

When Food Safety Meets Toxic Use Reduction

Boce Zhang

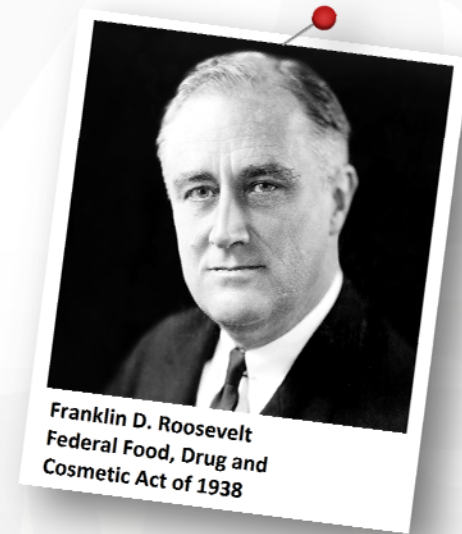
Biomedical & Nutritional Sciences

Introduction

FSMA

Evolution of Food (Produce) Safety

- Effective in Jan 4th, 2011
- 1st major reform of food safety laws for over 70 years!



FSMA Framework for Food Safety

-  Human Food
-  Produce Safety
-  Imports
 - Foreign Supplier Verification
 - Accredited Third Party Certification
-  Animal Food

Background

FSMA: Areas of Focus

- Agricultural water
- Biological soil amendments
- Domesticated and wild animals

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- Personnel
 - Equipments
 - Packaging

**FDA FOOD SAFETY
MODERNIZATION ACT**

THE FUTURE IS NOW



FSMA-TURI/TURA?

- **Common Chemical/Cleaner/Sanitizer**
 - Chlorine Materials (listed)
 - Peracetic acid/ peroxyacetic acid (listed)
 - Ozone (listed)
 - Phosphoric acid (listed)
 - Potassium hydroxide (listed)
 - Sodium hydroxide (listed)
 - Hydrogen peroxide (not listed, but not popular neither)

**FDA FOOD SAFETY
MODERNIZATION ACT**

THE FUTURE IS NOW

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL



Food Safety Lab @ UML

FSMA does not contradict TURA!

What we can do:

- Reduce toxic chemical usage.
- Screen greener cleaner/ sanitizer options for food processors.
- Develop zero toxic alternatives using Generally Recognized as Safe (GRAS) substances.
- Validate & improve SOP



Food Safety Lab @ UML

Capacity & Equipment

- Biosafety cabinet – BSL2+
- Analytical Equipment
 - HPLC, GC-FID: ingredient analysis
 - QCM-D: simulated sanitation process for screening alternative options.



How can you make a difference?

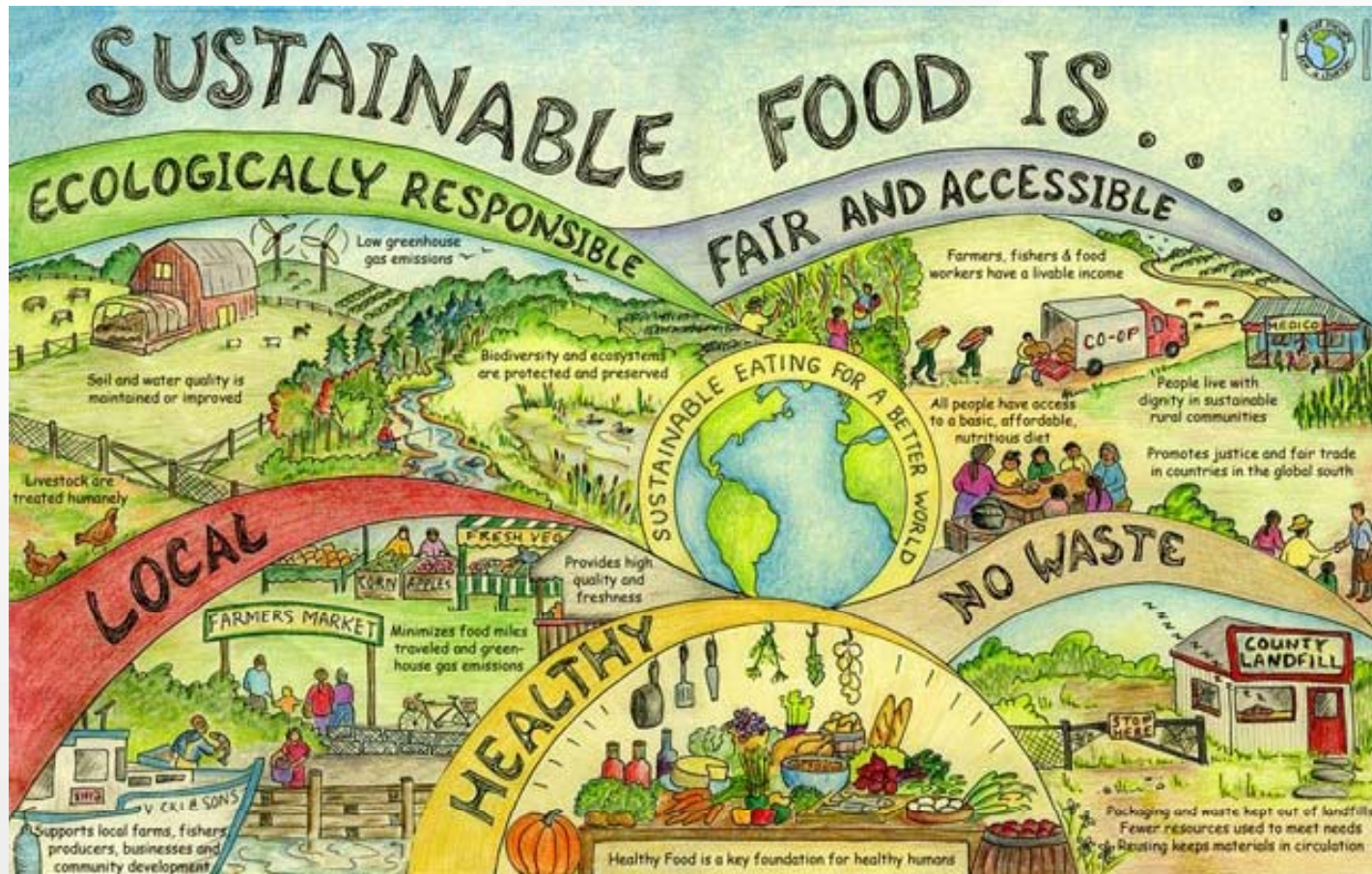
FSMA: Compliance, cost, product quality & shelf life, food safety, lobbying, etc.



TURI is the only organization that supports small & mid-scale food businesses to explore ‘green food safety solutions’.



Thank You!



Resources:

- **Overview:**

<https://www.fda.gov/Food/GuidanceRegulation/FSMA/default.htm>

- **Preventive control:**

<https://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm334115.htm>

- **Seafood:**

<https://www.fda.gov/food/guidanceregulation/importexports/importing/ucm248706.htm>

- **Produce:**

<https://www.fda.gov/downloads/Food/GuidanceRegulation/FSMA/UCM472887.pdf>

- **Import:**

<https://www.fda.gov/Food/NewsEvents/ConstituentUpdates/ucm553432.htm>