

Food Additives

Any substance other than the main ingredient in a food is called an additive. Some additives prevent food from spoiling or separating. Others are used to add color or flavor, or to give foods a creamy texture. Nutrients such as vitamins and minerals also can be additives. Food manufacturers use hundreds of additives, including preservatives, nutritional supplements, flavoring agents, coloring agents, emulsifiers, stabilizers, and thickeners. Federal law requires that food labels list these and other ingredients on the packaging.

Preservatives include salt, BHA (butylated hydroxyanisole), BHT (butylated hydroxytoluene), and EDTA (ethylene diamine tetraacetic acid). Nutritional supplements include elements, minerals, and vitamins (calcium, magnesium, vitamin C, *etc.*). Flavoring agents include spices and natural fruit flavors, as well as artificial flavors such as vanillin. Among the various dyes is beta carotene. Carrageenan, a stabilizer, is extracted from seaweed. Monoglycerides, diglycerides, and polysorbates are examples of emulsifiers. Pectin and gelatin are thickeners.

In this activity, you will identify additives in various foods and determine the purpose of each additive.

Procedure:

- At home, look at the nutritional information labels of some products to find the additives on your list. Check cereal, ice cream, hot dogs, margarine, your favorite packaged lunch snack (record the product name), and a packaged meal (*e.g.*, Michelina. Record the product name).
- Refer to Table 2 to find the purpose of each additive. Record the additive in the appropriate column of the data table.

Table 1 - Data table model

	Cereal	Ice cream	Hot dogs	Margarine	Lunch snack	Packaged meal	Purpose
Preservative							
Supplement							
Flavoring							
Coloring							
Emulsifier							
Stabilizer							
Thickener							
Nutrient							
Sweetener							

Table 2 - Additives and their purpose

Additives	Foods	Purpose
Agar	ice cream, frozen custard, sherbert	thickener

Ascorbic acid (vitamin C)	beverages, beverage mixes, fruit products	nutrient, preservative
BHA and BHT	bakery products, cereals, snack foods, fats and oils	preservatives
Calcium propionate	breads and other baked goods many types and varieties	preservative
Caramel	ice cream, sweets	coloring
Cellulose	diet foods	thickener, improved texture
Corn syrup	cereals, baked goods, candies, processed foods, processed meats	sweetener
Dextrose	cereals, baked goods, candies, processed foods, processed meats	sweetener
Gelatin	puddings, cheese spreads, cream cheese	thickener
Gum acacia (gum Arabic)	soft drinks, imitation fruit juice drinks, ice cream	thickener, stabilizer
Hydrolyzed vegetable protein	processed meats, gravy and sauce mixes	flavoring
Iodine	salt	nutrient
Iron	grain products	nutrient
Pectin	jams, jellies, fruit products, frozen desserts	thickener, improved texture
Potassium sorbet	cheeses, syrups, cakes, beverages, mayonnaise, fruit products, margarine, processed meats	preservative
Riboflavin	flour, breads, cereals, rice, macaroni products	nutrient, coloring
Saccharin	special diet foods and beverages	sweetener
Saffron		coloring
Sodium nitrate and sodium nitrite	many types and varieties cured meats, fish, poultry	preservatives
Sucrose	cereals, baked goods, candies, processed foods, processed meats	sweetener

Questions

1. What are preservatives, emulsifiers and stabilizers?
2. Which individual additive was found most often in the foods you listed?
3. What kind of additive (preservative, emulsifier, sweetener, *etc.*) was used most often in the foods you listed?
4. Which of the foods you used contained the most additives? Which contained the fewest?
5. Which, if any, of the foods you used contain no additives? Which ones?

6. Why are substances other than the main ingredient of a food called additives? Why are manufacturers required to list these additives?
7. Why do you think many foods contain “nutritional supplements”?
8. Why do you think sugar, salt, and fat are added to so many different kinds of foods?
9. Sucralose and aspartame are two widely used artificial sweeteners. What are the advantages and disadvantages of using natural or artificial sweeteners?
10. List some advantages and disadvantages of using additives in our food. Do you think the benefits outweigh the risks?
11. Describe any changes you will make to your eating habits as a result of doing this activity.