

Anyone who stores cooking oil knows how quickly it can develop "off" odors and flavors, a state called rancidity. An understanding of the causes of rancidity and proper storage conditions can help us enhance the storage life of cooking oil and other foods containing fat.

Some populations throughout the world obtain too many of their calories from fat and are striving to limit dietary fat. Nevertheless, we all need some fat in our diet from the standpoint of nutrition and taste. With respect to nutrition, certain fats are required in the diet for growth and good health, and fat is the "carrier" for certain essential vitamins. Regarding taste, many of the textures and flavors of foods that make eating enjoyable are attributable to, or carried by, the

Storage conditions that affect the deterioration of fats, oils, and food in general are summarized in the acronym HALT: Humidity, Air, Light, and Temperature. Reducing exposure to humidity, air, light, and warm temperatures will prolong storage life. Proper food packaging can reduce or eliminate moisture, air, and light. Newly opened oil should be left in its original container or be placed in a clean container, since even a small amount of old oil mixed with fresh oil will hasten rancidity. Temperature dramatically affects the storage life and quality of fats and oils. Some fats, such as butter or margarine, can be frozen to prolong storage time. All fats, oils, and foods containing fat keep better in a cool area of a house, such as a basement.

Fats and oils vary in their ability to store for prolonged periods. Generally, shortening can be stored for several years, whereas cooking oil must be rotated more frequently. The storage life of fats and oils and foods containing them varies widely for several reasons: (1) storage conditions differ, (2) expiration dates differ, (3) most food products contain a mixture of different kinds of fats that vary in stability, and (4) individual consumers differ in their ability to tolerate rancidity. What may taste acceptable to one person may taste unacceptable to another. However, almost everyone can detect rancidity when only a very small amount of fat or oil has deteriorated. Thus foods containing even less than 1 percent of fat or oil can have a reduced storage life because of rancidity.

Food storage rotation, important in avoiding rancidity, is easier when we buy and store the type of foods we are accustomed to eating. In the United States, an average adult consumes each year the following approximate amounts of dietary fat in these various forms: 24 pounds in cooking and salad oils and mayonnaise-type dressings; 23 pounds in shortening and frying fat; 20 pounds of dietary fat from meat, poultry, fish, and cheese; and 13 pounds in butter, margarine, peanut butter, and other foods.

Obviously an ideal list of what everyone must store does not exist. Differences among countries, cultures, climates, and individual preferences require flexibility in food storage. Still, an understanding of the causes of food deterioration and proper storage conditions is helpful in maintaining quality food storage.—**Oscar A. Pike, associate professor of food science, Brigham Young University, Provo, Utah**

[illustration] Illustrated by Joe Flores