



Food Preservation Fact Sheet

FP02-27

Jerky Drying

Food Dehydration:

- For thousands of years, people have dried foods to preserve them for leaner times.
- Drying also reduces both the volume and the weight, making dried products easier to store.
- **How does drying preserve food?** Most food products are about 90% water. The major food spoilers - bacteria, yeast and molds - need environments of 60% water or more to grow. Drying reduces water content of foods to 30% or less.

Drying Jerky

Jerky can be made from almost any LEAN meat, including beef, pork, venison or smoked turkey breast. Raw poultry is generally not recommended for making home made jerky because of texture and flavor of the finished product.

Because of the possibility of microorganism contamination, special steps need to be taken to prevent foodborne illness. If pork or wild game is used to make jerky, the meat should be treated to kill the trichinella parasite (this causes trichinosis) before it is sliced and marinated.

To treat the meat – freeze a portion that is 6 inches or less thick at 0°F or below for at least 30 days. Freezing will not eliminate bacteria from the meat.

Follow these recommendations for safe handling of meat and poultry:

- Always wash hands thoroughly with soap and warm 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 and DO NOT try to save and re-use marinade.

When preparing jerky from wild game, 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 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.

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 to reach the temperature of 160°F; heating meat strips in marinade before drying or heating the dried jerky strips in an oven after the drying process is completed. When the strips are heated in a marinade before drying, drying times will be reduced. Color and texture will differ from traditional jerky.

Two methods are recommended to reach 160°F when drying meat for jerky.

1. If you choose to heat the meat prior to drying to decrease the risk of foodborne illness, do so at the end of the marinating time. To heat, bring strips and marinade to a boil and boil for 5 minutes before draining and drying. More time may be needed if strips are more than ¼ inch thick. Check the temperature of several strips with a metal stem-type thermometer to determine that 160°F has been reached.
2. A second method, if the strips were not heated in marinade prior to drying is to heat in an oven after drying. Place strips on a baking sheet, close but not touching or overlapping. For strips originally cut ¼-inch or less, heat 10 minutes in an oven preheated to 275°F

Slicing of meat to be used for strip jerky is best accomplished when meat is slightly frozen. Slice 1/8" or 1/4" thick with the grain (parallel) of the meat. Be sure to discard fat. Fat can become rancid quickly. Ground meat of less than 20% fat should be used for hamburger jerky (if you have wild meat processed, use ground meat with no fat added for jerky).

Strip jerky is usually marinated in a solution of spices for 1 to 2 hours or overnight to enhance flavor; seasonings are "kneaded" into ground meat jerky then mixture is allowed to stand for 1 hour for flavors to mix. Strips may be dried either on a rack or tray or hung over the rungs of the oven rack with a pan below to catch drippings. Ground meat mixture is spread 1/4" thick by placing mixture between two sheets of waxed paper and rolling with a rolling pin to a uniform thickness. Top layer of waxed paper is then removed and meat on lower layer is placed on tray. Trays or strips are placed in oven at 140 - 150°F to dry until brittle. Strip jerky should be turned occasionally and drip pans should be emptied, as needed.

For best results, cooled jerky should be stored in airtight containers in the refrigerator or freezer.

Strip Jerky

1 1/2 lb lean meat, partially frozen
1/4 c soy sauce
1 T Worcestershire sauce
1/4 tsp. black pepper
1/4 tsp. garlic powder
1/2 tsp. onion powder
1 tsp. hickory smoke-flavored salt

Remove all visible fat, slice meat to 1/8" to 1/4" thick with the grain. Mix all ingredients. Marinate meat 2-12 hrs in the refrigerator. Remove meat from marinade and pat dry on clean absorbent towel. Lay strips in dehydrator or over oven rack rungs or on cookie sheets. Dry for 5-12 hours at 140-150°F until meat cracks but does not break when bent. Pat off any oil beads with paper towel. Store in refrigerator or freezer in an airtight container.

Hamburger Jerky

1 1/2 lb extra lean ground beef (20% fat or less)
1/2 cup Teriyaki sauce
1/4 cup soy sauce
1/2 tsp. garlic salt
1/2 tsp. pepper

Mix all ingredients and "knead" well. Allow to stand 1 hour in refrigerator. Spread wax paper on flat surface. Divide mix into thirds. Place ball of mixture on waxed paper. Cover with another sheet of waxed paper and roll to 1/4" thick with rolling pin. Remove top sheet of waxed paper and place meat mixture on tray. Dry at 140-150°F until dry and brittle. Store in the refrigerator or freezer.

Source: *So Easy To Preserve*, 4th Edition, 1999. Cooperative Extension Service, University of Georgia and University of Illinois Extension Jerky Drying Fact Sheet.
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