Quality Inspection & Certification of Nuts & Dried Fruit in the United States

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Who is DFA?

• A private sector industry trade association of dried fruit & tree nut processors.

• Founded in 1908 as “Dried Fruit Association of California (DFA)”

• 89 member companies.
  - Many brands you recognize...

• 300 employees.
US Agricultural Commodities

Commodity Industry
- Growers
- Processors / Packers

United States Department of Agriculture – Agricultural Marketing Service (USDA – AMS)

Industry Marketing Agreement

Commodity Boards
- Growers
- Processors / Packers

- Standardizing Type & Quality
- Advertising & Marketing Commodity
- Research
US Commodity Boards

- Oversight by USDA-AMS
- Funded by the Industry & USDA
- Self-regulated by the Industry! (Growers & Processors)
Choose how to manage and regulate quality....

- Mandatory or Voluntary commodity inspections
- At Receiving point or Shipping Point (or both)
- Inspection Agency
- Mandatory inspections require minimum quality standards to be enforced and followed by all industry members
Quality Standards (USA)

- United States Department of Agriculture – Agricultural Marketing Service (USDA – AMS)

USDA Quality Grade Standards

Developed to help support industry
Standardized grades for commodity types
USDA Quality Standards

Quality Standards by Commodity Groups:

- Cotton
- Dairy
- Fresh Fruits & Vegetables (including Fresh Fruits and Vegetables for Processing)
- Livestock (including wool and Mohair)
- **Nuts & Specialty Crops**
- Poultry & Eggs (including rabbits)
- Processed Fruits & Vegetables
- Tobacco
DFA Quality Inspection Services

- **Receiving Inspections (Raw Goods)**
  Provides grower payment and processing information for handlers.

- **Outbound Inspections (Finished Goods)**
  To ensure quality to the customer and processing feedback to the handler.

- **Red Seal Certificate (Finished Goods)**
  Certificate of Food Safety practices and Product Quality contract specifications between Packer & Buyer. Available to DFA of California members.
Dried Produc Inspected by DFA....

Tree Nuts......

Dried Fruit......
Dried Produce Inspection....

Tree Nuts......

**Receiving Inspection** – Voluntary, 3rd Party, Federal, State

**Outbound** – DFA

**Receiving Inspection** – Federal, State

**Outbound** – Voluntary, 3rd Party, Federal, State

**Receiving Inspection** – Voluntary, 3rd Party, Federal, State

**Outbound** – Voluntary, 3rd Party, Federal, State

**Receiving Inspection** – Voluntary, 3rd Party, Federal, State

**Outbound** – Voluntary, 3rd Party, Federal, State
Dried Produce Inspection....

Dried Fruit......

Receiving Inspection – DFA
Outbound – DFA

Receiving Inspection – Voluntary, 3rd Party, Federal, State
Outbound – Voluntary, 3rd Party, Federal, State

Receiving Inspection – Federal
Outbound – Federal

Receiving Inspection – Voluntary, 3rd Party, Federal, State
Outbound – Voluntary, 3rd Party, Federal, State
A Brief History…

- Started with micro-analytical (filth) analyses in the 1940s.
- Pesticide testing added in the 1960s.
- Currently have five locations:
  - Fresno
  - Yuba City
  - Modesto
  - Kerman
  - Winters

Satellite laboratories
Food Additives

- Include preservative compounds:
  - Sulfates & sorbic acid in dried fruits.
  - BHT in nuts.
- Amounts are critical.
Pesticide Analysis

- Sample extracts are tested via GC-MS and HPLC/MS/MS
  - Pesticide fingerprint is created.
  - Screens for 300 compounds
  - Detects residues in the 5-25 ppb range.
Microbiology

• Tests for bacteria, yeast & molds that can cause spoilage/illness.

• Pathogen testing:
  - Example is *Salmonella* in nuts.
  - We use PCR (DNA testing) and ELISA (Enzyme-linked).
Mycotoxins

• Toxic by-products of mold growth.
• Insect damage increases mold contamination.
• Key mycotoxins of interest:
  - Aflatoxin (nuts, dried figs).
  - Ochratoxin (dried fruits).
Fumigation Research

- Dried fruits & nuts are routinely fumigated to kill insects.
- DFA conducts research on new fumigation methods & compounds.
- We even raise our own insects!
Accreditations

- USDA Approved Voluntary Aflatoxin Sampling Plan (VASP) Certificate Laboratories for Almonds.
- ISO 17025:2005
- California State Environmental Laboratory Accreditation
- USDA Approved Pistachio Aflatoxin Laboratory (Export Program)
- Official Laboratory, Japanese Ministry of Health, Labor & Welfare
- US-FDA Partnership Agreement (PA-07)
Food Safety Services

- Global Food Safety Initiative (GFSI) Audits
- GFSI Pre-Assessments
- HACCP Verification Audits
- Food Safety Consulting and Training
- DFA Member Food Safety Standard
- Other Audit Types (ABC DV Audits, (cGMP) Audits, Huller & Dryer Audits)