

## Chilling a hog carcass down in warmer outdoor temperatures

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Hog slaughter is usually done in the fall in West Virginia when temperatures are cooler; however, sometimes situations arise that require an animal to be slaughtered at home when temperatures are not below 40 F. This fact sheet will focus on carcass chilling when an animal is harvested without access to a walk-in cooler.

Good quality end products start with proper animal harvesting and handling to optimize the quality of the pork raw material. To ensure safety when processing animals, you must have the ability to clean and sanitize all areas and processing equipment.

Make sure that cutting surfaces are free of soil and sanitize with a 50 to 100 parts per million chlorine solution. Household bleach may be used to generate this dilute sanitizing solution. It is critical that surfaces are thoroughly cleaned to maximize the sanitizer's efficiency.

Take precautions – wash hands, wear gloves and use an apron to cover clothing. It is also of utmost importance to avoid potential cross contamination between soiled and clean areas. If a carcass area becomes contaminated with digesta or feces during skinning and evisceration, trim the soil away; do not spray with water.

There are several factors that affect the flavor, tenderness and shelf life of a pork product.

- Improper chilling of the carcass: The internal temperatures should be lowered to 40 F to 45 F within 24 hours after slaughter.
- Absorption of off-odors: When the carcass is chilled in an area with any odor (e.g., manure, gasoline, paint or a musty odor), the carcass will absorb it because these odors are fat soluble. You also can pick up fruity and musty flavors if pork is stored with fruit or potatoes.
- Poor sanitation during slaughter, chilling and processing: This contamination with microorganisms causes off-odors, undesirable flavors and spoilage. Most importantly, it may predispose the consumer to foodborne infection. Remember to clean and sanitize and to avoid all potential cross contamination.
- Improper freezing and storage of frozen meat: Packaged meat should be quick-frozen and stored at 0 F to 6 F. Home freezers are for storage of products that have already been frozen, not for quick-freezing large quantities of meat. Small quantities, preferably less than 25 pounds, can be satisfactorily frozen at home by placing meat in the freezer

with at least one inch of space between each package. Do not place a tightly packed box in the freezer; packages in the center of the box will not freeze adequately.

Minimum equipment needs for home slaughter of pork include:

- Meat thermometer
- Stunning device, such as a .22-caliber rifle
- Block and tackle chain hoist or tractor equipped with a hydraulic lift
- 6-inch boning knife and 8-inch butcher knife
- 24- to 26-inch hand meat saw
- Enough pans or buckets for edible meat
- Adequate supply of clean, cold (potable) water

Minimize stress prior to and during stunning. Aim for the intersection of two imaginary lines extending from the right edge of the poll to the left eye and from the left edge of the poll to the right eye.

Next steps are critical to the flavor of the meat. The carcass must be bled, eviscerated and skinned (or scalded) quickly when ambient temperatures are above 40 F. There are many great resources online that go step-by-step on these processes. Once stunned, immediately expose the area in front of the breastbone. Insert the point of the knife approximately 2 inches in front of the breastbone and then, in one motion, angle the knife to a point behind the shoulder. You will hit the vertebral column; in one motion, remove the knife, straightening the hand as you complete this cut.

Next, it's time to focus on chilling. When temperatures are above 40 F, the carcass must be hung in a cooler or packed in ice. Pork, unlike beef, doesn't improve with aging. It will spoil rather quickly even in cool temperatures. Plus, handling a warm carcass is not easy, hog fat is very slippery when not cooled.

When temperatures are warmer, you only have a few hours to get the carcass cooled before you risk spoiling the meat. The following timelines are from evisceration to fabrication:

- 60 F to 70 F: Five to six hours
- 70 F to 80 F: Four to five hours
- 80 F to 90 F: Three to four hours

There is a short time frame between when the carcass is hung and when it will spoil. To aid in cooling the carcass down, you can do several things. If you have access to a refrigerated cooler, this is the best and easiest option. The animal can be hung until the carcass is fully cooled down. If you do not have a walk-in cooler, there are a few options to cool it safely.

- Break down the carcass into wholesale cuts or smaller portions and line clean coolers with ice. Then, pack the meat on the ice lining the coolers. You may consider "hot" deboning of the major muscle groups and chilling these portions. Add more ice on top and cover with salt. The salt will help facilitate quicker cooling. You will need to keep

checking and adding ice as time goes on. Cooling the meat could still take up to 24 hours.

- Break down the carcass and fill food-grade tubs or barrels with cold water and ice. You may also add a bleach solution up to a 50 parts per million dilution.
- If you have access to liquid nitrogen, you can treat the broken-down carcass with it first to quick chill, then put it into the ice slurry.

You will want to check meat temperatures often in thick parts of the carcass; the critical area to test would be the center of the ham at its thickest portion.

After the proper chilling time has been reached, you can dry the meat off and begin further processing it.

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