IUNS 21st ICN
International Congress of Nutrition
“From Sciences to Nutrition Security”

Buenos Aires, Argentina, 15-20 October 2017
Sheraton Buenos Aires Hotel & Convention Center
Conflict of Interest Disclosure

I’m appearing in this event in my capacity as President of ALACCTA and Fellow of the International Academy of Food Science and Technology

I run a consulting firm on food safety that provides services to the food industry, government agencies, universities and food research centers in several Latin American countries
The Contribution of Food Science and Technology to the Safety of Processed Foods

By

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President of ALACCTA, Latin American and the Caribbean Association of Food Science and Technology

Fellow of the International Academy of Food Science and Technology
• Founded in 1972
• 11 Association Members
• 10 Countries from Latin America and the Caribbean
• XIX LAC Seminar on Food Science and Technology
• XX Seminar will be in Panama City, March 2018
Agenda

1. Basic concepts of food safety
2. The world of food regulations
3. Sensationalism and speculation
1

Food safety
Food safety

- Assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.

Codex Alimentarius
Food safety

• To guarantee the absence of hazards that can put consumer’s health at risk
  – Pathogen microorganisms
  – Chemical substances
  – Foreign matter
Food safety hazards

Abuse of additives
- Ochratoxins
- Salmonella
- Antibiotics in milk
- S aureus
- Metallic fragments
- Decomposition
- Norovirus
- Naturally occurring hazards
- Heavy metals
- Adulteration
- E coli O157:H7
- Aflatoxins
- Pesticide residues
- Clostridium botulinum
- Mercury in fish
- Drug residues
- Filth
- Authenticity
- Bioterrorism
- Slime
- Radiological agents
- Bad smell
- Parasites
- Listeria monocytogenes
- Vibrio cholerae
- Drug residues
- Allergens
- Glass fragments
- Forbidden substances
- Natural toxins
Some of the most important food safety crisis over the last 25 years
1993

- *E. coli* O157:H7 in hamburgers, USA
- 4 deaths
- 630+ affected

President Clinton’s food safety initiative
2008

• Melamine in infant formula, China
• 300,000 kids affected
• 6 deaths

China exports seriously affected
2009

- *Salmonella* in peanut products, USA
- 900+ affected
- 9 deaths

**FDA FOOD SAFETY MODERNIZATION ACT**
2011

- *E coli* O104:H4 in sprouts, Germany
- 3800+ affected
- 44 deaths

Millions in loses from Spanish cucumbers
2013

- Horse meat scandal in Europe

Lost of trust
2011 – 2017

• Dramatic increase of *Listeria* and *E coli* outbreaks and recalls around the world
Some key food safety drivers

**CLIMATE CHANGE**

**GLOBAL TRADE**

**CHANGES IN DIET**

**SCIENCE AND TECHNOLOGY**

**SOCIAL MEDIA**
At international food trade level

- Food safety is of great importance
- And has been linked to fraud prevention and food defense
The food protection risk matrix

Adapted from SPINK & MOYER (2011) Defining the Public Health Treato fo Food Fraud. J. Food Sci Vol 76 Nr. 9. 2011

MOTIVATION: Economical gain

HARM: Public Health, Economic, Terror

FOOD QUALITY

FOOD FRAUD

FOOD SAFETY

FOOD DEFENSE

UNINTENTIONAL

INTENTIONAL
In Latin America

FOOD SAFETY

NUTRITIONAL HEALTH
2

World of food regulations
World of food regulations

- Composition
- Nutritional claims
- Sweeteners
- Country of origin labeling
- Natural occurring hazards
- Foods for Special Medical Purposes
- MRL of contaminants
- Dietary supplements
- GRAS Status
- Nutritional labelling
- Microbiological criteria
- Foreign matter
- GRAS Status
- Infants formula
- MRL of residues
- Standards of identity
- Defect action levels
- Health claims
- Food colors
- Consumer information
- Novel food processing technologies
- GMP
- GMO
- Labelling
- Authenticity
- Food contact materials
- Preservatives
- Preservatives
Basic principles of the regulatory process

Science based  Risk-based  Prevention  Transparency and Collaboration  Precautionary approach
The Codex Standards Process

Getting started
- Initial proposal
- Discussion paper
- Project proposal

Critical review
- Criteria & priorities
- Step 1: Consultation with Governments and interested parties (Steps 3 & 6) and Committee debate (Steps 4 & 7)
- Step 5: Approval & Adoption
- Endorsement*

Elaboration
- Revised or abandoned
- Final standard, guideline, etc

Committee level
- Executive Committee
- Committees and Task Forces
- Commission

*By general Committees

FDA’s safety evaluation of food contact substances

NOTIFICATION

Aspects of every chemical to which the consumers may be exposed
• Toxicological, Chemical, Environmental
  • SAR, QSAR

SCIENTIFIC EVALUATION

• Short term genotoxicity tests
• In vivo chromosome aberration study
• Sub-chronic toxicity studies

MORE SPECIALIZED TOXICOLOGICAL TESTING

• Neurotoxicity, Immunotoxicity
• Teratogenicity, Reproductive toxicity

DECISION
World of food regulations

A VAST WORLD OF REGULATIONS AND GUIDELINES COVERING EVERY ASPECT OF FOOD SAFETY

FOLLOWING BASIC/ETHIC PRINCIPLES

STRONG, SERIOUS INTERNATIONAL REGULATORY AUTHORITIES AND EXPERTS

SOUND SCIENCE UNDER STRICT PROCEDURES AND SCRUTINY
3

Sensationalism and speculation
World of food regulations

Confidence has been lately undermined by misconceptions, sensationalism and speculations.

Is not perfect, and yet is quite strong.
Pesticide MRLs are initially established as Good Agricultural Practices indicators

Then they are evaluated for safety by CCPR
Pesticide MRLs

The safety margin is so high, that MRLs are far away of being food safety limits.

One should require to eat like 60 kg a day of a produce containing the pesticide during several years to be in risk of reaching hazardous levels in the organism.
### Use of the Term "Natural" in the Labeling of Human Food Products

#### Docket Folder Summary
- **Docket ID:** FDA-2014-N-1207  
- **Agency:** Food and Drug Administration (FDA)  
- **Parent Agency:** Department of Health and Human Services (HHS)

#### Primary Documents
- **Use of the Term "Natural" in the Labeling of Human Food Products; Request for Information and...**  
  - **Proposed Rule**  
  - **Posted:** 12/28/2015  
  - **ID:** FDA-2014-N-1207-1827  
  - **Comment Period Closed:** May 10, 2016 11:59 PM ET

- **Use of the Term "Natural" in the Labeling of Human Food Products; Request for Information and...**  
  - **Proposed Rule**  
  - **Posted:** 11/12/2015  
  - **ID:** FDA-2014-N-1207-0001  
  - **Comment Period Closed:** Feb 10, 2016 11:59 PM ET

- **Request for Extension from International Dairy Foods Association (IDFA)**  
  - **Other**  
  - **Posted:** 01/06/2016  
  - **ID:** FDA-2014-N-1207-2388  
  - **Comment Period Closed**

- **Request for Extension from Institute of Food Technologists (IFT)**  
  - **Other**  
  - **Posted:** 12/31/2015  
  - **ID:** FDA-2014-N-1207-2060  
  - **Comment Period Closed**
Food regulations and the Regulatory process

• Are not perfect
  – Resources
  – Criteria
  – Competences of regulators
  – Pressure of groups of interests

• It is our obligation to make them better and more trustable
Based on Codex Alimentarius, the international reference in food safety and trade worldwide
"The good thing about science is that it’s true whether or not you believe in it."
ALACCTA’s Montevideo Declaration
On misconceptions about processed foods

XIX Latin American and the Caribbean Seminar on Food Science and Technology
Montevideo, Uruguay, August 8th, 2016

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Thank you for your attention

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