



United States Department of Agriculture  
Foreign Agricultural Service



# Food Additives: Current Trends and the effect on International Trade

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USDA Foreign Agriculture Service

Processed Products and Technical Regulations

# About the U.S. Department of Agriculture (USDA)



- USDA provides leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on public policy, the best available science, and effective management.
- About USDA
  - The USDA is made up of 29 agencies and offices with nearly 100,000 employees who serve the American people at more than 4,500 locations across the country and abroad.

# About the Foreign Agricultural Service

- **FAS Mission**
  - **Linking U.S. Agriculture to the World to Enhance Export Opportunities and Global Food Security**
- Global network of 93 offices covering 171 countries
- Programs and Services
  - Marketing and Export Assistance
  - Food Security and Data Analysis
  - Trade Policy



# Processed Products and Technical Regulations Division

- \* Trade Policy: Science and evidence based regulations.
- \* Represents the Agency in International Standards Organizations, ie. CODEX, SPS, TBT, APEC, etc....
- \* Provides Interagency Guidance and Coordination of SPS and TBT issues.



# What is a food additive?

- Food additive - any substance added to food.
- Additives have been used for thousands of years.
- Many staple foods we eat everyday contain food additives.
  - Bread
  - Yogurt
  - Soups
  - Sauces & Dressings
  - Wine, Beer,
  - Cereal, etc....



# Importance of Food Processing

- Why Process Food?

Additives perform a variety of useful functions in foods that consumers often take for granted:

- Preservation – extend edible time frame; food safety
- Improve taste, texture, and appearance with different varieties
- Maintain or Improve Safety and Freshness
- Improve or Maintain Nutritional Value
- Convenience; On the go.
- Decreases cost of food, reduce food waste (30%-40% of entire food supply, almost \$200B annually), and conserve resources
- Economy and Jobs

# Importance of Processed Food Trade with India and Philippines

- Processed food accounts for \$39.2B worth of U.S. trade in CY 2017 which is nearly 30% of ag trade.
- In 2017, the U.S. exported:
  - Nearly \$122M worth of processed foods to India
  - Nearly \$1.1B worth of processed foods to Philippines.

Area/Partners of Destination And Commodities Exported				January - December Cumulative To Date Values in Thousands of dollars				
Partner		Product	2013 Value	2014 Value	2015 Value	2016 Value	Jan - Apr 2017 Value	
<input type="checkbox"/>	1 Philippines	1 + Processed Food Total (ag only)	1,197,092	1,209,111	989,127	1,098,433	412,903	
<input type="checkbox"/>	2 India	1 + Processed Food Total (ag only)	126,356	98,453	115,601	121,984	44,078	
Grand Total			1,323,447	1,307,563	1,104,728	1,220,417	456,981	

# Importance of Processed Food Trade with the United States

- In 2017:
  - India exported nearly \$1.4B worth of processed foods to the United States
  - Philippines exported nearly \$1.1B worth of processed foods to the United States.

Area/Partners of Origin

And General Commodities Imported

				2017
Partner		Product		Value
<input type="checkbox"/>	1	India	1 +	Processed Food Total (ag only) 1,377,347
		Grand Total		1,377,347

Area/Partners of Origin

And General Commodities Imported

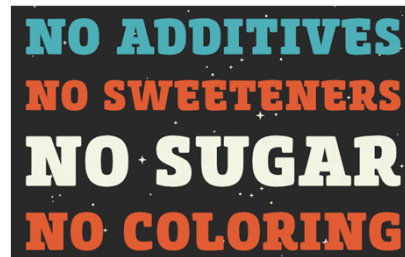
				2013	2014	2015	2016	2017
Partner		Product		Value	Value	Value	Value	Value
<input type="checkbox"/>	1	Philippines	1 +	Processed Food Total (ag only) 903,321	1,050,544	1,062,512	1,009,409	1,082,858
		Grand Total		903,321	1,050,544	1,062,512	1,009,409	1,082,858

## Processed Food trends

- Due to increased demand and consumption of processed foods, consumers more than ever want to know what's in their food
- The consumption of processed foods increases as incomes increase
- Technology makes information more readily available
  - Not all information is factual or based on sound science

# Processed Food trends

- Fundamental consumer misunderstanding of food additives role in processed foods:
  - Unaware of safety evaluations
  - Unaware of benefits
  - Intimidated with chemical names
- Consumers have demanded an “all-natural” or minimal ingredients products



# Companies reformulate on new consumer preferences

SET EDITION: U.S. | INTERNATIONAL | MÉXICO | ARABIC  
TV: CNN | CNNi | CNN en Español | HLN

**CNN Health**

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## Subway to remove 'dough conditioner' chemical from bread

By Elizabeth Landau, CNN  
updated 10:37 AM EST, Mon February 17, 2014

## Chick-Fil-A Removing Artificial Dye, High Fructose Corn Syrup

AP | By CANDICE CHOI

**Bloomberg** News | Quick | Markets | Personal Finance | Tech | U.S.

## Coca-Cola, Pepsi to Remove Controversial Drink Ingredient

SET EDITION: U.S. | INTERNATIONAL | MÉXICO | ARABIC  
TV: CNN | CNNi | CNN en Español | HLN

**CNN Health**

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## Kraft removing artificial dyes from some mac and cheese

By Jacquie Wilson, CNN  
updated 9:02 AM EST, Mon November 4, 2013



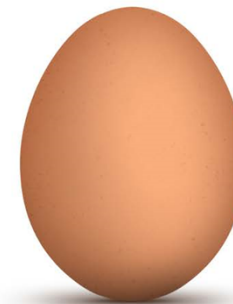
# If fresh foods had labels...

## AN ALL-NATURAL STRAWBERRY



**INGREDIENTS:** AQUA (90.9%), **SUGARS (4.9%)** (FRUCTOSE (50%), GLUCOSE (41%), SUCROSE (9%)), FIBRE E460 (2.0%), ASH, **FATTY ACIDS (<1%)** (OMEGA-6 FATTY ACID: OCTADECADIENOIC ACID (42%), OMEGA-3 FATTY ACID: OCTADECATRIENOIC ACID (31%), OCTADECANOIC ACID (20%), HEXADECANOIC ACID (6%), OCTADECANOIC ACID (1%), HEXADECANOIC ACID (<1%)), **AMINO ACIDS (<1%)** (ASPARTIC ACID (26%), GLUTAMIC ACID (17%), LEUCINE (6%), ALANINE (6%), LYSINE (5%), GLYCINE (5%), ARGININE (5%), PROLINE (4%), SERINE (4%), TYROSINE (4%), THREONINE (4%), ISOLEUCINE (3%), PHENYLALANINE (3%), VALINE (3%), HISTIDINE (2%), TRYPTOPHAN (1%), CYSTINE (1%), METHIONINE (<1%)), **PRESERVATIVES** (E236, E296) **COLOURS** (E160a, E161b, E161c, E140, E161d, E161e, E161g, E161h) E300, E307, FOLATE, CHOLINE, BETAINE, PHYTOSTEROLS, **FLAVOURS** (2,5-DIMETHYL-4-HYDROXY-2H-FURAN-3-ONE, 2,5-DIMETHYL-4-METHOXY-2H-FURAN-3-ONE, GAMMA DECALACTONE, GAMMA-DODECALACTONE, 2-FURFURAL, 5-HYDROXY METHYL-FURFURAL, LIMONENE, LINALOOL, (E)-NEROLIDOL, E1510, HEXANOL, OCTANOL, METHYL BUTANOATE, ETHYL BUTANOATE, METHYL HEXANOATE, ETHYL HEXANOATE, HEXYL ETHANOATE, (E)-2-HEXEN-1-YL ETHANOATE, BUTYL ETHANOATE, METHYL OCTANOATE, ETHYL OCTANOATE, OCTYL-2-METHYL BUTANOATE, OCTYL HEXANOATE, DECYL BUTANOATE, DECYL ETHANOATE, METHANETHIOL, ETHYL 3-METHYLBUTANOATE, GERANIOL, E210, FARNESYL ACETATE, MESIFURANE, METHYL ANTHRANILATE, GAMMA-DECALACTONE, METHIONAL, DIMETHOXYMETHANE, 1-BUTOXY-1-ETHOXYETHANE, 2-(4-HYDROXYPHENYL)-ETHYL BETA-D-GLUCOPYRANOSIDE.

## INGREDIENTS OF AN ALL-NATURAL EGG



**INGREDIENTS:** AQUA (75.8%), **AMINO ACIDS (12.6%)** (GLUTAMIC ACID (14%), ASPARTIC ACID (11%), VALINE (9%), ARGININE (8%), LEUCINE (8%), LYSINE (7%), SERINE (7%), PHENYLALANINE (6%), ALANINE (5%), ISOLEUCINE (5%), PROLINE (4%), TYROSINE (3%), THREONINE (3%), GLYCINE (3%), HISTIDINE (2%), METHIONINE (3%), CYSTINE (2%), TRYPTOPHAN (1%)); **FATTY ACIDS (9.9%)** (OCTADECENOIC ACID (45%), HEXADECANOIC ACID (32%), OCTADECANOIC ACID (12%), EICOSATETRAENOIC ACID (3%), EICOSANOIC ACID (2%), DOCOSANOIC ACID (1%), TETRACOSANOIC ACID (1%), OCTANOIC ACID (<1%), DECANOIC ACID (<1%), DODECANOIC ACID (<1%), TETRADECANOIC ACID (<1%), PENTADECANOIC ACID (<1%), HEPTADECANOIC ACID (<1%), TETRADECENOIC ACID (<1%), HEXADECENOIC ACID (<1%), EICOSENOIC ACID (<1%), DOCOSENOIC ACID (<1%), OMEGA-6 FATTY ACID: OCTADECADIENOIC ACID (12%), OMEGA-3 FATTY ACID: OCTADECATRIENOIC ACID (<1%), EICOSAPENTAENOIC ACID (EPA) (<1%), OMEGA-3 FATTY ACID: DOCOSAHEXAENOIC ACID (DHA) (<1%)); **SUGARS (0.8%)** (GLUCOSE (30%), SUCROSE (15%), FRUCTOSE (15%), LACTOSE (15%), MALTOSE (15%), GALACTOSE (15%)); **COLOUR** (E160c, E160a), E306, E101; **FLAVOURS** (PHENYLACETALDEHYDE, DODECA-2-ENAL, HEPTA-2-ENAL, HEXADECANAL, OCTADECANAL, PENTAN-2-ONE, BUTAN-2-ONE, ACETALDEHYDE, FORMALDEHYDE, ACETONE); SHELL (E170), ALSO CONTAINS BENZENE & BENZENE DERIVATIVES, ESTERS, FURANS, SULFUR-CONTAINING COMPOUNDS AND TERPENES.



# If fresh foods had labels...

**AN ALL-NATURAL LEMON**



**INGREDIENTS:** WATER (87.4%), FIBRE E460 (4.7%), **SUGARS** (2.5%) (GLUCOSE (40%), FRUCTOSE (36%), SUCROSE (24%)); **AMINO ACIDS (1.2%)** (GLUTAMIC ACID (19%), ASPARTIC ACID (16%), HISTIDINE (11%), LEUCINE (7%), LYSINE (5%), PHENYLALANINE (4%), ARGININE (4%), VALINE (4%), ALANINE (4%), SERINE (4%), GLYCINE (3%), THREONINE (3%), ISOLEUCINE (3%), PROLINE (3%), TRYPTOPHAN (1%), CYSTINE (1%), TYROSINE (1%), METHIONINE (1%)); ASH (0.4%), **FATTY ACIDS (0.3%)** (OMEGA-6 FATTY ACID: LINOLEIC ACID (46.3%), PALMITIC ACID (24.9%), OMEGA-3 FATTY ACID: LINOLENIC ACID (19.1%), OLEIC ACID (7.4%), STEARIC ACID (1.5%), MYRISTIC ACID (0.4%), PALMITOLEIC ACID (0.4%)); PHYTOSTEROLS, E515, E300, PHYLLQUINONE, PERILLYL ALCOHOL, THIAMIN, NIACIN, **COLOURS** (HESPERIDIN (70%), ERIOCITRIN (20%), RUTIN (10%)); **FLAVOURS** (LIMONENE (65.9%), BETA-PINENE (13.8%), GAMMA-TERPINENE (9.4%), ALPHA-PINENE (2.0%), GERANIAL (1.5%), MYRCENE (1.5%), NERAL (0.9%), SABINENE (0.5%), BETA-BISABOLENE (0.5%), ALPHA-THUJENE (0.4%), MERYL ACETATE (0.4%), GERANYL ACETATE (0.4%), TERPINOLENE (0.4%), TRANS-ALPHA-BERGAMOTENE (0.3%), BETA CAROPHYLLENE (0.2%), ALPHA-TERPINENE (0.2%), ALPHA-TERPINOL (0.2%), ALPHA-PHELLABDRENE (0.1%), (E)-BETA OCIMENE (0.1%), NONANAL (0.1%), LINALOOL (0.1%), CITRONELLAL (0.1%).

**AN ALL-NATURAL ROASTED COFFEE BEAN**



**INGREDIENTS:** CAFFEINE, **CHLOROGENIC ACIDS** (5-CAFFEOYLQUINIC ACID, 3,4-DICAFFEOYLQUINIC ACID, 3-CAFFEO-4-FERULOYLQUINIC ACID, 5-P-COUMAROYLQUINIC ACID), CAFESTOL, KAHWEOL, AMINO ACIDS, **SOLUBLE DIETARY FIBRE** (GALACTOMANNANS AND TYPE II ARABINOGALACTANS), GALACTOSE, ARABINOSE, FURANS, PYRIDINES, PYRAZINES, PYRROLS, ALDEHYDES, MELANOIDINS, **FATTY ACIDS** (LINOLEIC ACID, OLEIC ACID, LINOLENIC ACID, COFFEADIOL, ARABIOL I), ASH, **STEROLS** (4-DESMETHYLSTEROLS, 4-METHYLSTEROLS, 4,4-DIMETHYL-STEROLS, ALPHA, BETA-AND GAMMA-TOCOPHEROLS), **FLAVOURS** (2,3-BUTANE-DIONE, 2,3-PENTANEDIONE, 1-OCTEN-3-ONE, 2-HYDROXY-3-METHYL-2-CYCLO-PENTENE-1-ONE PROPANAL, 2-METHYL-PROPANAL, 3-METHYL-PROPANAL, 2-METHYLBUTANAL, 4-METHYLBUTANAL, HEXANAL, (E)-2-NONENAL, METHIONAL, METHANETHIOL, 4-METHYL-2-BUTENO-1-THIOL, 2-METHYL-4-FURANTHIOL, 5-DIMETHYL-TRISULFIDE, 2-FURFURYLTHIOL, 2-FURAN-METHANTHIOL, 2-(METHYL-THIOL)-PROPANAL, 2-(METHYLTHIO-METHYL)FURAN, 3,5-DI-HYDRO-4(2H)-THIOPHENONE, 2-ACETYL-2-TYAZOLINE, 4-METHYLBUTANOIC ACID, DAMASCENE 4-HYDROXY-2,5-DIMETHYL-4(2H)-FURANONE (FURANEOL), 2-ETHYL-FURANEOL, 4-HYDROXY-4,5-DIMETHYL-2(5H)-FURANONE (SOTOLON), 5-ETHYL-4-HYDROXY-4-METHYL-2(5H)-FURAN-ONE (ABEXONA), 2-ETHYL-4-HYDROXY-5-METHYL-4(5H)-FURANONE, 2-METHOXY-PHENOL, 4-METHOXY-PHENOL, 4-ETHYL-2-METH-OXY-PHENOL, 4-VINYL-2-METHOXY-PHENOL, 4-ETHENYL-2-METHOXYPHENOL, 3-METHYL-INDOLE, VANILLINE, 2,3-DIMETHYL-PYRAZINE, 2,5-DIMETHYLPYRAZINE, 2-ETHYL-PYRAZINE, 2-ETHYL-6-METHYLPYRAZINE, 2,3-DIETHYL-5-METHYLPYRAZINE, 2-ETHYL-3,5-DIMETHYLPYRAZINE, 3-ETHYL-2,5-DIMETHYLPYRAZINE, 3-ISOPROPYL-2-METH-OXYPYRAZINE, 3-ISOBUTYL-2-METHOXY-PYRAZINE, 2-ETHENYL-3,5-DIMETHYL-PYRAZINE 2-ETHENYL-3-ETHYL-5-METHYL-PYRAZINE, 6,7-DIHYDRO-5H-CYCLOPENTA-PYRAZINE, 6,7-DI-HYDRO-5-METHYL-5H-CYCLOPENTAPYRAZINE, 3-MER-CAPTO-3-METHYLBUTYL FORMATE, 3-MERCAPTO-3-METHYLBUTANOL), **MINERALS** (POTASSIUM, PHOSPHORUS, SODIUM, MAGNESIUM, CALCIUM, SULFUR, ZINC, STRONTIUM, SILICON, MANGANESE, IRON, COPPER, BARIUM, BORON, ALUMINIUM).



## Information evolves into trade concerns

- Documented examples:
  - Hong Kong – Bromated Vegetable oil Ban
  - EU – Artificial sweeteners ban
  - France – Bisphenol A Ban

# FDA GRAS Additive - Bromated Vegetable Oil scrutinized by food blogs

change.org



Petitioned Gatorade ▾

Don't put flame retardant chemicals  
in sports drinks!





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GAIN Report

Global Agricultural Information Network

THIS REPORT CONTAINS ASSESSMENTS OF COMMODITY AND TRADE ISSUES MADE BY USDA STAFF AND NOT NECESSARILY STATEMENTS OF OFFICIAL U.S. GOVERNMENT POLICY

Voluntary  Public

Date: 6/13/2014

GAIN Report Number: HK1421

## Hong Kong

Post: Hong Kong

### Prohibiting the Use of Brominated Vegetable Oil

- In 2017, non-alcoholic beverages accounted for \$27M worth of U.S. trade to Hong Kong down from its high of \$44M in 2016.





# Sweetener Additives – Built-in negative perceptions



Realfoodforager.com

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POLICY

Voluntary  Public

Date: 2/5/2018

GAIN Report Number: E18014

## EU-28

**Post:** Brussels USEU

### **EU Bans Use of Artificial Sweeteners in Dietetic Bakery Products**

**Report Highlights:**

As a result of the EU's new rules on dietetic foods, applicable since July 2016, a whole range of products carrying dietetic suitability statements needed to be re-labeled and/or reformulated. In addition, [Commission Regulation 2018/97](#), published on January 23, 2018, bans the use of artificial sweeteners in fine bakery products aimed at people with special dietary needs. It becomes applicable on February 13, 2018 but products already on the market can be sold until stocks are exhausted.

**- In 2017,  
sweeteners  
accounted  
for \$37.5M  
worth of  
U.S. trade  
to EU**

# France ignores EFSA's Opinion

EFSA's comprehensive re-evaluation of bisphenol A released Jan 21, 2015 finds exposure to BPA from the diet or a combination of sources is considerably under the safe level and therefore poses no health risk to consumers.





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POLICY

Voluntary  Public

**Date:** 12/4/2012

**GAIN Report Number:** FR9125

## **France**

**Post:** Paris

### **French National Assembly Supports BPA Ban Bill- Hastens Implementation**

- In 2017, the U.S. shipped \$306M worth of processed and canned foods to France that utilize BPA in packaging.



## Outreach: Communicating and Educating Trade Partners

- FAS : create bridges and partnerships
  - Comment on WTO notifications and emphasize utilizing independent bodies Such as Codex Alimentarius and JECFA to set standards
  - Technical exchanges with Trade partners
  - Promote the use of science based standards and utilize capacity building



# FAS Capacity Building Activities



Workshop attendees at the Real InterContinental Hotel San Salvador



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POLICY

Voluntary - Public

**Date:** 10/31/2014

**GAIN Report Number:**

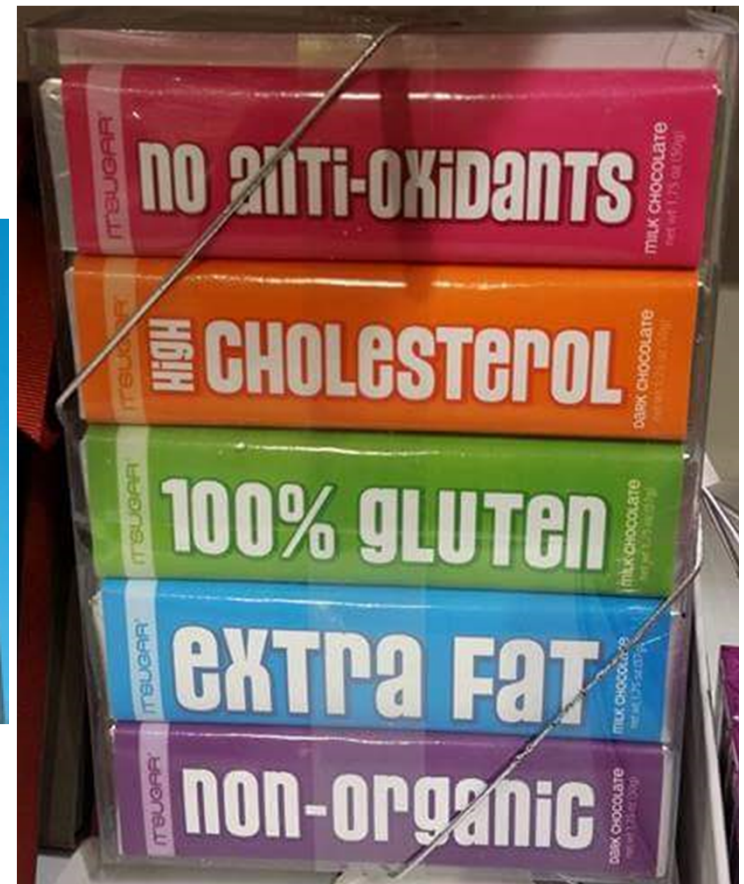
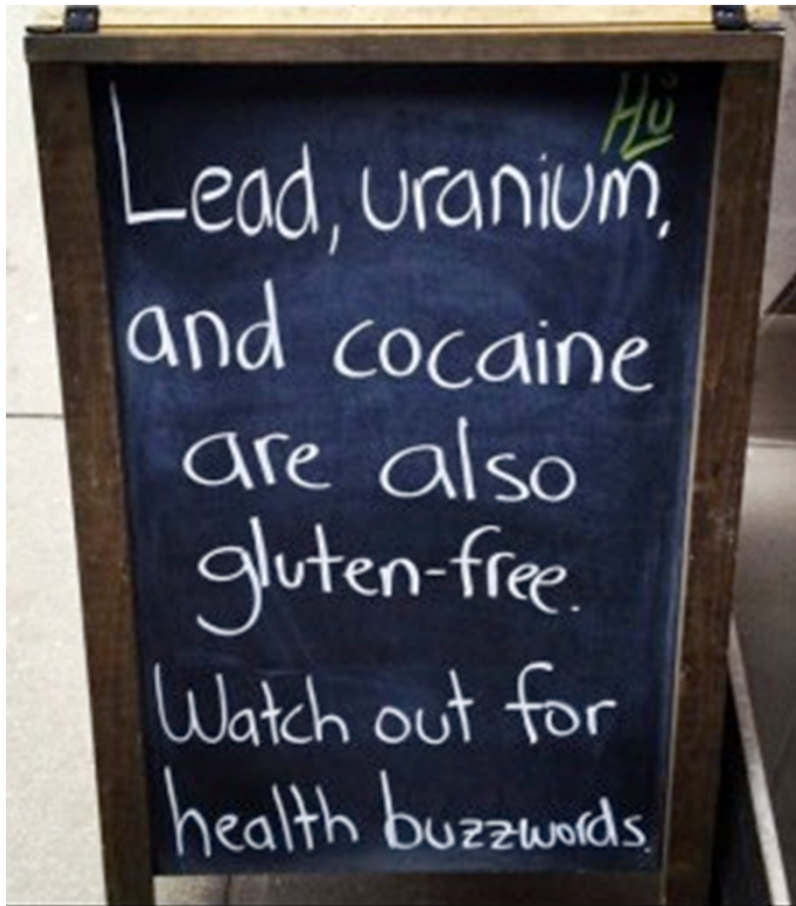
**Peru**

**Post:** Lima

**FAS Lima and FDA Coordinate Food Additives Training for  
DIGESA**



# Thank You







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