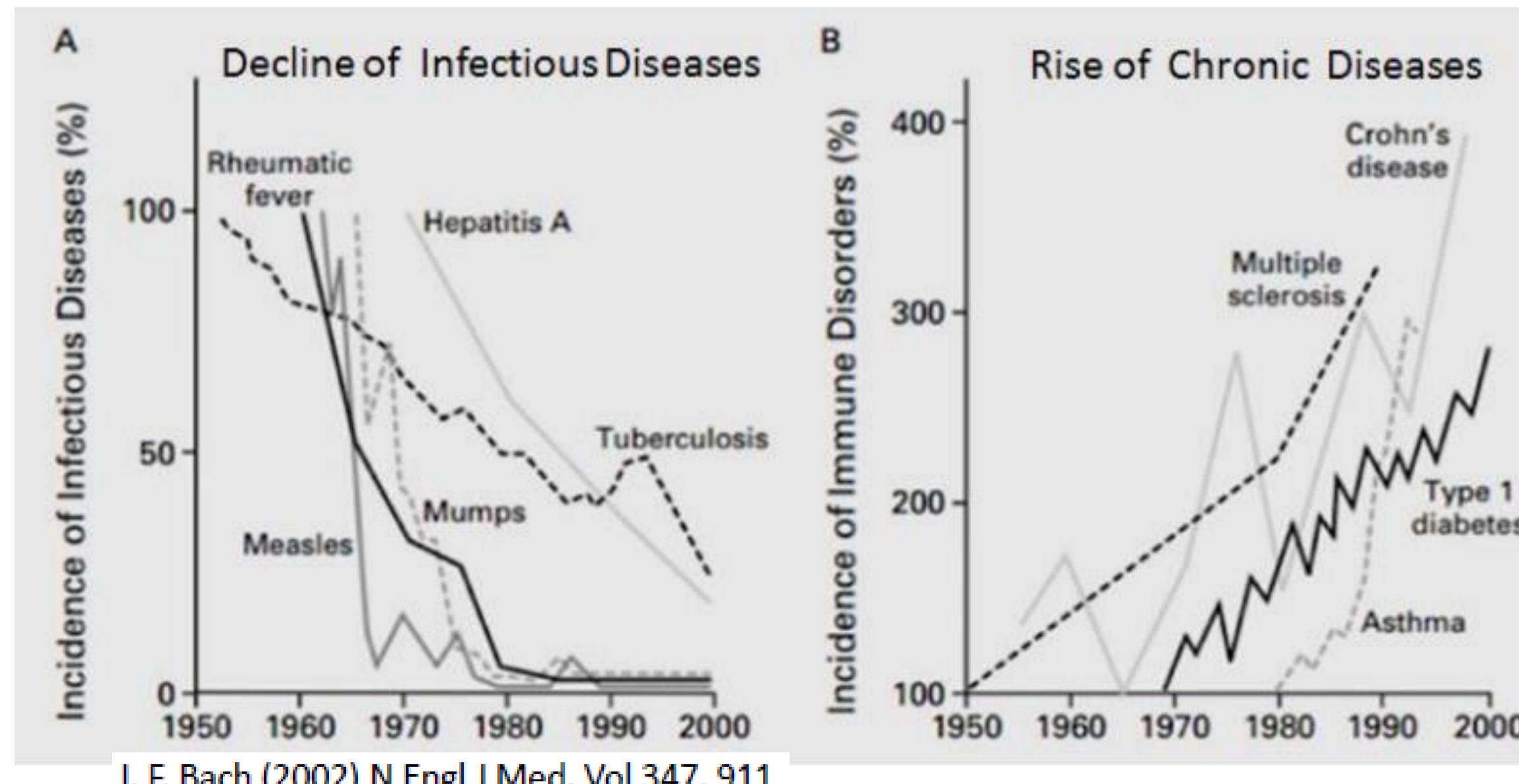
Resistance confirmed in 41 weed species worldwide

<https://www.pioneer.com/home/site/us/agronomy/library/glyphosate-resistance-in-weeds/>

Treatment year	% Resistant weeds in total population	Weed control
0	0.001	Excellent
1st Application	0.0143	Excellent
2nd Application	0.0265	Excellent
3rd Application	0.0294	Excellent
4th Application	0.0422	Excellent
5th Application	0.0605	Failure

## The Largest Use of Antibiotics Occurs in Agriculture

Glyphosate, the active ingredient in herbicides like Roundup™, is a broad spectrum antibiotic. 39 times more Glyphosate is used than all the antibiotics in medicine (US).



Back in 2000, we didn't know that we depend on our gut microbes to:

- help digest our food
- produce vitamins
- make neurotransmitters
- regulate immune system

Are all these antibiotics giving rise to the explosion of chronic diseases?

### Canada Needs to Reclaim the Precautionary Principle

The maximum acceptable concentration of Glyphosate in Canadian drinking water is 2800 times the EU maximum acceptable level.

<https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-glyphosate.html> <http://www.egeis-toolbox.org/documents/4%20drinking%20water%20legislation%20draft%20v3%20.pdf>

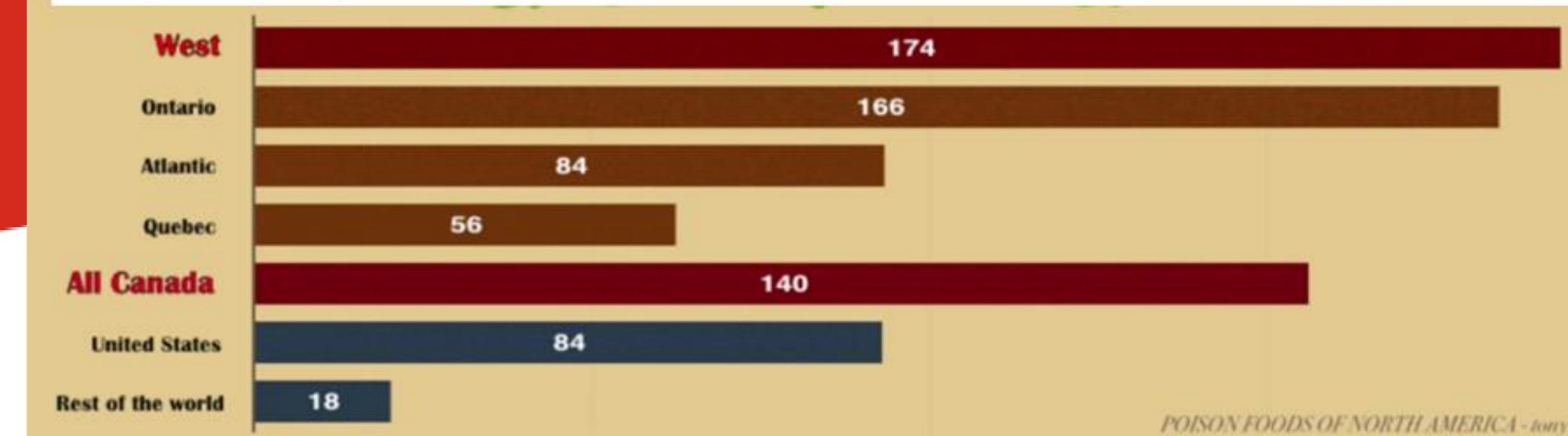
### Canada High on Glyphosate

Based on testing by the Canadian Food Inspection Agency

Poison Foods of North America by Tony Mitra



### Glyphosate in Canadian Foods According to Region and Compared to Imported Foods from the USA and the Rest of the World



POISON FOODS OF NORTH AMERICA - tony mitra

2015, Glyphosate declared a probable carcinogen by World Health Organization

<https://www.theguardian.com/environment/2015/mar/21/roundup-cancer-who-glyphosate>

2018, Monsanto ordered to pay \$78M as jury rules weedkiller caused man's cancer



Mar. 2019, Monsanto found liable for California man's cancer ordered to pay \$80M in damages

May 2019, Monsanto must pay couple \$2 billion in largest verdict yet over cancer claims

<https://www.theguardian.com/business/2019/may/13/monsanto-cancer-trial-bayer-roundup-couple>



Poster Created by Phil Gregory, Professor Emeritus, University of British Columbia  
 "The Magic of Soil" <https://www.youtube.com/watch?v=AWILYsf5ts>