


Cheryl Deem
Executive Director

American Spice Trade Association
Update




ASTA Update

- Adulteration
 - Oregano
 - Lead
 - ASTA Guidance
- Ethylene Oxide
- ASTA Allergen Workshop



Oregano

- Professor Christopher Elliott of Queen's University Belfast – Food Fraud/Horsemeat scandal in UK
- Conducted worldwide study on adulteration in oregano
- Globally 25% of samples were adulterated
 - 1 - South Africa – 6/10 samples adulterated (60%)
 - 2 - Australia – 7/12 (58%)
 - **3 - Canada – 5/14 (36%)**
 - 8 - USA – 7/28 (25%)




2018 Webinar

- ASTA agreed to allow Prof. Elliott to present findings
- Announced will conduct further research to determine source of oregano adulteration
- Looking to conduct additional research into paprika, garlic, sage
- Developing hand held device to test for adulteration in field
- Pesticide screens




Prof. Christopher Elliott

PUBLICITY



Lead Recalls

- In the past 2 years there have been a number of recalls for turmeric for excessive lead levels
- Testing indicates lead chromate likely source
- Used to enhance color - adulteration



Lead - 422ppm

The image shows the front and back of a Nabelsi Thyme product. The front packaging features the brand name 'NABELSI' and 'THYME' in English and Arabic, along with 'Test the flavour' and 'Halal' certification. The back of the package displays a nutrition facts label with a lead level of 422 ppm. The label also includes a barcode, 'Net Wt. 2.5 Kg', and 'Made in Syria'.

FDA's Position in October 2016

- Research shows there is no safe exposure level
- Lead is commonly found in agricultural products because of air/soil contamination
- FDA is not looking for zero
- FDA will not issue guidance to spice industry
- Wants to see industry data on lead in turmeric to compare to their monitoring data – understand typical levels when good GAP/GMP used
- FDA will share their “thinking” on a level that will not likely prompt enforcement action

FDA's Position Today

- No concerns about data ASTA submitted
- Supports FDA belief that excessive levels were not consistent with good industry practices (EMA?)
- However, current political environment limits FDA options – interpretation that actions can be guidance
- Based on our conversation with FDA it is unlikely the Agency will take enforcement action if lead levels fall within levels provided by ASTA:
0.02ppm – 0.94ppm with most around 0.25ppm
- **Less than 1ppm**

New York State Food Laboratory

- Ongoing testing of spices, primarily for lead and dyes that are not permitted in foods
- Their testing resulted in recalls last summer of turmeric with elevated lead levels
- Informed ASTA that it will consider spices containing lead over 1ppm to be adulterated
- Example sent tested at 1.26 ppm
- Declared in violation

New York State Food Laboratory


- New York State Recall Book – revised October 2016
- Class I Recall: Lead levels in spices **above 25 ppm**
- Class II Recall: Lead contamination (specific to spices, levels **below 25 ppm but greater than 1 ppm**)

New Guidance Published 2016

The graphic features a variety of colorful spices (peppercorns, turmeric, etc.) and a white spoon filled with yellow turmeric powder. Below the image, the text reads 'IDENTIFICATION AND PREVENTION OF ADULTERATION' and 'Guidance from the American Spice Trade Association'.

Adulteration Guidance

- Adapted with permission from guidance published in 2016 in UK
- Prof. Elliott helped write original guidance
- Comprehensive look at
 - Regulations
 - Reasons behind adulteration
 - Understanding why it occurs can help deter
 - Supply chain vulnerabilities & controls



Decision Tree to Protect Spices against Supply Chain Vulnerabilities

Q1: Do you know what you are buying and have you requested specifications?
 YES → Q2
 NO → New ID

Q2: Are you buying from an approved/certified supplier?
 YES → Q3
 NO → New ID

Q3: Are you buying in whole form?
 YES → Q4
 NO → If covered, checked or checked - see ID

Q4: Do you have an understanding of the factors which may influence the market?
 YES → Q5
 NO → New ID

Q5: Is the price reflective of the material being purchased?
 YES → Q6
 NO → You should consider this when deciding whether or not to purchase the product


Q6: Are you aware and have assessed vulnerabilities in the supply chain?
 YES → Q7
 NO → Q1

Q7: Are appropriate controls in place to protect against vulnerabilities (preventative and/or verification and detection measures)?
 YES → Q8
 NO → New ID 1

Q8: Have you reviewed the material on receipt to ensure that it meets the agreed specifications?
 YES → Q9
 NO → New ID 2


Q9: Do you have procedures in place to deal with any material that does not meet the agreed specifications and/or is not legally compliant?
 YES → Q1
 NO → New ID 3
 YES → COMPLETED

NEW: Assessment of Supply Chain Vulnerabilities is an ongoing process which requires regular review.




Decision Tree to ID Supply Chain Vulnerabilities

- Do you know what you are buying and have you requested specifications?
- Are you buying from an approved/certified supplier?
- Are you buying in the whole form?
- Do you have an understanding of the factors which may influence the market?
- Is the price reflective of the material being purchased?




Decision Tree

- Are you aware and have assessed vulnerabilities in the supply chain?
- Are appropriate controls in place to protect against vulnerabilities (preventative and/or verification and detection measures?)
- Have you reviewed the material on receipt to ensure that it meets the agreed specifications?
- Do you have procedures in place to deal with any material that does not meet the agreed specifications and/or is not legally compliant?




Adulteration Guidance

- Harvest charts of major products and origins to aid in understanding availability and potential quality issues
- Examples of adulteration and recommended methods of detection
- Guidance is available on ASTA website at www.astaspice.org
- 2018 Pre-Conference Workshop



Ethylene Oxide

- April 24, 2017 letter from Pest Management Regulatory Agency in Canada
- Granting Amended Full Registration through December 31, 2022 for ethylene oxide for dried herbs and spices
- Recommended MRLs: ETO 7ppm, ECH 940 ppm
- MRLs to be published on Health Canada website
- ASTA provided data and assistance to registrant



2017 Pre-Conference Workshop Allergens

- Goal – present different viewpoints on the challenges facing industry and consumers with food allergies
- Next slides are from speakers' presentations



Allergens & Controls in the Supply Chain.

Parneet S Swani
CEO
Swani Spice Mills Pvt. Ltd



Peanuts - basic facts

- Peanut plants need **1.5 – 2 inches of water per week** during kernel development.
- Mainly from Rain Fed Sources . If not then irrigation is needed.
- **The Peanut is a very good Nitrogen Fixing plant which absorbs Nitrogen from the air and provide enrichment & nutrition to the plant & soil.**

• Peanut Board



Peanuts

- Gujarat and Rajasthan – accounts for more than 60% of Indian Peanut production
- 75% grown in the Monsoon Crop (July-October)
- 25% grown in the Summer crop (March – May)

Cumin Seeds are sown in Oct – Nov and harvested in Feb – March.



Gujarat & Rajasthan

- Gujarat and Rajasthan – grow 60% of India's production.
- North Gujarat & Rajasthan grows Peanuts in the monsoon crop and cash crops in the winter period.
- **Due to hotter temperatures in the summer, North Gujarat and Rajasthan don't grow peanuts in the summer seasons.**



Cumin Seeds

- Planted between October – Nov & Harvested Feb – March depending on the length of the winter.
- **A crop that requires less irrigation. 3 – 4 irrigations over 4 months.**
- Main states of planting are Gujarat & Rajasthan.





Cross Contamination

- Field Level contamination
 - Farmer - trail seeds, re-used bags – Medium Risk
- Market Level contamination
 - Terminal Markets – High Risk
 - Multi Commodity arrivals

POST MARKET CONTAMINATION

- Trader Level – High Risk
- Mid – Processor – High Risk
- Final Processor / Exporter
 - **MUST** Manage this risk & comply with FSMA

Brand Protection - A Preventive Framework for Allergen Management

Roger Lawrence
McCormick and Company

Supply Chain of Custody Control Principles

SOURCE MATERIAL – Best Practice

- Limited suppliers.
- Influence farmers in GAP's to the extent possible to prevent comingling and cross-contamination in the growing, harvesting, drying and storage.
- Source spices, herbs and capsicums only in the whole, unground form.
- This alone greatly minimizes the possibility of intentional and unintentional, incidental adulteration.

Supply Chain of Custody Control Principles

MANUFACTURING PROCESS – Best Practice

- Rigorous, and documented, incoming inspection.
- State-of-the-art cleaning.
- No allergen facilities.
- Allergen testing is superfluous and irrelevant.

Allergen Residues in Spices: Discovery, Detection and Risk Assessment

Steve Taylor, Ph.D.
Professor and Co-Director
Food Allergy Research & Resource Program
University of Nebraska

The Ongoing Cumin Situation

- In India, peanuts and cumin grown on same farms
- Opportunities for comingling on farms, in transportation, at the local markets, later
- Shared burlap bags were one focus for comingling
- *Some spice companies offered new burlap bags and levels of peanut in cumin dropped*
- Occasional positives now (<10 ppm) but most samples have no detectable peanut



Quantitative Risk Assessment Conclusions

- Trace levels of peanut (2.5 to 25 ppm) in **whole cumin that is used in finished products do not present a public health risk based on the clinical threshold information for peanut-allergic individuals**
- Regulatory authorities have NOT established regulatory thresholds/action levels for food allergens. Products may be subject to recall despite the low levels in both the cumin and finished product



Remaining Regulatory Challenges

- FDA has poor understanding of agricultural comingling and the realities of the food chain
- FDA does not recognize the existence of threshold doses and does not employ quantitative risk assessment but they do look at FARRP QRAs
- FDA would recall if consumer complaints occurred
- FDA defaults to blaming poor GMPs



Peanut in Garlic Powder

- Recurring levels of undeclared peanut found in Chinese garlic powder (10ppm up to >200 ppm)
- FARRP has conducted dozens of Quantitative Risk Assessments for various companies and presented to FDA
- FDA has indicated no need to file RFRs for “low levels” of undeclared peanut in garlic
- No root cause established
- Some Chinese garlic powder continues to test positive...not all lots, perhaps not all suppliers
- Have seen activity in EU, Australia



Understanding Food Allergies & Consumer Perceptions of Labelling

Jennifer Jobrack
Senior National Director of Advocacy
Food Allergy Research & Education



Labeling Study Results

- 6,684 respondents: 5,507 (82.4%) from the U.S and 1,177 (17.9%) from Canada
- Up to 40% of respondents purchase food with common precautionary allergen labeling (PAL)
- Severe allergic reaction history made respondents less likely to purchase foods containing PAL
- Canadians had higher odds of buying “may contain allergen” labeling
- The US had lower odds of buying products that utilized the “manufactured in a facility that also processes allergen” or “manufactured on shared equipment with products containing allergen”



Global Perceptions on Thresholds

- Less than 1/4 of participants in 11 of 16 countries reported that they would be willing to purchase foods containing their allergen if the amount would be incapable of causing an allergic reaction.
- When asked whether they would purchase foods containing their allergen if it were capable of only triggering a mild reaction, rates were lower across all countries (weighted average of 3%).
- 16% of respondents reported that they would be willing to purchase products with "May Contain Allergen"



Conclusions

- Consumers seem to trust PAL to estimate allergen reaction risk. This risk assessment seems to occur at different rates depending on country and the PAL statement used.
- Imperative that we educate consumers with food allergy on thresholds and PAL, develop effective policies for labeling, and change the way physicians advise their patients about avoidance.
- *All stakeholders, including consumers, physicians, and food industry, need to be engaged to build understanding and trust in labels based on validated allergen thresholds when they can be reliably ascertained.*



www.astaspice.org

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