



HUNTER'S

What to do with
extra game meat?
Go retro and make into
JERKY

DILEMMA

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It's hunting season, and the freezer is already full of meat butchered this fall and fish caught this summer.

What to do with all the additional meat?

Consider doing what people did back in the olden days – make it into jerky.

North American Indians dried strips of meat in the sun or over a fire to make "Ch'arki," a name derived from the Quechaun language of the Incas that translates into "dried meat."

Jerky most likely was made out of venison, buffalo, or turkey and was a perfect fit for the nomadic lifestyles of many Native Americans and other long-distance travelers because it was a healthy, rich-in-protein food that fit nicely into a saddle bag, a hunter's belt, or a farmer's pocket. Nowadays, jerky is a popular and healthy snack to have on hand and is easy to make.

Food Safety Tips

Avoid contaminating your jerky with pathogens. Keeping game meat clean and cooling it as quickly as possible to less than 40°F will help minimize the initial microbial load on the meat. The hunter who uses good practices (quartering, bagging, hanging in a cool place with adequate air circulation) ensures a high-quality meat.

The jerky needs to be processed in a way that destroys pathogens. In the past, jerky was made by drying meat in the sun or over the fire. We now know this method doesn't heat the meat enough to kill pathogens that can make you sick.

Research shows there are three options for preparing jerky safely in addition to the drying process:

1. **Soak the meat in vinegar before drying.** Vinegar is an acid, and it destroys *Salmonella* and *E.coli* pathogens on the meat (it does not destroy *Trichinella* parasites, so this method isn't recommended for game meat like bear and cougar, which could carry the parasite). The *Vinegar Marinade Jerky* recipe included in this article uses the vinegar pasteurization process.
2. **Pre-cook the meat before drying.** Meat can be pre-cooked by baking in the oven or by dipping in hot brine. Either way, the meat needs to reach an internal temperature of 160°F to destroy pathogens. The *Hot Pickle Cure Jerky* recipe in this article uses the pre-cook method by dipping in hot brine.
3. **Heat the meat after drying.** Placing dried meat strips on a cookie sheet in a 275°F oven for 10 minutes will also kill pathogens.

Series of events can create foodborne disease outbreak

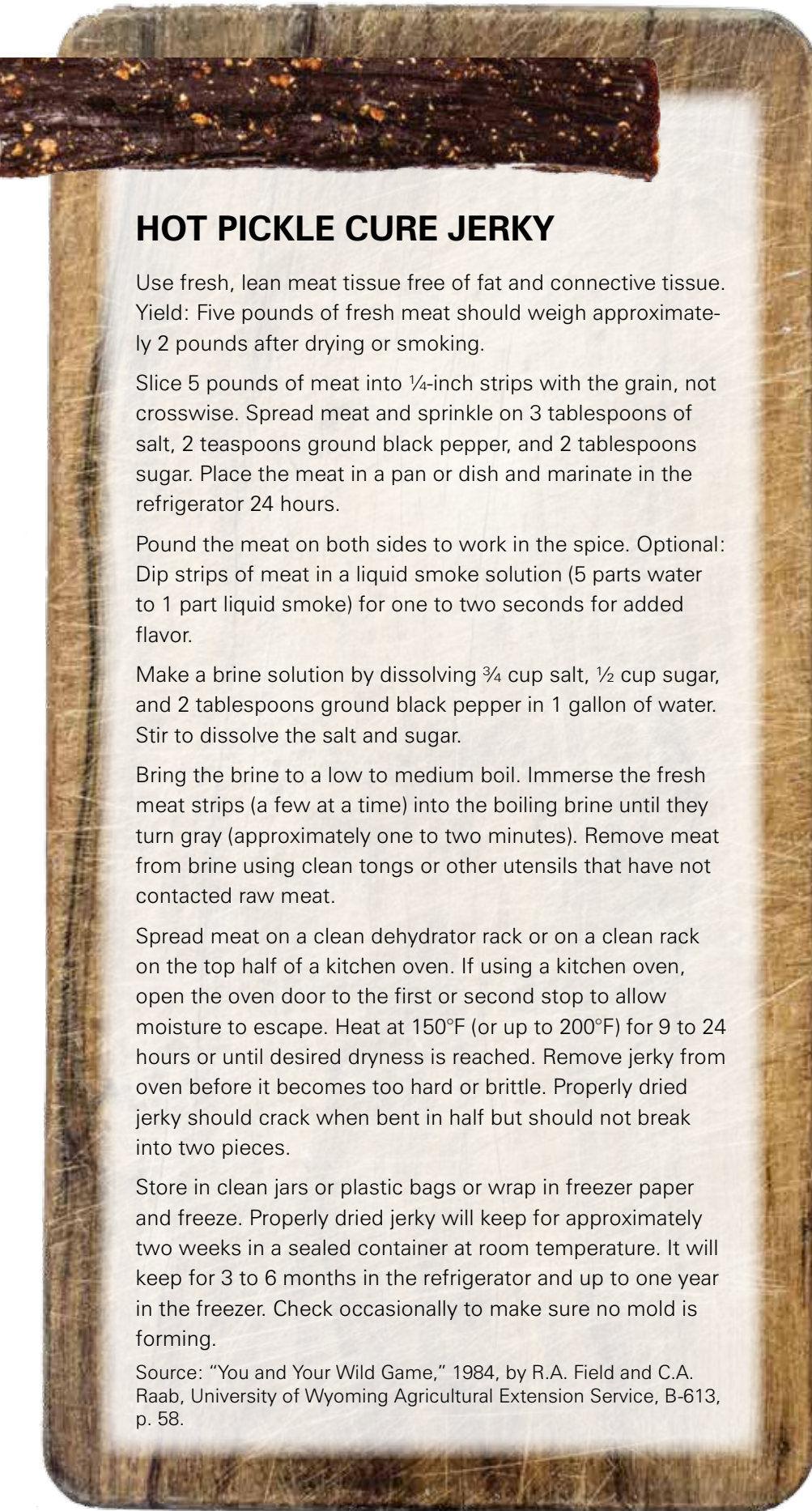
Food safety measures are important to make sure jerky is safe to consume, as with any food.

Several foodborne disease outbreaks involving jerky have occurred since the mid-1990s with *Salmonella* and *E.coli*. the most common pathogens, as was the *Trichinella* parasite.

A series of events must occur to have an outbreak:

- The meat source must be contaminated with a pathogenic organism.
- The meat product is usually handled/treated in a manner that promotes pathogen growth.
- A susceptible individual consumes the product.

Do NOT reduce the amount of salt specified in the recipes! You may think your jerky is too salty, but salt acts as an antimicrobial ingredient and is needed to inhibit microbial growth during drying. Decreasing the amount of salt upsets this balance.



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HOT PICKLE CURE JERKY

Use fresh, lean meat tissue free of fat and connective tissue. Yield: Five pounds of fresh meat should weigh approximately 2 pounds after drying or smoking.

Slice 5 pounds of meat into ¼-inch strips with the grain, not crosswise. Spread meat and sprinkle on 3 tablespoons of salt, 2 teaspoons ground black pepper, and 2 tablespoons sugar. Place the meat in a pan or dish and marinate in the refrigerator 24 hours.

Pound the meat on both sides to work in the spice. Optional: Dip strips of meat in a liquid smoke solution (5 parts water to 1 part liquid smoke) for one to two seconds for added flavor.

Make a brine solution by dissolving ¾ cup salt, ½ cup sugar, and 2 tablespoons ground black pepper in 1 gallon of water. Stir to dissolve the salt and sugar.

Bring the brine to a low to medium boil. Immerse the fresh meat strips (a few at a time) into the boiling brine until they turn gray (approximately one to two minutes). Remove meat from brine using clean tongs or other utensils that have not contacted raw meat.

Spread meat on a clean dehydrator rack or on a clean rack on the top half of a kitchen oven. If using a kitchen oven, open the oven door to the first or second stop to allow moisture to escape. Heat at 150°F (or up to 200°F) for 9 to 24 hours or until desired dryness is reached. Remove jerky from oven before it becomes too hard or brittle. Properly dried jerky should crack when bent in half but should not break into two pieces.

Store in clean jars or plastic bags or wrap in freezer paper and freeze. Properly dried jerky will keep for approximately two weeks in a sealed container at room temperature. It will keep for 3 to 6 months in the refrigerator and up to one year in the freezer. Check occasionally to make sure no mold is forming.

Source: "You and Your Wild Game," 1984, by R.A. Field and C.A. Raab, University of Wyoming Agricultural Extension Service, B-613, p. 58.

How to Make Jerky

Jerky can be dried in a dehydrator or in an oven. If using a dehydrator, make sure it has temperature controls so you can maintain a temperature of 145°F to 155°F while the jerky is drying. Pathogens could grow at the beginning of the drying process if the temperature is too low. The dehydrator should also have a fan to distribute air evenly and maintain temperature.

If using a kitchen oven to make jerky, the oven door must be left partially open to allow removal of moisture from the oven as the meat is drying. Place a fan next to the open door to circulate the heat. Be sure to test the oven temperature with a thermometer during this process to ensure it stays between 145°F to 155°F. A negative to using this method is the possibility of someone accidentally bumping the door and causing it to shut – or bumping into the partially open door, falling on it and getting burned. The safest and preferred method is to use a dehydrator that has a built-in fan.

Jerky Nutrition and Recipes

Jerky can be made from almost any lean meat, including beef and wild game. Venison, antelope, and elk make great jerky. Use any cut of game meat, but the best jerky usually comes from flank, loin, or round.

One nutritional benefit of eating wild game is that it is leaner than beef. A serving of wild game contains fewer calories, slightly more protein, and less fat than beef. For example, beef roast has 113 calories and 4.8 grams of fat in a 3-ounce serving, while antelope has 97 calories and 1.7 grams of fat.

The nutrition facts for the Vinegar Marinade Jerky were calculated with

deer meat and will vary depending on the type of game meat. Half of the marinade is estimated to be absorbed and half would be discarded.

Use good practices and approved, tested recipes such as the ones in this article. Following these steps will help avoid that hunter's dilemma of what to do with extra game meat and will allow you to safely enjoy eating (and sharing) jerky until you are ready to make another batch next hunting season.

Acknowledgements

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For more information

- Our sources:
- <http://www.jerky.com/history-of-jerky>

- "Making safe jerky at home: The Basics." *Barnyards & Backyards* magazine, Winter 2007, pages 8, 9, 10, by Warrie Means, UW Extension meats specialist, and Suzy Pelican, former UW Extension food and nutrition specialist.
- Fundamentals of Consumer Food Safety and Preservation: *Master Handbook*, 2015. Colorado State University Extension and Washington State University Extension.

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VINEGAR MARINADE JERKY

Ingredients per 2 pounds of lean meat slices:

Pre-treatment dip:

2 cups vinegar

Marinade ingredients:

¼ cup soy sauce

¼ teaspoon garlic powder

1 tablespoon Worcestershire sauce

½ teaspoon onion powder

¼ teaspoon black pepper

1 teaspoon hickory smoked salt

Directions:

Place 2 cups vinegar in 9×11-inch cake pan or plastic storage container. Add meat strips to container, making sure vinegar covers all strips. Let soak 10 minutes, stirring occasionally to ensure distribution of vinegar on strips. Combine all marinade ingredients and place in a 1-gallon resealable plastic bag. Add lean meat slices to bag; seal bag and massage pieces to thoroughly distribute marinade over all meat strips. Refrigerate bag 1 to 24 hours. Remove meat slices from bag and place flat without touching each other on clean dehydrator trays, oven racks, or other drying trays. Place trays in preheated dehydrator and dry at 145° F for 10 to 14 hours or until slices are adequately dry.

Source: "So Easy to Preserve," 5th ed. 2014. Bulletin 989, Cooperative Extension Service, The University of Georgia, Athens. Revised by Elizabeth L. Andress, Ph.D., and Judy A. Harrison, Ph.D., Extension Foods Specialists.

We don't have the Good Housekeeping Seal of Approval, but we can say "Author Tested, Author Approved." **Laura Balis** and **Phyllis Lewis** are University of Wyoming Extension nutrition and food safety educators. Balis, based in Fremont County, can be reached at (307) 332-2363 or lbalis@uwyo.edu. Lewis is based in Washakie County and can be contacted at (307) 347-3431 or pblewis@uwyo.edu.