



## ***Food Safety & Preservation:*** **Herbs and Vegetables in Oil**

*SP 50-701, Revised May 2009*

It's important to keep food safety in mind when storing vegetables (such as garlic, mushrooms, chili peppers) or herbs in oil. These low-acid foods can be a source of *Clostridium botulinum* bacteria, which are found in soil, water, and air. Oil's oxygen-free environment is perfect for growth of the bacteria. For this reason, herbs and vegetables in oil must be stored correctly to prevent botulism food poisoning.

Commercial garlic-in-oil mixtures are acidified to prevent bacterial growth. These products can be stored safely at room temperature. Unfortunately, acidification of homemade herb or vegetables-in-oil mixtures can't be recommended until research is conducted. Instead, it's essential to store hazardous products in the refrigerator.

When raw or cooked vegetables or raw herbs are stored in oil, *Clostridium botulinum* bacteria can grow. These mixtures must be refrigerated to slow bacterial growth. After 3 weeks of refrigeration, the increased number of bacteria will become a food safety hazard. Therefore, these mixtures should not be refrigerated longer than 3 weeks.

When raw or cooked vegetables or raw herbs are immediately removed after flavoring oil, the bacteria will not have a "food source" for growth. The flavored oil can be stored safely at room temperature.

When vegetables or herbs are dried, water will not be available for bacterial growth. Therefore, dried vegetables or dried herbs in oil can be stored safely at room temperature.

### **Storage Recommendations**

#### **Raw or cooked garlic and/or herbs in oil**

These mixtures **MUST** be refrigerated. Do not store them longer than 3 weeks in the refrigerator.

**Note:** Raw garlic **MAY** be safely stored in vinegar at room temperature.

#### **Dried garlic and/or herbs in oil**

If oil is seasoned with dried garlic and/or dried herbs, the mixture may be safely stored at room temperature. (Refrigeration may delay rancidity, however.)

#### **Dried tomatoes in oil**

Unseasoned dried tomatoes may be safely stored in oil at room temperature. (Refrigeration may delay rancidity, however.)

#### **Dried tomatoes seasoned with garlic and/or herbs**

If raw or cooked garlic or herbs are added to tomatoes before drying, seasoned tomatoes in oil can be safely stored at room temperature. (Refrigeration may delay rancidity, however.)

If raw or cooked garlic or herbs are added after drying, dried tomatoes-in-oil mixtures **MUST** be refrigerated because bacteria will be able to grow. Do not store longer than 3 weeks in the refrigerator.

### **Garlic-flavored Oil**

Oil can be flavored by heating finely minced raw garlic in it (at a very low temperature). Remove the garlic by pouring the cooled oil through a fine-meshed sieve lined with several layers of cheesecloth or a foodgrade paper towel. If all of the garlic is not removed, the flavored oil must be stored in the refrigerator (for no more than 3 weeks).

### **Mushrooms or chilies in oil**

Mushrooms and chilies in oil must be refrigerated unless they have been pickled with vinegar or lemon juice. Don't store them longer than 3 weeks in the refrigerator.

### **Pesto**

Pesto (an uncooked seasoning which includes fresh basil, garlic, pine nuts, and oil) must be refrigerated. Do not store longer than 3 weeks in the refrigerator. Freeze for longterm storage.

### **Making Flavored Oils**

Select a good quality oil. Olive oils and vegetable oils can both be used to make flavored oils.

### **Fresh Vegetables/Herbs in Oil**

Garlic, fresh chilies, lemon rind, onion, and fresh herbs all make great flavored oils. Think of where you will use the oils and this will help determine what flavor you might enjoy.

In clean jars, place whole or crushed vegetables and/or herbs. Add oil and store in the refrigerator for up to 3 weeks. Freeze to store safely longer than 3 weeks.

### **Hot Oil Infusion Method**

Oils are combined with low-acid foods, such as fresh herbs, fresh garlic, or chilies, and then heated and the solids strained out. These flavored oils can be stored at room temperature provided all the solids have been strained out of the oil. For best quality, refrigerate or freeze.

### **Recipes**

#### **Basic pesto**

2 cups fresh basil leaves\*  
3 cloves garlic  
½ cup olive oil  
¼ cup pine nuts\*\*  
¼ cup grated Parmesan cheese  
¼ teaspoon salt

Finely chop nuts and garlic in a food processor. Add basil and chop really fine. Add Parmesan cheese and salt. Mix well. When everything is well blended add oil and mix all ingredients together.

**Note:** A blender can be used if you do not have a food processor, but it is more time consuming.

\* Can use 1-cup basil and 1-cup parsley leaves.

\*\* Can substitute sunflower seeds for pine nuts or use walnuts or a combination.

Store pesto in the refrigerator for up to 3 weeks OR freeze for longer storage. Hint: Pesto can be frozen in ice cube trays. When frozen, wrap individual cubes in plastic wrap and store in a freezer container.

**Caution:** It's unsafe to store pesto at room temperature.

### **Garlic, Vegetable, or Herb Flavored Oils**

2-3 heads of finely chopped garlic or

3 cups of: finely chopped vegetables, **or** a combination of vegetables and herbs,  
**or** loosely packed coarsely chopped herbs

3 cups olive or vegetable oil

Heat the oil over medium heat until you see a few bubbles rise from the bottom of the pan. Reduce heat to low and let steep for about 2 hours. Keep the temperature around 170°F. Do not allow oil to get too hot or it may develop a bitter flavor. Use a candy thermometer to regulate temperature.

After 2 hours, remove the pan from the burner and strain hot oil through a coffee filter into a heat resistant container. Let it cool to room temperature for about 30 minutes. Re-strain oil into clean storage jars.

The strained oil can be stored at room temperature indefinitely, but the quality will be better if kept in the refrigerator or freezer for long-term storage.

### **Dried Tomatoes in Oil**

As long as no **fresh** herbs or vegetables are added with the dried tomatoes, they can be packed safely in oil and stored at room temperature. The tomatoes will soften more if quickly dipped in bottled lemon juice or 5% vinegar before placing in the oil. The tomatoes can be flavored with dried herbs and garlic.

### **Uses**

Flavored oils can be used when sautéing meat, fish, poultry and vegetables in a vinaigrette dressing or in a marinade sauce. They can also be used as a dip for French bread.

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Flavored oil recipes developed by Nellie Oehler, Lane County Family and Community Development

Source: Family Food Education program