

FOOD FIGHT: FOOD ADDITIVES

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Where are consumers?

- 51% report that additives have a strong influence on purchase
- Over 30% "cautious about serving foods with preservatives" compared to 24%, 10 years ago



Nielsen & The Hartman Group

Where are consumers?

• 25% sought products with only recognizable ingredients or shortest ingredient list

• 59% believe fewer ingredients means a healthier product

INGREDIENTS: ENRICHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, THIAMIN MONONITRATE (VITAMIN B1), RIBOFLAVIN (VITAMIN B2), FOLIC ACID), CORN SYRUP, SUGAR, CROISSANT AND PAIN DE MOUTON (WITH TRIO FOR FRESHNESS), CORN SYRUP SOLIDS, BUTYRATE, HIGH FRUCTOSE CORN SYRUP, FRUCTOSE, GLYCERIN, CONTAINS 2% OR LESS OF COCOA PROCESSING WITH ALKALI, POLYDIOXYLSE, MODIFIED CORN STARCH, DRIED CREAM, CALCIUM CARBONATE, CONJUGATED LEAVENING (BAKING SODA, SODIUM ACID PHOSPHATE, MONOCALCIUM PHOSPHATE, CALCIUM SULFATE, HYDROLYZED MONOCALCIUM PHOSPHATE, MILK KERNEL OIL, SODIUM STEAROYL LACTYLATE, GELATIN, COLOR ADDED, SOY LECITHIN, SALT, NATURAL AND ARTIFICIAL FLAVORS, VANILLA EXTRACT, CARBON DIOXIDE, CARBON DIOXIDE, VANILLA FLAVOR, YELLOW #6 LAKE, RED #40 LAKE, CARAMEL COLOR, MANGANOSE, BLUE #1 LAKE, REDUCED IRON, YELLOW #6 LAKE, PHOSPHORIC MONOCALCIUM (VITAMIN B6), HIGH FRUCTOSE CORN SYRUP, THIAMIN HYDROCHLORIDE (VITAMIN B1), CITRIC ACID, FOLIC ACID, RED #40, YELLOW #6, YELLOW #5, BLUE #1, BLUE #2.

Where are consumers?

- Consumers are willing to pay a premium when a product label says "free of" something
 - ✓ But only if the package includes "negative" information on whatever the product is "free of"
 - ✓ When provided more information about ingredients, consumers are more confident about their decisions and value the product more

According to research from the Hartman Group, consumers deliberately avoid the following ingredients:

- High fructose corn syrup 56%
- Saccharin 52%
- Growth hormones 52%
- MSG 51%
- Aspartame 49%
- Artificial flavors 49%
- Artificial colors or dyes 49%
- Artificial preservatives 45%
- Sucralose 42%
- Partially hydrogenated vegetable oils 37%

Where are consumers?



- Confusion and fear of the unknown drive interest in simplified labels
- "Clean" "Simple" "Real" "Natural" used on labels to introduce no additives or preservatives

Where are consumers?



- Looking for removal of "artificial" ingredients
- Avoiding ingredients they know are additives, preservatives, or words they don't know

Understanding consumer attitudes

- Consumers tend to:
 - ✓ amplify the risk when a food or a technology is unknown
 - OR
 - ✓ minimize the risk in familiar foods or home preparation
- Difficult-to-pronounce additive names lead to the impression of unfamiliarity & perceptions of higher health risk

Understanding consumer attitudes

- Consumer perceptions and their resulting actions determine the commercial future of any food ingredient



What is a food?

- Defined as "articles or components of articles used for food or drink for humans or animals"
- Safety standard:
 - ✓ Presumption of safety (unless it contains a poisonous or deleterious substance in an amount which is shown to make it ordinarily injurious to health)

(FD&C Act §201(f))

What is a food additive?

Food Additive (Food Additive Amendment, 1958)

"Any substance, the intended use of which may reasonably be expected to, directly or indirectly, become a component or otherwise affect the characteristics of any food"



(U.S. Public Law 85-929, 1958)

Food Additives

- Substances that are reasonably expected to become part of the food
- Added directly
 - ✓ Color, flavor, appearance, texture, nutritional quality, cooking/processing properties, improve shelf-life

Food Additives

- Added indirectly
 - ✓ Antibiotics
 - ✓ Hormones
 - ✓ Pesticide residues
 - ✓ Packaging and processing techniques or materials

GRAS List

- “Generally Recognized as Safe”
- Original list in 1958
- A list of safe food additives that can be added to our food supply
- Manufacturer of any new additive must prove safety

Delaney Clause (1958)

- “any food additive that is shown to cause cancer in humans or animals cannot be added to foods”

Additives in Perspective

- For Food Preservation
 - ✓ Prevents spoilage – foodborne illness was once the #1 cause of death
- Enables geographic distribution – greater variety of food for more people in areas with less diverse agriculture

Additives in Perspective

- For Sensory Characteristics
 - ✓ Increase consumer appeal and acceptability to increase sales – consumer expectations – e.g. “red” beverages like “fruit punch”; pink hot-dogs (might naturally be gray)
- For Industry (internal) Cost-Savings
 - ✓ Some additives reduce labor costs, replace or minimize more expensive ingredients

Some Additive Types

1. Nutrient supplementation—replace nutrients lost in processing (enrichment) or add nutrients (fortification) that weren’t there (examples: thiamin, riboflavin, iron, vitamin D, calcium)
2. Preservatives—prevent food spoilage from microbes or rancidity; changes in color, flavor, texture (examples: vitamin C (ascorbic acid), citric acid, BHT, BHA, vitamin E)

Additive Types

3. Coloring agents—examples: grape skin extract, beta carotene, FD&C blue #1
4. Flavoring materials—examples: natural flavoring, artificial flavoring, spices, MSG, yeast extract

Additive Types

5. Emulsifiers—prevent separation of fat and water-based ingredients (examples: lecithin, sorbitan monostearate, mono- and di-glycerides)
6. Stabilizers/thickeners—uniform texture and mouthfeel (examples: gelatin, guar gum, carageenan, whey)

Additive Types

7. Alternative sweeteners—add sweetness w/o adding kcals (examples: saccharin, aspartame, neotame, acesulfame-K, sorbitol, sucralose (Splenda))
8. Fat replacers—provide texture and creamy mouthfeel in reduced fat foods (examples: Olestra, cellulose gel, Simplese, whey protein concentrate, polydextrose, guar gum)

Irradiation

- Considered a food additive
- Food exposed to high dose radiation which kills microbes & insects
- Radiation stops enzyme spoilage of food

- Consumer fear
- Food is not radioactive
- Very minimal changes in texture, flavor, and nutrition
- Must be labeled



Food Fight??



(nutritionmonth2017.ca)

Consumer-friendly Resources

- <https://cspinet.org/eating-healthy/chemical-cuisine#loophole>
- <https://www.fda.gov/Food/IngredientsPackagingLabeling/FoodAdditivesIngredients/ucm094233.htm>
- <https://www.fda.gov/Food/IngredientsPackagingLabeling/FoodAdditivesIngredients/ucm094230.htm>
- <https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/additives-in-meat-and-poultry-products/additives-in-meat-and-poultry-products>
- <https://medlineplus.gov/ency/article/002435.htm>

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