

# Food fraud and its challenges in food supplements



We need more awareness in an increasing e-commerce world!

Zulema Sullca Porta  
Food and Veterinary Authority  
24. september 2019

- Video from FDA

- <https://www.fda.gov/drugs/medication-health-fraud/tainted-weight-loss-products>

# • Beware of Fraudulent Supplements!

- FDA has worked with industry to recall numerous products with potentially harmful ingredients.



- contains sibutramine!

- contains sildenafil, the active ingredient in Viagra!



<https://www.fda.gov/drugs/buying-using-medicine-safely/medication-health-fraud>

- Challenges of food fraud in FS
  - These products are masquerading as food supplements
  - They may look like food supplements, but they are not legal food supplements, neither are legal drugs/medicine.
  - The Food supplement supply chain.
  - Direct-to consumer marketing
    - The popularity of Internet use for health/medical information opens the door for all kind of food supplement advertising.

- Fraud – illegal – dangerous to health – Crime!
- Increasing consumption of food supplements - increasing consequences.
- Fraud conducted for economic gain using food supplements.
- **Adverse health effects** resulting from food supplement fraud.
  - Using hidden ingredients , active ingredients like approved drugs or their analogs (closely-related drugs) or other compounds, such as novel synthetic steroids, that do not qualify as ingredients in FS.

- Therefore it is important...
  - To know what food supplements are
  - What they should contain and should not contain
    - Knowing the legal environment around FS
  - It is important to have a definition of Food supplement fraud.
  - Also very important to define the public health threat.
  - Define prevention focus, detection methods or countermeasures.

- **Defining FS** - What are food supplements?
  - Special category of food
  - FS are concentrated source of substances with nutritional or physiological effect intended to supplement the normal diet.
  - FS are sold in dose form.
  - FS include a spectrum of dietary ingredients such as herbs, botanicals, vitamins, minerals and enzymes or extracts from organs or glands.

# • Regulations around food supplements

- General food law – Icelandic Food law
- In Iceland, the Food Supplement Regulation (nr. 624/2004) permit the sale of food supplements provided they comply with certain conditions laid down in that regulation (EC Directive 2002/46 on FS).
- For example:
  - product must be pre-packed and labelled '*food supplement*'. (Ath. In USA '*dietary supplement*')
  - If they contain vitamins and minerals these must be approved and listed in Directive 2002/46.



- Food supplements on the market



- Compliance with regulations:
  - The labelling must also comply with general food labelling law, e.g. Regulation 1169/2011 on the provision of information to consumers (Icelandic nr. 1294/2014)
  - And in addition must be labelled with:
    - The portion of the product recommended for daily consumption.
    - A warning not to exceed the stated recommended daily dose.
    - A statement to say food supplements should not be used as a substitute for a varied diet.
    - A statement to say the product should be stored out of the reach of young children.

- Compliance with regulations
  - Food law and Regulation 1924/2006, also prohibits any claim that a food or food supplement can prevent, treat or cure any disease, and health claims must be approved by EFSA and the Commission to prevent spurious claims.
  - **This protects consumers and responsible businesses.**
  - In Iceland, the relevant regulation is Health claims regulation nr. 406/2010.

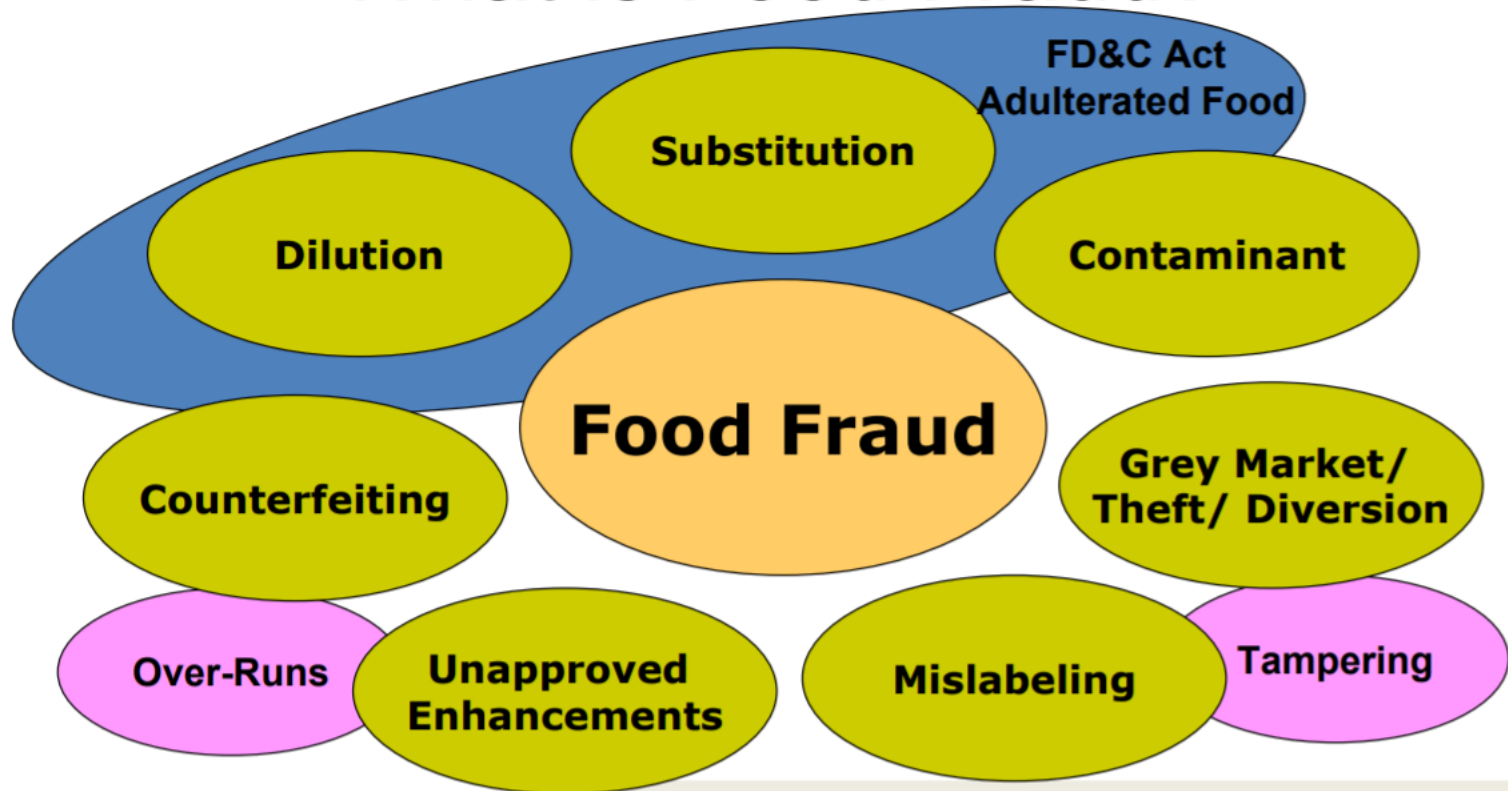
- **According to regulations:**
  - Food supplements should not contain
    - excess food additives
    - contaminants such as pathogens, heavy metal, pesticides residues and mycotoxins.
  - Food supplements should not contain:
    - Unauthorized novel food ingredients
    - Excess of vitamins
    - unauthorized nutritionally related compounds
      - For example: vanadium, betaine and metal amino acid chelates.
  - **Food supplements should not contain:**
    - pharmacological ingredients, according to national rules
    - illegal ingredients, psychoactive compound, etc.

- Therefore it is important
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- US definition of Food fraud

- Food fraud has been described by the U.S. Pharmacopeia Convention as the:
  - “deliberate substitution, addition, tampering or misrepresentation of food, food ingredients or food packaging, or false or misleading statements made about a product **for economic gain**”.
  - Fraud, as described, impacts not only consumer’s pockets, but may also involve the safety of the products.

# What is Food Fraud?



Source: Food Fraud Think Tank Presentation, GFSI, 10/2012

- Criteria used in the EU for food fraud

**WHAT CRITERIA DOES  
THE EU FOOD FRAUD NETWORK USE  
TO DETERMINE FRAUD?**





- Contamination in FS

- The typical motivation for food fraud is replacing a more expensive ingredient with a less expensive one, thereby increasing profits or competitiveness on the market.
- Food supplement contamination is an increasing global problem.
  - Contaminants that could cause serious health risks such as pathogens, heavy metal, pesticides residues, and mycotoxins are making their way into the final products.

- Deliberate or poor manufacturing of FS?
  - In 2006, researchers tested 25 samples of Nigerian herbal remedies manufactured and sold in Nigeria.
  - All samples contained elevated levels of heavy metals
    - Such levels were found to cause potentially harmful effects when taken as indicated.
  - Medical researchers in Australia acknowledged that lead poisoning due to Indian Ayurvedic supplements is a well-known health issue.

- Intentional substitution

- The fraudulent, intentional substitution or addition of a substance in a product for the purpose of increasing the apparent value of the product or reducing the cost of its production.
- Another form of fraud involves the use of active undeclared pharmaceutical
  - Top five in US were sildenafil and its analogues, sibutramine and derivatives, 1,3-dimethylamylamine (DMAA), yohimbine, and tadalafil.

- Example:

- An instant coffee drink purportedly containing “natural herbs” tongkat ali, guarana, and maca was reported to actually contain two pharmaceutical ingredients approved by the FDA for the treatment of male erectile dysfunction.
  - In this case, the motivation for fraud is “spiking” with the “intent to impart an effect that cannot be achieved by the dietary ingredients alone.”

- In USA - Instant coffee



# • In Iceland -Valentus SlimROAST Optimum Kaffi

- Beta-Phenylethylamin is on the WADA list!
- Product not on the market - Multilevel marketing, pyramyd method!



| Supplement Facts          |                | Amount per serving   | %Daily Value*  |
|---------------------------|----------------|--|----------------|
| 30 servings per container |                |  |                |
| Serving Size              |                | 1 scoop (3.5g)   |                |
| Amount per serving        |                |  |                |
| <b>Calories</b>           |                | <b>10</b>  |                |
|                           | % Daily Value* |  |                |
| Total Fat                 | 0g             |  | 0%             |
| Saturated Fat             | 0g             |  | 0%             |
| Trans Fat                 | 0g             |  | 0%             |
| Cholesterol               | 0mg            |  | 0%             |
| Sodium                    | 0mg            |  | 0%             |
|                           |                | <b>Protein &lt;1g</b>  | <b>&lt; 1%</b> |
|                           |                | <b>Weight Management Blend 2.4g</b>  | <b>†</b>       |
|                           |                | Dark Roast Coffee, 2-Aminoisoheptane <sup>‡</sup> ,<br>Beta Phenylethylamine, Acetyl-L-Carnitine,<br>Caffeine, Green Tea Catechins Extract (VASO6™)<br>L-Theanine, Alpha-Glycerolphosphoryl Choline,<br>Chromium Polynicotinate. |                |

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

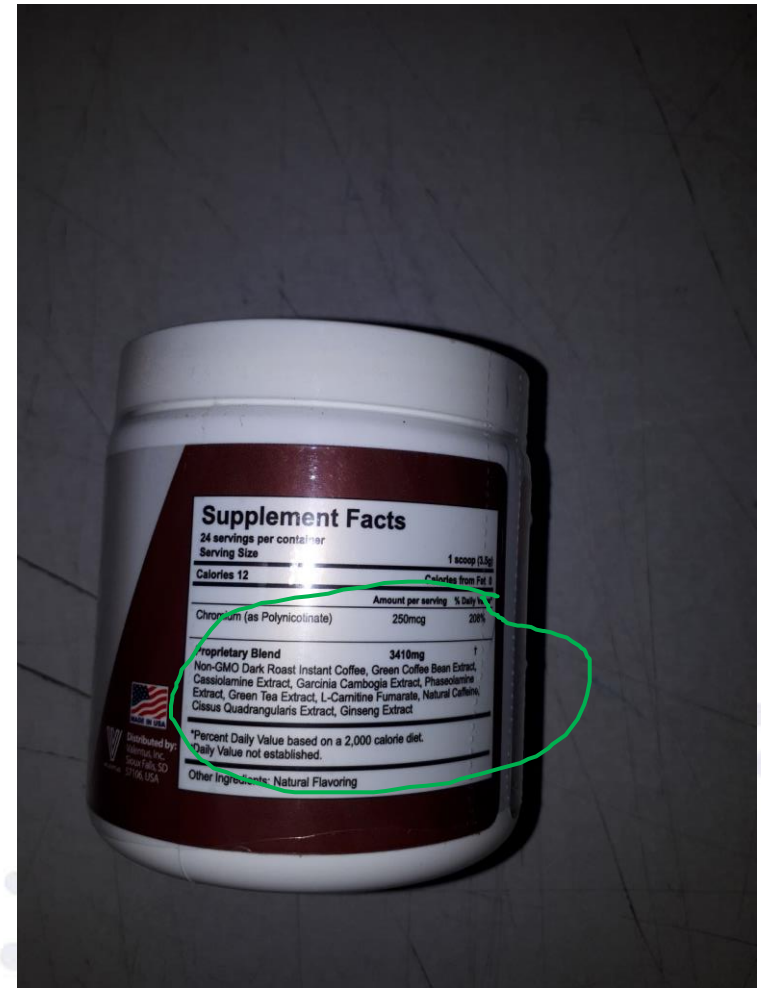
† Daily Value not established.

‡ Nature Identical synthesis of Juglans Regia Extract.

Other Ingredients: Erythritol

No artificial colors or flavors

- 2 weeks later, same coffe?



- What we need to do?
  - When safety issues are suspected, Control Authorities must investigate and, when warranted, take steps to have the product removed from the market.
  - Be aware that it is not possible to test all products on the market to identify those that contain potentially harmful or hidden ingredients.
  - The goal is not to develop new or better tests... the goal is to prevent public health threats.



- Prevention of public health threats
  - FOOD CRIME!
  - 2,4-Dinitrophenol or DNP
  - EU: General Food Law, Regulation (EC) 178/2002, Article 14
    - *“food shall not be placed on the market if it is unsafe”*
      - *“food shall be deemed to be unsafe if it is considered to be: injurious to health”*
  - DNP sold for human consumption is illegal!

- **FOOD CRIME! DNP**

- DNP is a yellow powder, usually put into capsules before being sold to the consumer as a fat loss aid
  - Sold mainly via websites, online forums and social media sites
  - Often taken by young people with eating disorders and body image concerns who want to lose weight
- Not illegal to buy/sell/own/import/export until it is marketed as a weight loss product

- The making of DNP supplement



# • Dealing with challenges in FS

- Just because you see a supplement product on a store shelf does NOT mean it is safe or effective.
  - The same applies for FS from the internet!
- When safety issues are suspected, Control Authorities must investigate and, when warranted, take steps to have the product removed from the market.
  - Also close down illegal websites.

- Be aware

- Be aware that it is not possible to test all products on the market to identify those that contain potentially harmful hidden ingredients.
- Monitoring all international food manufacturing is not practical.
- Identify sellers of illegal FS and work to stop this activity.
- Make sellers aware of the dangers and legal implications.

# • Joint work combating FS fraud

## • Work with partners

- Share intelligence with partners (via RASFF, AAC, embassies or direct contact)

## • Joint investigations send a strong message to criminals that their actions will not be tolerated

- For example “OPSON” and joint EU Food fraud network and Europol.

- Education and prevention
  - Teaching the consumer
    - The line between “food supplement” and “drug/medicine” can blur for uninformed consumers.
  - Consumers must be aware of dangerous products and learn how to identify and avoid them using the warning signs.
    - Make potential consumers aware of the dangers
  - As a purchaser or consumer, the same principles apply:
    - **“know your supplier” and “trust but verify.”**

# Takk fyrir!

[www.mast.is](http://www.mast.is)

