



Preserving Food:

Preparing Safer Jerky

Jerky is a lightweight, dried meat product that is a handy food for backpackers, campers and outdoor sports enthusiasts. It requires no refrigeration. Jerky can be made from almost any lean meat, including beef, pork, venison or smoked turkey breast. (Raw poultry is generally not recommended for use in making jerky because of the texture and flavor of the finished product.)

Raw meats can be contaminated with microorganisms that cause disease. These harmful bacteria can easily multiply in moist, high protein foods like meat and poultry and can cause illness if the products are not handled correctly. If pork or wild game is used to make jerky, the meat should be treated to kill the *Trichinella* parasite before it is sliced and marinated. This parasite causes the disease, trichinosis. To treat the meat, freeze a portion that is 6 inches or less thick at 5°F or below for at least 20 days. Freezing will not eliminate bacteria from the meat.

General Tips For Safe Food Handling

The following general tips for safe handling are based on USDA Meat and Poultry Hotline recommendations.

- Always wash hands thoroughly with soap and running water for at least 20 seconds before and after handling raw meats.
- Use clean equipment and utensils.
- Keep meat and poultry refrigerated at 40°F or below. Use ground beef and poultry within 2 days, red meats within 3 to 5 days or freeze for later use.
- Thaw frozen meat in the refrigerator, not on the kitchen counter.
- Marinate meat in the refrigerator. Do not save and re-use marinade.

When preparing jerky from wild game, it is important to remember that the wound location and skill of the hunter can affect the safety of the meat. If the animal is wounded in such a way that the contents of its gut come in contact with the meat or the hunter's hands while dressing the meat, fecal bacteria can contaminate the meat. It is best to avoid making jerky from this meat and use it only in ways that it will be thoroughly cooked. Deer carcasses should be rapidly chilled to avoid bacterial growth.

The risk of foodborne illness from home-dried jerky can be decreased by allowing the internal temperature of the meat to reach 160°F, but in such a way as to prevent case hardening. Two methods can be used: heating meat strips in marinade before drying or heating the dried jerky strips in an oven after the drying process is completed. Directions for both methods will be presented here. When the strips are heated in a marinade before drying, drying times will be reduced. Color and texture will differ from traditional jerky.

Preparing the Meat

Partially freeze meat to make slicing easier. The thickness of the meat strips will make a difference in the safety of the methods recommended in this publication. Slice meat no thicker than 1/4 inch. Trim and discard all fat from meat because it becomes rancid quickly. If a chewy jerky is desired, slice with the grain. Slice across the grain if a more tender, brittle jerky is preferred. A tenderizer can be used according to package directions, if desired. The meat can be marinated for flavor and tenderness. Marinade recipes may include oil, salt, spices and acid ingredients such as vinegar, lemon juice, teriyaki, or soy sauce or wine.

Jerky Marinade*

1/4 cup soy sauce
1 tablespoon worchestershire sauce
1/4 teaspoon each of pepper and garlic powder
1/2 teaspoon onion powder
1 teaspoon hickory smoke-flavored salt

* (for 1½ to 2 pounds of lean meat (beef, pork or venison))

Combine all ingredients. Place strips of meat in a shallow pan and cover with marinade. Cover and refrigerate 1 to 2 hours or overnight. Products marinated for several hours may be more salty than some people prefer. If you choose to heat the meat prior to drying to decrease the risk of foodborne illness, do so at the end of the marination time. To heat, bring the strips and marinade to a boil and boil 5 minutes before draining and drying. If strips are more than 1/4 inch thick, the length of time may need to be increased. If possible, check the temperature of several strips with a metal stem-type thermometer to determine that 160°F has been reached.

Drying the Meat

Remove meat strips from the marinade and drain on clean, absorbent towels. Arrange strips on dehydrator trays or cake racks placed on baking sheets for oven drying. Place the slices close together, but not touching or overlapping. Place the racks in a dehydrator or oven preheated to 140°F. Dry until a test piece that is allowed to cool cracks but does not break when it is bent. Samples heated in marinade will dry faster. Begin checking samples after 3 hours. Once drying is completed, pat off any beads of oil with clean, absorbent towels and cool. Remove strips from the racks. Cool. Package in glass jars or heavy plastic food storage bags.

If the strips were not heated in marinade prior to drying, they can be heated in an oven after drying as an added safety measure. Place strips on a baking sheet, close together, but not touching or overlapping. For strips originally cut ¼ inch thick or less, heat 10 minutes in an oven preheated to 275°F. (Thicker strips may require longer heating to reach 160°F.)

Making Jerky from Ground Meat

Jerky can be made from ground meat using special presses to form or shape the product. Disease-causing microorganisms are more difficult to eliminate in ground meat than in whole meat strips. If ground meat is used, follow the general tips for safe handling tips listed previously. Be sure to follow the dehydrator manufacturer's directions carefully when heating the product at the end of drying time. Again, an internal temperature of 160°F is necessary to eliminate disease-causing bacteria such as *E. coli* O157:H7, if present.

Storing the Jerky

Properly dried jerky will keep at room temperature 2 weeks in a sealed container. For best results, to increase shelf life and maintain best flavor and quality, refrigerate or freeze jerky.



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