

Safe Handling of Wild Game Meats

ABIDE BY GAME REGULATIONS FOR HUNTING,
TRANSPORTING AND STORING GAME.

Care in the Field

Be Prepared for the Hunt: Remember to bring a sharp hunting knife, a small hatchet, a whetstone or steel, about 12 feet of light rope or nylon cord, plastic bags, and clean cloths or paper towels. Other essentials include proper clothing, binoculars, a canteen of fresh water, a compass, a map and matches. In warm weather you may want to bring a can of ground pepper and some cheesecloth. The carcass may be sprinkled with pepper and covered with cheesecloth to repel flies.

Video: To see video instructions, request *White-Tail Deer: Field Care and Handling*, Tape 7780 from PSA Publications, Clemson University at <http://dprod4.clemson.edu/olos/asp/showCart.asp>

Note: As of September 2006 there has been no evidence of Chronic Wasting Disease (CWD) in South Carolina white-tailed deer. For information on continued surveillance by the S.C. Department of Natural Resources see <http://www.dnr.sc.gov/news/Yr2006/sept11/sept11waste.html>.

Bleeding the Animal: Usually it is not necessary to bleed the animal, because the bullet or arrow has caused enough damage to the animal to bleed it sufficiently. However, if the animal is shot in the head it will need to be bled. If you think the deer needs additional bleeding, field dress the deer, then cut the main artery next to the backbone.

If the animal is a trophy buck that you plan to mount, do not sever its throat, because this will cause problems during mounting."

Field Dressing: There are three major rules to follow as soon as the animal is dead.

- Remove the intestines, lungs, liver and heart as soon after the kill as possible.
- Keep the carcass clean by getting it off the ground as quickly as possible and by using clean utensils during dressing.
- Cool the carcass quickly and keep it cool during processing and transport.

When field dressing an animal, plastic surgical gloves are recommended. Clean your hunting knife often with clean water and a cloth to prevent contamination of the meat.

1. Place the animal on its back with the front-end elevated and spread the hind legs. Support the carcass in position by placing rocks or sticks on each side.
2. Cut along the midline of the belly from the breastbone to the anus. Avoid cutting into the paunch and intestines by using the handle of the knife and the heel of your hand to crowd the guts away. Cut around the anus, loosening the bung so it will come out with the guts.
3. Cut the diaphragm (the thin sheet of muscle and connective tissue between the chest and the abdomen) free from the rib cage by cutting through the white tissue near the rib cage.
4. Reach forward to cut the windpipe, gullet and blood vessels at the base of the throat.
5. Pull the lungs, heart and guts out of the animal. If you like variety meats, save the heart and liver in a plastic bag and put on ice.

Hanging to Drain and Clean: Put the carcass on logs or rocks if it cannot be hung.

- Remove all foreign particles and loose hair.
- Wipe out excess blood in gutted cavity with a paper towel or clean cloth and clean water.
- Use as little water as possible, because damp meat spoils faster than dry meat.
- Dry with paper towels or clean rags. Prop the cavity open with sharpened sticks and hang the carcass in the shade until the cavity surface is thoroughly dry. Be sure there is good air circulation.
- Do not use grass or snow to wipe out the carcass, because this may contaminate the carcass.

Chilling: Improper temperature is meat's worst enemy. The surface of the carcass may be contaminated with bacteria that can spoil the meat unless chilling stops the growth. During warm hunting seasons special care should be taken to keep the carcass cool. It should be kept in the shade and allowed as much air circulation as possible.

- Refrigerate the deer carcass as soon as possible for best quality. If the weather is over 40 °F, it is strongly recommended that the carcass be taken to a cooler the day of the kill. If the air temperature is above 50 °F as it often is in South Carolina, the deer carcass should be refrigerated within three to four hours after killing.
- Cool the animal quickly. Cool the carcass by propping the chest open with a clean stick and allowing air to circulate. Filling the cavity with bags of ice will also enhance cooling.
- To aid cooling in warm weather, the animal may be skinned if you have provisions to keep the carcass clean. Use ground pepper and cheesecloth or light cotton bags to protect the skinned carcass from contamination by flies. Do not use airtight game-bags or tarps that hold in heat and will cause meat to spoil rapidly.
- In cool weather (28 to 35 °F), wrap the carcass or quarters in a sheet and hang to chill in a ventilated shed.
- Do not allow the carcass to freeze. Freezing may toughen the meat.

Transporting:

- Keep the carcass cool during transport.
- Do not tie a deer carcass on the hood of the car or in the trunk when it is still warm.
- Be sure to keep the carcass cool until it reaches the locker plant. Keep the carcass out of direct sunlight and allow for adequate air circulation.

Aging Meat: Aging meat is the practice of holding carcasses or cuts of meat at temperatures of 34 to 37 °F for 7 to 14 days to allow the enzymes in the meat to break down some of the complex proteins in the carcass. Aged meat is often more tender and flavorful. Do not age any game carcass if it was shot during warm weather and not chilled rapidly, if the animal was severely stressed prior to the kill, if gunshot areas are extensive, or if the animal was under 1 year of age. Aging is not recommended for carcasses with little or no fat covering because they may dry out during aging, and are more susceptible to deterioration through microbial growth. If the meat will be ground into sausage, aging is unnecessary.

- Leave the hide on and maintain the proper temperature when aging a carcass. Aging game that has been skinned often results in drying and high weight loss. For this reason, properly chilled game should be aged with the hide on unless it is to be aged in a cooler where humidity is high. If you do not have the proper cooler space, spoilage or dehydration may result.
- Do not trim fat from game meat before it is aged because the fat protects the meat. However, fat should be trimmed after aging to avoid undesirable flavors associated with the fat.
- Limit aging to a maximum of two weeks at 34 to 37 °F. At this point tenderization slows down, and bacterial slime develops which then must be trimmed.
- Cold shortening, which causes meat to be tough, occurs if the internal muscle temperature drops to 32 °F within 12 hours after the kill, such as if carcasses under 100 pounds are slaughtered when the temperature is below freezing. Frozen carcasses should be thawed and aged at 34 °F for 14 days.

Cutting: Many freezer locker stores have power saws and capable meat cutters who cut and wrap meat. Some hunters cut their own roasts and have steaks or chops cut by an expert meat cutter. Cutting is not a haphazard operation. For easy cutting, hang the carcass by the hocks or hock tendons. Split lengthwise along the backbone from tail to neck, saw with a meat or carpenter's saw, or chop with a cleaver or hand ax. Keep halves well spread while splitting. Cut between the last two ribs and through the backbone to divide halves into quarters.

The simplest way to cut meat is to remove all flesh from bones following along natural seams of muscles. Loins are removed from the back as they lie between the upright vertebra and down-turned ribs. The long, sausage-shaped piece can then be trimmed of loose tissue and cut into steak-sized pieces (similar to cutting a loaf of bread). On smaller animals, a cut twice the desired size is made, then cut almost in two again, leaving connective tissue enough to fold out the cuts to resemble a butterfly.

Care in the Kitchen

Wild game provides wholesome, nourishing food, but should be preserved carefully to retain quality. Like domestic meat, wild meat is perishable, so care is needed to maintain its quality. Freezing meat is the most accepted way to maintain top quality.

- Keep raw meat and cooked meat separate to prevent cross-contamination.
- Wash your knife, hands and cutting board often with warm, soapy water.
- Trim fat and inedible parts from the carcass when it is cut.
- Mix 15% pork or beef fat with ground game and 35% pork fat with fresh game sausage.

To Store in Refrigerator for Immediate Use:

Wrap the meat in moisture-proof plastic wrap or place in a clean plastic storage bag. Store the meat in the refrigerator and use within 2 or 3 days.

To Freeze Game Properly:

- Freeze meat while it is fresh and in top condition.
- Divide meat into meal-size quantities.
- Prevent "freezer burn" by using good-quality freezer paper. Use moisture/vapor-proof wrap such as heavily waxed freezer

wrap, laminated freezer wrap, heavy-duty aluminum foil or freezer-weight polyethylene bags.

- Press air out of the packages prior to sealing.
- Label packages with contents and date.
- Freeze and store at 0 °F or lower.
- Avoid overloading the freezer. Freeze only the amount that will become solidly frozen within 24 hours.
- Avoid long storage periods. Limit fresh game to eight months frozen storage and seasoned or cured game to four months frozen storage. In most states hunting laws require that all wild game be used before the next hunting season. Check regulations for amount of game you can keep and length of time that you can keep it.

Other methods for preserving game meats include curing and smoking, drying, corning, canning and sausage making. For specific information on how to preserve meat using these methods, see [HGIC 3603, Preserving Game Meats](#).

To Thaw Frozen Meat: Thaw in the refrigerator or microwave oven. Game meat is often high in bacterial content. Thawing at room temperature enhances bacterial growth. Foods thawed in the microwave should be cooked immediately. Refrigerator-thawed meat should be used within one or two days.

Cooking Wild Game

Game animals lead active lives. As a result, their muscles are relatively lean. This makes game meat drier than domestic meat or poultry. Therefore, it is important to use cooking methods that add juiciness and flavor to game meat.

Cooking Tips:

- Trim away fat before cooking if this was not done when the game was cut. Wild game fat tends to become rancid quickly and this contributes to the "game" flavor.
- Add other fats to keep game meat from becoming too dry. Rub a roast with salt pork, butter, margarine, beef suet, bacon fat, vegetable fat, or sweet or sour cream to add moisture, richness and flavor.
- "Lard" your lean game meat by inserting slivers of uncooked salt pork or bacon with

a skewer or ice pick. If you make your own rolled roasts, add beef or pork fat to the inside and outside of the roast before it is tied.

- Baste very lean cuts with additional fat to improve flavor.
- Serve game meat very hot or very cold. Lukewarm game fat has a very greasy taste.

Roasting a Loin or Rib

Trim off all game fat; rub with bacon drippings or similar fat. Season with salt, pepper and desired herbs. Place on a roasting rack in an uncovered pan, bone down. For added flavor, place bacon strips on top of the roast. Baste with additional fat as needed, but do not add water. Roast uncovered at 300 °F. Allow 20 to 25 minutes per pound. Since lean game meat usually cooks faster than beef, use a meat thermometer, if possible. Game meats should be cooked to an internal temperature of 160 to 170 °F.

Broiling Loin and Rib Steaks or Chops: Preheat the broiler to 350 °F. Trim all natural fat from steaks or chops. Rub meat with bacon or similar fat, and season it. Place steaks or chops on the broiler rack with the top surface 3 to 5 inches below the heat source, depending upon the thickness of cut. Leave broiler or oven door open a few inches unless range directions advise otherwise. If meat smokes or spatters, the flame is too high or the meat is too close. Brown meat on each side. A one-inch steak will require about 15 to 20 minutes cooking. Baste with butter and serve at once.

Pan Broiling Loin and Rib Steaks or Chops:

Partially heat a heavy frying pan. Rub the medium-hot pan with suet or a small amount of fat. Cook meat quickly over medium high heat.

Braising Less Tender Cuts (chuck or shoulder, leg or round, breast or plate): Season with salt, pepper, and herbs. Rub with flour. Brown all sides in moderately hot fat. Add a small amount of water (about $\frac{2}{3}$ cup). Cover tightly. Cook very slowly (simmer) until tender (2 to 3 hours). Turn the meat occasionally; adding water, if necessary.

Stewing (shank, neck): Cut the meat into one-inch cubes. Sprinkle with flour and season. Brown on all

sides in medium-hot fat. Cover meat with boiling water. Cover kettle tightly. Simmer until tender (about 2 to 3 hours). Do not boil! Add vegetables just long enough before serving time so they will be tender.

Marinades: Marinades can tenderize, enhance or disguise game flavors to fit your preference. Cover meat with one of the following marinades and allow to stand in the refrigerator at least 24 hours. Broil, roast or braise.

- 2 cups vinegar, 2 cups water, $\frac{1}{2}$ cup sugar
- French dressing, tomato sauce, undiluted tomato soup or tomato juice
- Fruit juice (such as lemon, pineapple or a mixture of many juices)
- $\frac{1}{4}$ cup vinegar, $\frac{1}{2}$ cup cooking oil, $\frac{1}{2}$ teaspoon pepper, $\frac{1}{4}$ teaspoon garlic salt
- 2 cups water; 2 cups vinegar; 1 to 2 tablespoons sugar; 4 bay leaves; 1 teaspoon salt; 12 whole cloves; 1 teaspoon allspice; 3 medium sized onions, sliced
- Garlic salt, salt and pepper to taste and equal parts of: Worcestershire sauce and two of your favorite steak sauces
- 2 tablespoons vinegar, $1\frac{1}{2}$ teaspoons ground ginger, 1 clove garlic minced, 2 tablespoons brown sugar, $\frac{1}{2}$ cup soy sauce, $\frac{3}{4}$ cup vegetable oil
- Commercial marinades
- Milk

Sources:

1. Garden-Robinson, Julie and Martin Marchello. (2003). *From Field to Table...A Pocket Guide to Care and Handling of Deer and Elk* <http://www.ag.ndsu.edu/pubs/yf/foods/ncr525w.htm>
2. Reynolds, A. Estes and James A. Christian. (1995). *Venison from Field to Table: Getting the Most Out of Your Deer.* http://www.birdflumanual.com/resources/Food_Preservation/file/s/venisonUGA04.pdf

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