• NSF operates independently
• NSF is committed to professional and independent certification and does not pursue advocacy work.
CONSUMER PERSPECTIVES ON FOOD STUDY

"Public Perspectives on Food Risks"
November 2018
2,537 U.S. adults
DO YOU THINK SCIENCE HAS HAD A MOSTLY POSITIVE OR MOSTLY NEGATIVE EFFECT ON THE QUALITY OF THE _______ IN THE U.S.?

<table>
<thead>
<tr>
<th></th>
<th>Mostly positive</th>
<th>Mostly negative</th>
<th>No answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Food</td>
<td>70</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>• Health care</td>
<td>90</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>• Environment</td>
<td>76</td>
<td>23</td>
<td>1</td>
</tr>
</tbody>
</table>

Same study from 2009, 2014 shows trends toward the positive

DO YOU CURRENTLY HAVE ANY KIND OF FOOD INTOLERANCE OR FOOD ALLERGY?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Selected</th>
<th>Not Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe allergic reaction</td>
<td>5</td>
<td>95</td>
</tr>
<tr>
<td>Mild or moderate allergic</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Intolerance to some foods</td>
<td>16</td>
<td>84</td>
</tr>
<tr>
<td>No, None of these</td>
<td>71</td>
<td>29</td>
</tr>
</tbody>
</table>

HOW MUCH OF THE FOOD YOU EAT IS ORGANIC?

• Most of it 7
• Some of it 32
• Not too much 43
• None at all 18
• No answer 1

% WHO SAY FOOD ADDITIVES EVERY DAY ARE ______ RISK

- Serious: 50%
- No Answer: 48%
- Not Serious: 2%

% WHO SAY GMOs ARE _____ FOR ONE’S HEALTH

- Better: 50%
- Neither Better or Worse: 44%
- Worse: 5%
- No Answer: 1%

CLEAN LABEL

INGREDIENTS: DATES, PEANUTS, SALT
5 Core Supply-Chain Concepts
5 CORE CONCEPTS

- Supply-chain transparency
- Segregation of high-risk inputs
- Traceability of ingredients
- Allergen control systems
- Third-party certifications
SUPPLY-CHAIN TRANSPARENCY
TRANSPARENCY (GMO): NON- & LOW-RISK INPUTS

Non-risk:
Ingredients with no DNA (such as minerals)

Low-risk:
Ingredients not commercially available as GM
TRANSPARENCY: HIGH-RISK GMO CROPS IN U.S.

Source: https://gmoanswers.com/infographic-what-gmo-0
Herbs are “Low Risk” but...

- Residual solvents (alcohols)
- Carriers, standardization materials (maltodextrins)
- Acidifiers (citric acid, ascorbic acid)
**TRANSPARENCY (GMO): SUB-INGREDIENTS**

Raspberry Filling includes the following ingredients:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raspberry</td>
<td>48-53%</td>
</tr>
<tr>
<td>Sugar</td>
<td>23-28%</td>
</tr>
<tr>
<td>Water</td>
<td>17-23%</td>
</tr>
<tr>
<td>Organic Tapioca Starch</td>
<td>2-7%</td>
</tr>
<tr>
<td>Citric Acid</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Natural Flavor</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Salt</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Fruit Juice for Color</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Guar Gum</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>
SEGREGATION OF HIGH-RISK INPUTS
SEGREGATION (GF): RAW INGREDIENT STORAGE & HANDLING

WHAT’S NEEDED

• Method for prevention of commingling or cross-contamination of gluten-containing ingredients and gluten-free ingredients

HOW IT’S Verified

• Review Allergen Management or Incoming Ingredient SOP to assess the procedures in place.
• On-site audit: Separate storage? Separate color coding?
SEGREGATION (GF): PRODUCT INTEGRITY

WHAT’S NEEDED
• Methods for prevention of commingling or cross-contamination of:
  - Raw ingredients
  - Finished products
  - Packaging materials
  - Storage containers

... from receiving, packaging, storage and final distribution.

HOW IT’S VERIFIED
• Audit
  - Cleaning/sanitizing SOPs
  - Residue testing of equipment SOPs to ensure lines are cleaned before running GF product.
  - Confirm a document from the packaging supplier is on file ensuring the absence of gluten.
  - Ensure if storage containers are re-used that they are cleaned and sanitized prior to use.
TRACEABILITY OF INGREDIENTS
TRACEABILITY (GMO):
SUPPLY-CHAIN

WHAT’S NEEDED
Demonstrate ability to trace materials from:
- receiving to
- sales
- via linked lot numbers

HOW IT’S VERIFIED
Provide complete original records:
- receiving
- production
- sales records for ingredients
- sales records for products
... for the period defined for reconciliation review.
TRACEABILITY (GMO): ANIMAL INGREDIENTS

Animal feed (corn, soy, alfalfa) must be tested as a raw crop to be below 5% GM content, per crop.
TRACEABILITY (GMO): HIGH-RISK INGREDIENTS

- Amino Acids (produced by GM organisms)
- Vitamin C/Ascorbic Acid (from corn)
- Vitamin E (from soy)
- B2, B12, beta-carotene (produced by GM organisms)
- Whey Protein (may come from cows fed GMOs)
- Honey
- Algae, spirulina, chlorella

- Citrate Minerals (citrate from corn)
- Citric Acid (from corn)
- Maltodextrin (from corn)
- Corn Starch
- Soybean Oil (softgel caps)
- Lecithin (from soy)
- Gelatin (animal sources)
TRACEABILITY (GMO): WHEN IS TESTING REQUIRED?

High-Risk Inputs that are “major ingredients” (>5% excluding water and salt) must be tested with intact DNA prior to use in a NGP Verified product.
ALLERGEN-CONTROL SYSTEMS
ALLERGEN CONTROL (GF): INGREDIENT & PRODUCT QUALITY

WHAT’S NEEDED

• Methods in place for ensuring incoming ingredients do not exceed the certifier’s requirement (of 5, 10, 15 or 20 ppm gluten)

HOW IT’S VERIFIED

• Each ingredient supplier, for each ingredient must have one of these:
  - COA with gluten test result on each incoming shipment.
  - Gluten test report for each lot.
  - In-house gluten test for each lot.
  - Allergen affidavits from supplier
  - GF Certificate
  - Gluten-Free Compliance Affidavit
ALLERGEN CONTROL (GF): GLUTEN-CONTAINING GRAINS

- Wheat (all species)
- Barley
- Rye
- All crossbred varieties including:
  - Pearl barley, Malted barley, Couscous, Farro, Triticale, Spelt, Durum, Einkorn, Semolina, Kamut, Bulgur, Farina
ALLERGEN CONTROL (GF): DOCUMENTS AND RECORDS

WHAT’S NEEDED

• Documents must accurately describe the gluten-free manufacturing practices in place at the facility.

• Documents must be kept on file for 5 years at the facility

HOW IT’S VERIFIED

• On-site auditor verified that the SOPs submitted are being accurately implemented at the facility and notes any discrepancies.
THIRD-PARTY CERTIFICATIONS
THIRD-PARTY: NON-GMO CERTIFICATIONS

Whole Foods approved programs
THIRD-PARTY: LOGOS WITHOUT CERTIFICATION
THIRD-PARTY: GF CERTIFICATIONS

Certified Gluten-Free

GLUTEN-FREE CERTIFIED

CERTIFIED GLUTEN-FREE

National Celiac Association: Certified Gluten-Free
THIRD-PARTY:
ANIMAL WELLNESS CERTIFICATIONS

- Raised Without Antibiotics
- American Humane Certified
- USDA Organic
- Food Alliance Certified Producer
- Certified Grassfed by AWA
- Animal Welfare Approved
- Certified Humane Raised &Handled
- Global Animal Partnership

NSF
THIRD-PARTY: CERTIFIED PLANT BASED
SUPPORTING DOCUMENTS

SOPs (if no 3\textsuperscript{rd}-party cert)

- Supplier approval and monitoring system
- Production and sanitation methods
- Employee training
- Process control
- Traceability
- Sampling and testing, where required
- Control of non-conforming product
- Record of “product hold” incidents
- Record of segregation / quarantine
- Record of disposition of non-conforming inputs, products
CONTACT

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