


Food Quality Safety
Dry Fruits and Nuts

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Objective

- To raise awareness among people involved in all aspects of the food system about food safety
- Companies compete on quality and price – safety is a given
- *Food Safety is a Must*



I. Why is Food Safety Important?

- Moral
- Marketing
- Mandatory
- Food is expected to nourish people, not makes them ill or kill them



II. Sources of Hazards in Food

- Every link in the chain from the farm to the fork can introduce safety hazards to the food


II. Sources of Hazards in Food, Cont.1

- Potential hazards associated with food could be:
- 1-biological 
- 2-chemical 
- 3- physical  




II. Sources of Hazards in Food, Cont.2





- Air
- Dust
- People
- Food Contact Surfaces
- Equipment
- Insects, Animals



Microorganisms Are the Enemy!



- Microorganisms are the root cause of quality and safety problems

A ton of microscopic bacteria may be active in each acre of soil



IV. Particular Food Safety Issues Relevant to the Dry Fruits and Nuts

- 😊 The good news:
 - dry, non perishable food category with few potential hazards
- ☹️ The bad news:
 - they support mold growth, some of which can produce mycotoxins, particularly aflatoxins produced by *Aspergillus flavus*



IV. Particular Food Safety Issues Relevant to the Dry Fruits and Nuts, Cont. 1

- *The most pronounced contamination has been encountered in tree nuts, peanuts, and other oilseeds, including corn and cottonseed.*
- *Aflatoxin B1 is usually predominant and is the most toxic*
- *Aflatoxins can produce health problems that affect the liver!*



IV. Particular Food Safety Issues Relevant to the Dry Fruits and Nuts, Cont.2

- In 1974 in northwest India 150 villages in adjacent districts reported 397 persons were affected with aflatoxicosis and 108 persons died
- A second outbreak of aflatoxicosis was reported from Kenya in 1982. There were 20 hospital admissions and 12 people died.




IV. Particular Food Safety Issues Relevant to the Dry Fruits and Nuts, Cont.3

- ☹️ More bad news:
- they are eaten raw and therefore will serve as a vehicle to transfer pathogens like *E.coli* and *Salmonella*



IV. Particular Food Safety Issues Relevant to the Dry Fruits and Nuts, Cont.4

- In the past 5 years, the California almond industry experienced two food safety incidents in which raw almonds were recalled due to the presence of *Salmonella*
- This prompted the industry to take action
- This action was voluntary and initiated by the industry.



V. Who is Responsible for Food Safety?




U.S. Food and Drug Administration


- Who has the responsibility for ensuring safe food?
- *"Delivering safe food to the dinner table is the culmination of the work of many people. Producers, shippers, processors, distributors, handlers, etc."*
- In the U.S., food safety is a shared responsibility of both the public and private sectors.



U K   **FOOD STANDARDS AGENCY**

HACCP Implementation Strategy

The Agency is working to prepare UK food businesses for the new EU food hygiene legislation that will apply on 1 January 2006. This legislation will make it a legal requirement for all food businesses (except primary producers) to put in place, implement and maintain a permanent procedure or procedures based on HACCP principles



V. Who is Responsible for Food Safety? Cont. 1

- Of all the groups involved in food safety, Processors bare the bulk of the responsibility because of the food volume handled and the potential cross contamination between raw and processed food
- Government agencies have a responsibility to guide, and support the industry and enforce food safety laws if necessary



V. Who is Responsible for Food Safety? Cont. 2

- Academic Institutions have a significant role to play in supporting the processors and government agencies through education and research
- Ultimately, the food company is responsible. If your name is on the freight bill/food package, you are responsible



VI. Roles of Private Sector and Public Sector in Food Safety

- All private and public sectors have roles to play
- These roles vary with the type, and size of industry and the resources available to both
- There needs to be open and continued communication among all sectors regarding existing and emerging food safety issues



VII. How Does the U.S. Food Industry Handle Food Safety?

- Almost all U.S. Food Industries have voluntary food safety programs
- Very few food industries have government mandated food safety programs
- Either way, the food companies understand and accept their responsibility to provide safe food



VII. How Does the U.S. Food Industry Handle Food Safety? Cont.1

- They also understand the direct link between food safety and their ability to stay in business and grow their business more profitable
- “Food safety programs often impact quality in a positive manner”



The California Almond Industry

- Food Quality and Safety Program (FQSP)
- **G.A.P.**
- provide guidelines to California almond growers on how to minimize potential hazards during production and sources of potential contamination



The California Almond Industry – Food Safety Approach

- G.A.P
- S.S.O.P
- G.M.P
- H.A.C.C.P

A Closer Look at the California Almond Industry



Farm to Freight




U.S.D.A. Almonds Grades



U.S.D.A. Grades (Effective 3/24/97)	U.S. Fancy	U.S. Extra No. 1	U.S. No. 1	U.S. Select Sheller	U.S. Standard Select Sheller	U.S. No. 1 Whole & Broken	U.S. No. 1 Pieces
Whole Kernels	—	—	—	—	—	30%	X
Minimum Diameter (in inches)	—	—	—	—	—	20/64, UOS	8/64
Dissimilar	5%	5%	5%	5%	5%	5%	X
Doubles	3%	5%	15%	15%	25%	35%	X
Chip & Scratch	5%	5%	10%	20%	35%	X	X
Foreign Materials	.05%	.05%	.05%	.1%	.2%	.2%	.2%
Particles & Dust	.1%	.1%	.1%	.1%	.1%	.1%	1%
Split & Broken	1%	1%	1%	5%	15%	X	X
Other Defects	2%	4%	5%	3%	3%	5%	5%
Serious Defects	1%	1.5%	1.5%	2%	2%	3%	3%
Undersize	—	—	—	—	—	5%	5%

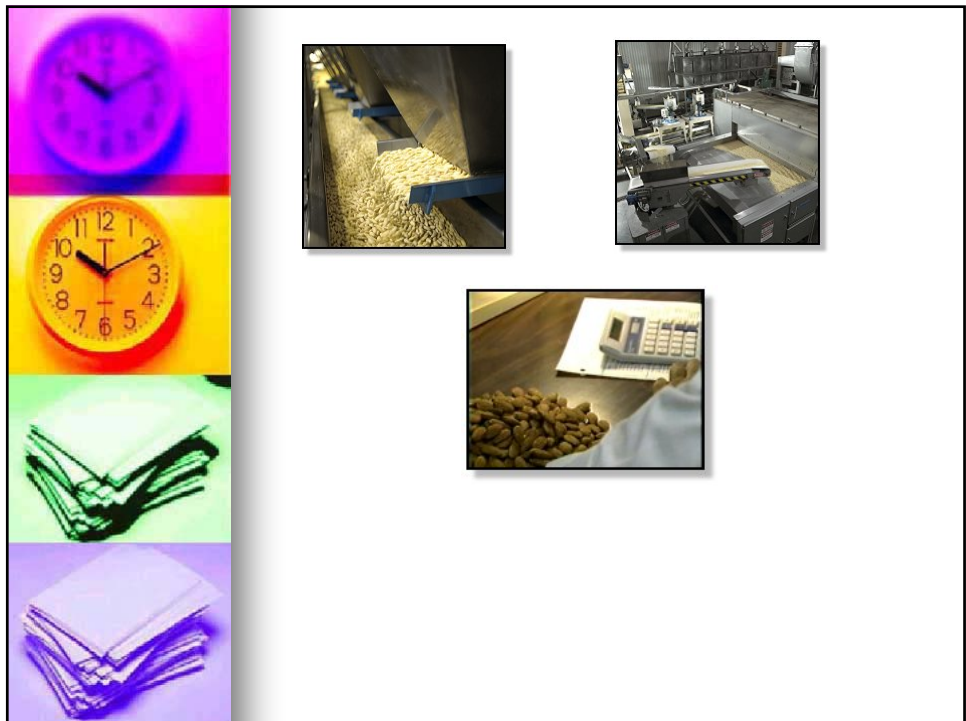
Water and temperature affect safety and quality

Fat affects quality











www.foodfileonline.com



A closer Look at the California Raisins Industry

VARIETAL & NUTRITIONAL INFORMATION

RAISIN <i>(Scientific Name)</i>	PARENT GRAPE	PROCESS	DESCRIPTION	AVAILABILITY	USES
Sun Dried Natural Seedless 	Thompson Seedless 	Dried under the sun. No chemical treatment used.	Seedless; dark brown color; average size.	95% of the total raisin crop. Found in all food stores of your area.	The most popular raisin for cooking, baking, salads, desserts, and eating out of hand.
Golden Seedless or Goldens 	Thompson Seedless 	Mechanically dehydrated. Specially treated with sulfur dioxide to preserve the golden color.	Seedless; golden amber color; average size.	5% of the total raisin crop. Available in most food stores, especially in the fall and winter.	Dried whenever a light colored raisin is desirable. Popular for fruit cakes and confections.
Zante Currants or Currants 	Black Corinth 	Dried under the sun. No chemical treatment used.	Seedless; non-stem; 1/4 average size. Very dark color; tart, tangy flavor.	Limited availability. Found in large food stores.	Popular for baking; traditional in hot cross buns.
Flame Seedless 	Flame Seedless 	Dried under the sun. No chemical treatment used.	Large, dark red and extra sweet. Distinctive fruity flavor.	Limited availability. Found in large food stores.	Favored for baking, especially in fruit cakes.

Raisins are shown actual sizes.

TO YOUR GOOD HEALTH

California raisins are nature's original candy - and one of the world's most nutritious dried fruits.

Sweet, tasty California raisins are cholesterol-free, low in sodium and virtually fat-free. They provide many necessary vitamins and minerals to your diet, including iron and potassium. Maybe best of all, they're 70 percent pure fructose, a natural form of sugar, that's easily digested for quick energy.

NUTRITION FACTS	
Per 1/4 Cup (10g)	
Total Fat	0g
Total Crap	10g
Total Sugar	10g
Total Protein	0g
Total Fiber	0g
Total Iron	0g
Total Potassium	0g
Total Sodium	0g
Total Cholesterol	0g
Total Fructose	7g
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EASY TO KEEP, EASY TO EAT

Due to the high sugar content in California raisins, they don't need preservatives to keep them fresh. Also, raisins will keep their flavor, color and nutritional value for up to 15 months when stored between 40-50 degrees Fahrenheit. Raisins can also be frozen and thawed easily for later use.

Store your raisins in an airtight container to keep them fresh, soft and free from humidity that can cause the fruit sugar to crystallize on the raisins' skin. Also, store your raisins away from brick and concrete walls where they can absorb moisture.


Most U.S. raisin grapes are grown and dried near Fresno, California

Between 300,000 and 400,000 tons of raisins are produced annually,

Farm value around \$400 million





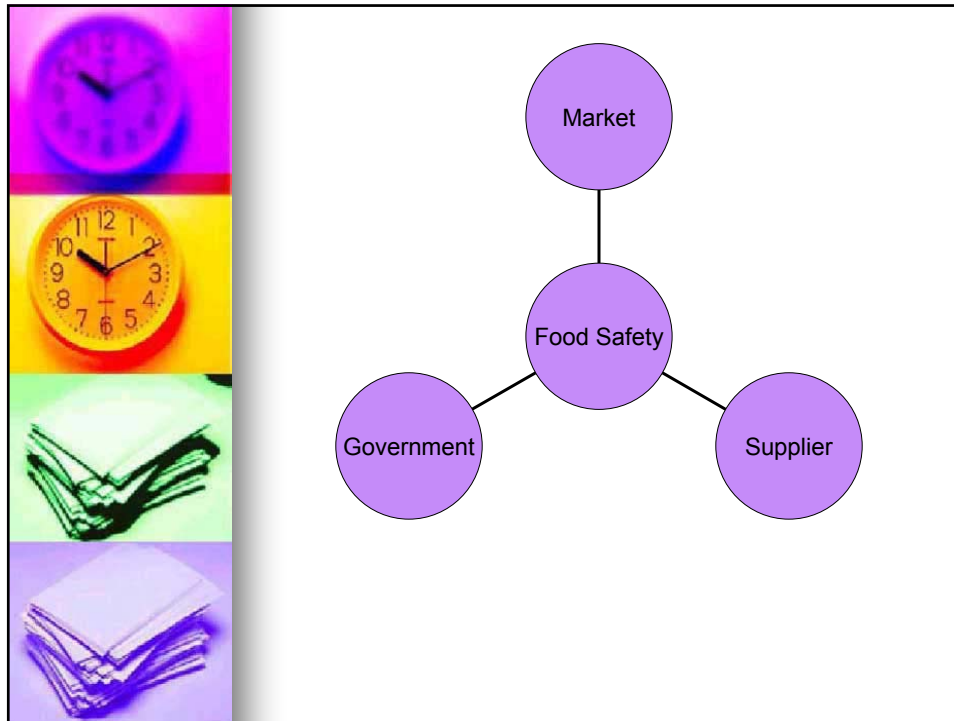


Quality Control

- Laser sorter
- I.R. Quality Control



VIII. What is needed Countrywide to Support a Food Safety Initiative?



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- ### IX. Conclusion
- Ensuring a Safe Food Supply is Everyone's Responsibility
 - There Are Established Systems That Ensures Food Safety
 - The Initiative Must Come From the Food Industry-Other Sectors Must Help

X. Q & A



*Thank
You*

