

What is the Benefit of Organic Food?

Scott Stoll, M.D.
Chief Medical Director, Rouxbe
Co-Founder Plantrician Project

History

- 1939 Lord Northbourne: Look to the Land book coined term organic farming
- USDA-Organic Foods Production Act 1990
- Must be grown on land that has been free of prohibited pesticides and substances for at least three years before harvest
- Consistent careful management of soil fertility
- Correct dispersal of manure
- Use prevention as the first form of pest control
- Must have buffer zones that protect from the flow of unwanted substances from nearby farms
- Not all countries have Organic oversight legislation



Organic or Natural? What's the difference?

INGREDIENT/PROCESSING	ORGANIC	NATURAL	CONVENTIONAL
Artificial flavors	NEVER	No	May be used
Artificial colors	NEVER	No	May be used
Artificial preservatives	NEVER	No	May be used
Artificial fertilizers	NEVER	May be used	May be used
Artificial pesticides	NEVER	May be used	May be used
Irradiation	NEVER	May be used	May be used
Genetically Engineered Ingredients	NEVER	May be used	May be used

Understand what you are purchasing

Why Buy Organic

- Health Benefit
- Relationship: Support Health Farm Families
- Support Regenerative Agriculture/ Environment
- Animal Welfare
- Stewardship



Pesticides

- 2012 Study: Increasing Fruit and Veg intake prevent 70,000 cancer cases annually: 10 cases/year directly attributed to pesticides
- Residues decreased since 1996-Food Quality Protection Act
- People purchase organic more to avoid pesticides than health benefit.-2010



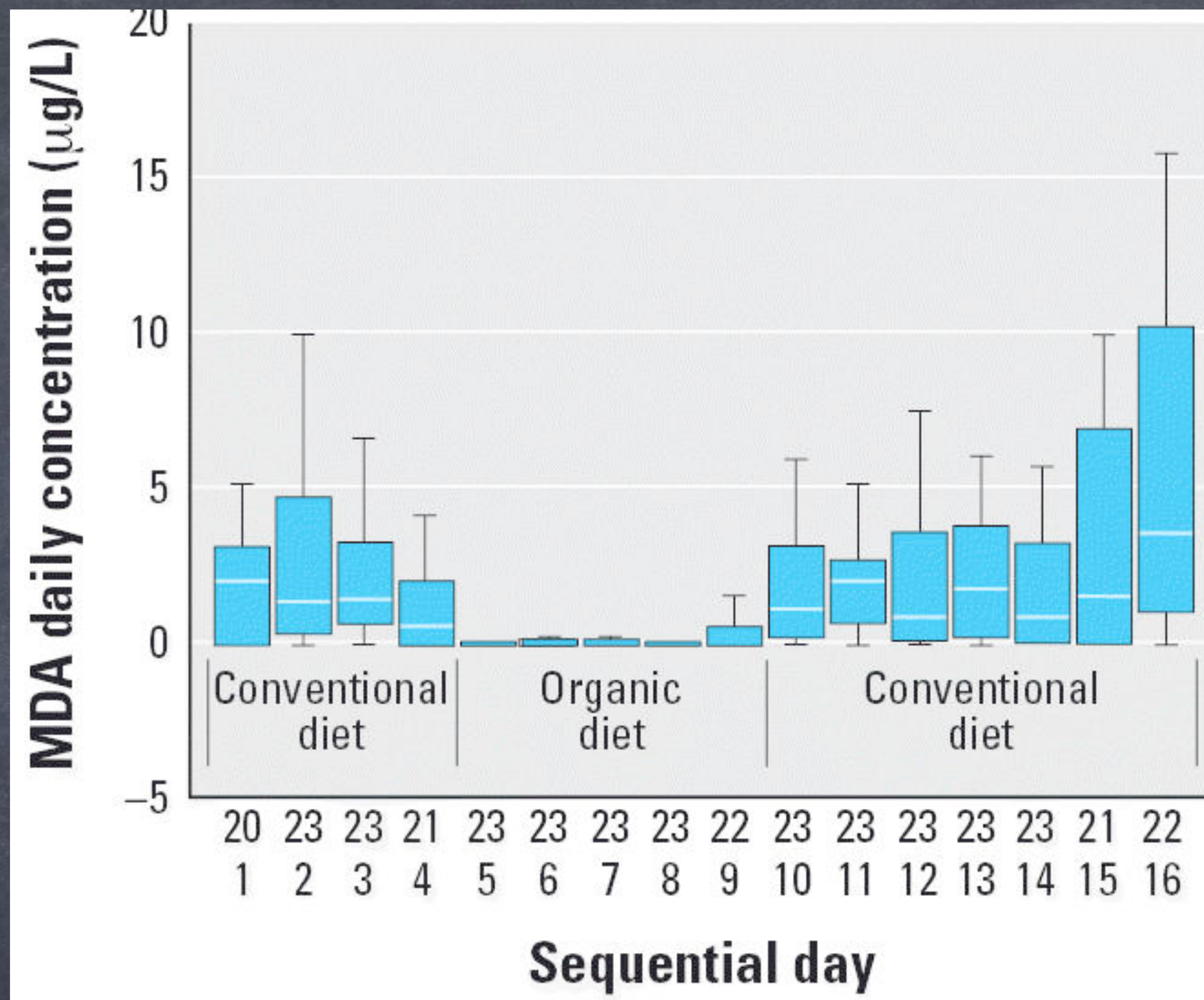
Pesticides

- Children at greatest risk
- Toxins remain longer in child's body
- Epigenetic effect
- Concentrated because of size
- Small amounts may alter neurochemistry



Research Overview

- Average American traces of 29 different pesticides in tissue
- Farm Families research
 - Prenatal exposures reduced IQ 7 points and poorer cognition for highest quartile exposure
 - Highest levels of exposure in residential areas a contributing factor in childhood leukemia
 - Highest levels of insecticide metabolites in pregnant mothers associated with shortened gestation and reduced birthweight



Measurable Pesticides

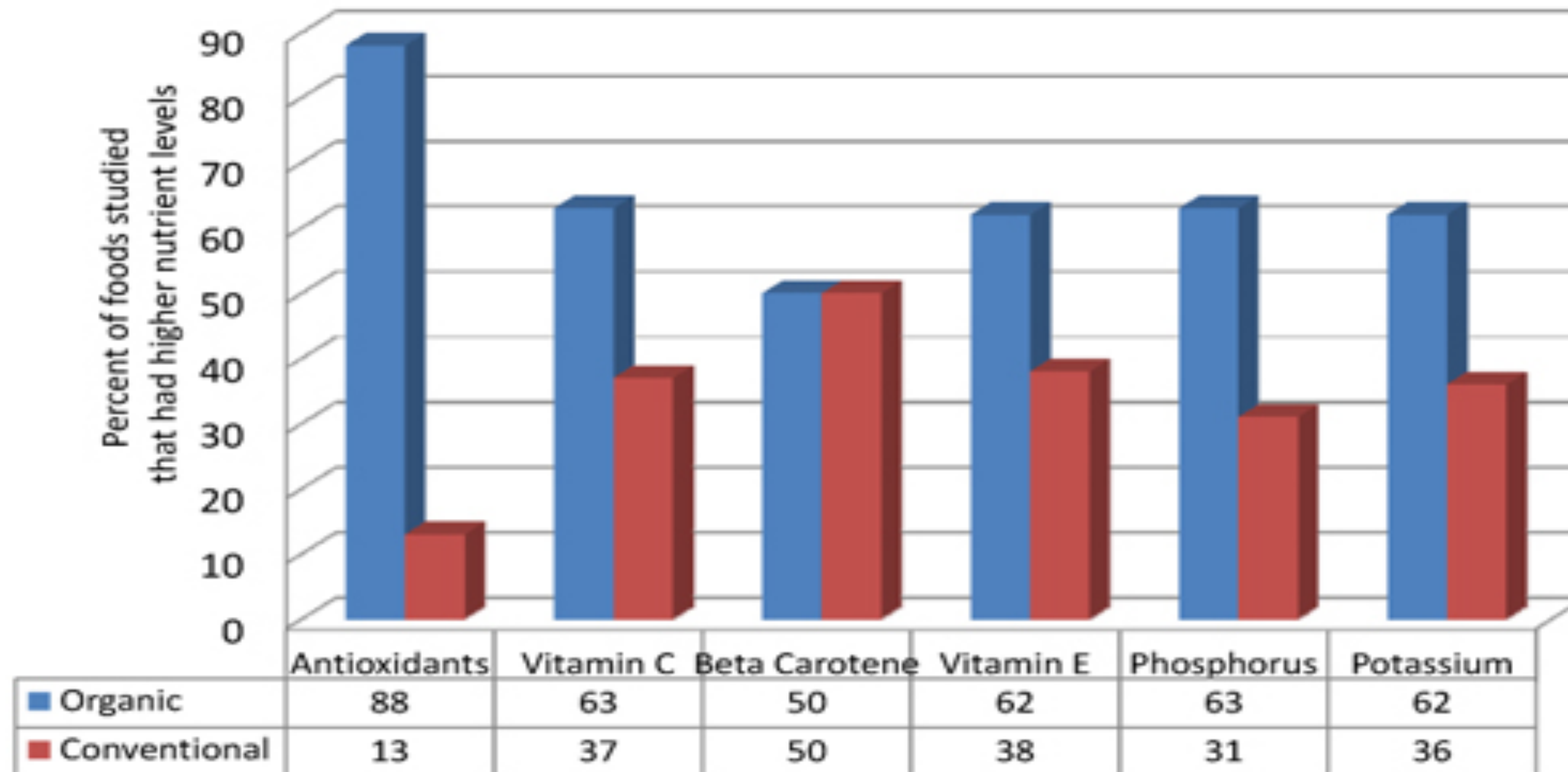
Lu, Chensheng, et al. "Organic diets significantly lower children's dietary exposure to organophosphorus pesticides." *Environmental health perspectives* 114.2 (2006): 260.

Nutritional Benefit

- Outcomes vary based on nutrients studied
- 2014 Large Meta-analysis: Organic 50% higher anthocyanin and Flavonols, lower cadmium
- Current scientific consensus is that insufficient evidence for conclusions of human health benefits
- General decline in the nutritional content of F/V 1% per year.



NUTRIENTS IN ORGANIC VERSUS CONVENTIONALLY GROWN FRUITS AND VEGETABLES

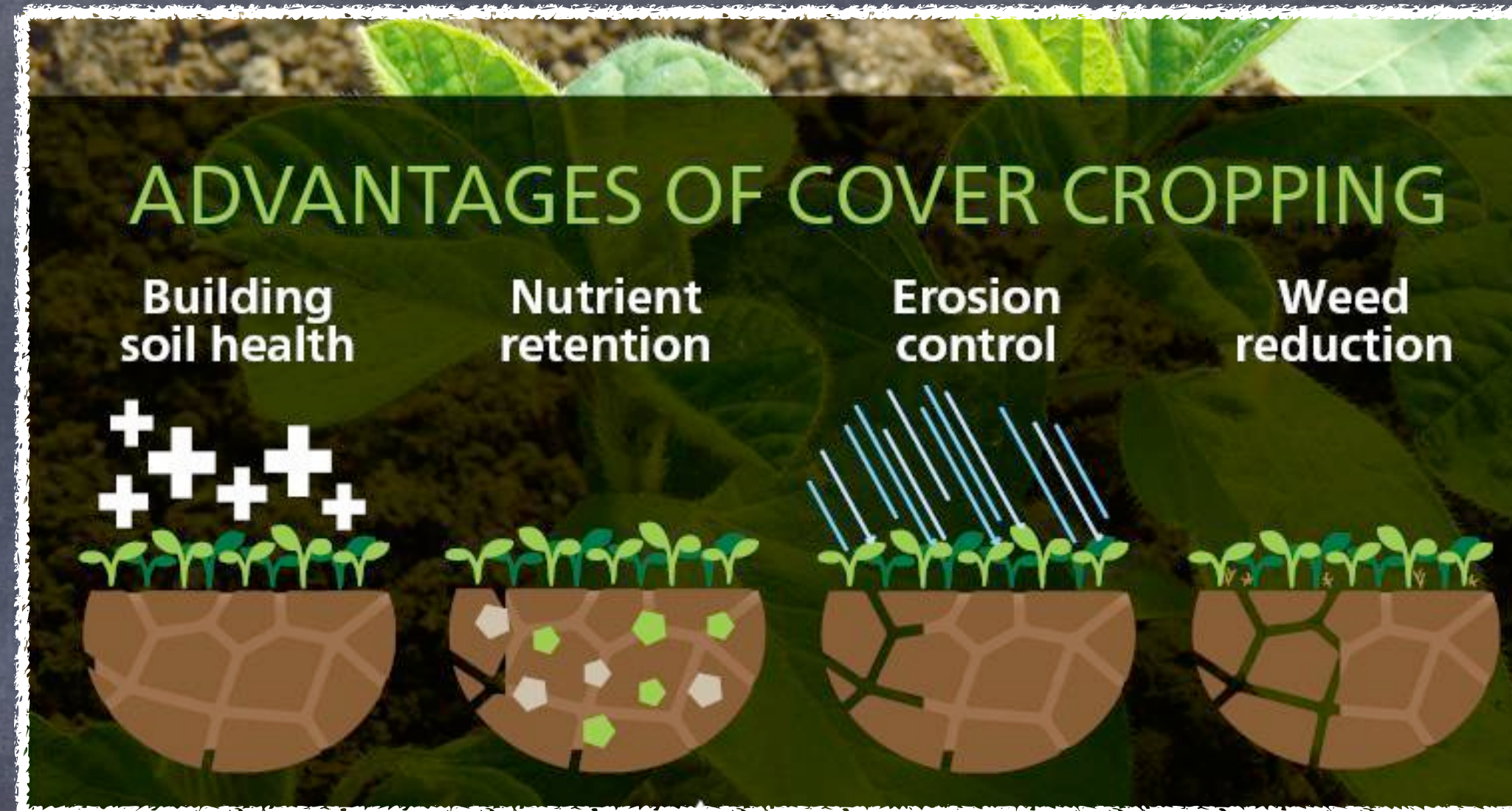


Nutritional Benefit

Chart by Lisa Watson. Data from "New evidence confirms the nutritional superiority of plant-based organic foods,"... by Charles Benbrook, et. al. The Organic Center, March 2008.

Agriculture and Animal Welfare

- UN: Losing 1% topsoil annually last 40 years with 60 harvests remaining
- Regenerative agriculture-cover crop, soil-biome, carbon sequestration
- Care and concern for animals living conditions-CAFO



Co\$t

- Research 10-15% potential increase organic plant based diet
- 47-68% when animals and processed food added
- Real Cost of Unhealthy Food
 - Lower wages to employees \$135 billion in federal assistance programs
 - \$2 Trillion for obesity complications
 - Agricultural erosion \$500 billion
 - Individual premiums and copays increased >100%





STANDARD AMERICAN DIET
2 football fields (1.3 acres each) feed *1 person* per year

PLANT-BASED DIET
2 football fields (1.3 acres each) feed *14 people* per year

