

Herb & Vegetable Flavored Oils

A variety of herb and vegetable-in-oil products are currently being produced. There is a potential risk of botulism with any low-acid product stored in a low-oxygen environment such as oil.

The highest risk of botulism toxin production is when a moist low-acid vegetable is stored in oil at room temperature. This high risk is because the key factors in the potential for botulism from vegetables stored in oil are when a low acid food has sufficient moisture for *Clostridium botulinum* to grow and the temperature is warm enough for rapid growth of the bacteria.

To control bacterial growth, low-moisture, acidification or temperature control is necessary. Commercial garlic-in-oil mixtures are acidified to prevent bacterial growth, but there are no research-tested methods for producing such acidified mixtures at home.

What's The Risk?

Flavored oils can generally be made without the danger of growing botulism when a few indispensable steps are added to the recipe.

- ◆ First, thoroughly wash all fresh herbs and vegetables that will be used in the flavored oil. Washing will not sterilize the food, but remove major contamination.
- ◆ Soaking all herbs or veggies in lemon juice or vinegar prior to placing them to the oil will kill the bacteria found on the surface.
- ◆ Adding an acidifying agent such as lemon juice or vinegar to the recipe will also reduce the risk. Add either lemon juice or vinegar at the rate of one tablespoon per cup of oil. **Add it as the recipe is being prepared, not at a later date.** Mix the acid and the oil by shaking vigorously and frequently.
- ◆ The infused oil will keep in the refrigerator for up to 3 weeks. The cool temperature will retard the growth of bacteria and delay rancidity. If the oil becomes cloudy, produces foul odor or gas bubbles it needs to be thrown away.
- ◆ Dried herbs and vegetables, instead of fresh, can be added to oils without having to soak them in an acid. It can safely be stored at room temperature, but refrigeration will delay rancidity.
- ◆ Tomatoes in oil are lower risk than other vegetables because most tomatoes are naturally moderately high in acid. **Dried tomatoes** in oil can be safely stored at room temperature. As an added safety margin, be certain that the tomato is thoroughly dried before adding oil.
- ◆ Pesto (an uncooked seasoning that includes fresh basil, garlic, pine nuts, and oil) must be refrigerated. Do not store longer than 3 weeks in the refrigerator. Freeze for longer storage.
- ◆ Fresh vegetables and herbs make good flavored oils. These products should not be stored at room temperature. Store in the refrigerator for up to 3 weeks, freeze for longer storage.