

At-Home Hog Slaughter

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Related Articles: Pork Carcass Fabrication: Primal and Retail Cuts; Pork Carcass Fabrication: Packaging and Meat Safety

Introduction:

The COVID-19 pandemic has caused supply chain disruptions to nearly every commodity, including the swine industry. This has left many producers searching for alternative strategies to market their livestock and consumers seeking alternative sources for meat. One option that can be considered is butchering pigs at home. Producers with market-ready hogs can sell live pigs to consumers for home slaughtering and processing.

A young, healthy pig — weighing 240 to 300 pounds — is ideal. At this size, the animal will produce cuts and sizes most people want and yield more than half its live weight in hams, shoulders, loins, sausage and bacon.

A note on costs: Generally, consumers pay a set fee to producers for the animal itself and then pay processors fee based on preferred cuts and other processing considerations. Home butchering avoids processing costs, but consumers must consider necessary supplies for butchering and storing meat, as well as the labor involved.

This guidance is intended to instruct on proper techniques that will, if done correctly, result in humane and safe slaughter at home, as well as safe meat products. If not done correctly, this process can pose significant risks to personal safety, animal welfare and meat safety.

Before deciding to slaughter a pig at home, consider your skills in the following areas:

Animal Handling: You should understand humane animal-handling practices and be able to safely restrain the pig or keep it in a small area. If the pig can move around, it is much harder to safely and humanely stun the animal.

Firearms: You should have the necessary skills to safely and accurately handle and fire a gun, ensuring a proper, humane stunning of the animal. Most people prefer to use a .22 caliber rifle when butchering at home.

Knives/Saws: You should have the necessary skills and confidence to sharpen and handle knives and saws. A dull knife poses more danger than a sharp one; dull knives require more pressure to cut, increasing your chances of self-injury.

Patience: You should demonstrate patience and attention to detail in following all necessary steps to safely handle the animal, carcass and meat to reduce the chances of animal-welfare or food-safety issues.

Once you have determined that you have all these necessary skills, conduct an inventory of equipment. Your decision to skin or scald the carcass may mean you won't need some of the listed equipment.

Essential Equipment

- Firearm (.22 caliber rifle), appropriately sighted in the appropriate range, for stunning the pig
- Water source with a hose to clean/spray animal and/or carcass
- Several sharp boning knives with 6-inch blades.

- Strong rope, chain or gambrel
- Tractor or pulley system to hoist the carcass into the air
- Skinning knife or bell scraper
- Bins or coolers to carry and hold the meat
- A place to put the meat to cool. This can be:
 - Four 48-quart or larger coolers with plenty of ice
 - An empty, clean refrigerator.
 - Other storage unit in which the temperature drops below 40°F as fast as possible
- A clean, fine-toothed bone saw or reciprocating saw or hacksaw
- A five- to 10-gallon container for catching blood.
- A 25- to 35-gallon tote/barrel for the collection of eviscerate and inedibles.
- Packaging materials for the meat cuts
- **If Scalding:** A large metal barrel — 55 gal or 250 gal cut in half — or other container to heat water. Note: You will need a significant amount of water.
- **If Scalding:** A source for heating water to ~150°F
- **If Scalding:** Propane tank and a torch to singe hair still attached after scalding.
- Personal protective equipment of gloves, hats and possible plastic serving aprons or garbage bags to keep you clean
- A butcher buddy; for safety reasons, do **NOT** perform home butchering alone.

Once you have gathered the necessary equipment and people to assist, withhold feed from the animal(s) for 12 to 24 hours prior to slaughter. This reduces the chance of fecal contamination

in the carcass and makes gutting much easier. Ensure the animal(s) is still supplied with plenty of clean water at all times.

Throughout the process, food safety must always be in the forefront of your mind. It is critical to clean and sanitize knives, tools and hands as frequently as possible. Use plenty of fresh water to wash and clean the pig carcass before and during the process.

Steps for hog slaughter

Step 1: Check the weather

The cooler the temperature, the quicker the carcass will chill. Start early in the morning and try to avoid exceptionally hot days. If butchering outside, remember that wind can introduce dirt, debris and insects.

(If Scalding) Step 2: Heat the water

If you are scalding the carcass, cleaned metal drums work well. When filling a drum, remember that the carcass will displace a lot of water. You should only fill the drum to half or 2/3 of its capacity. Too much water will cause the drum to overflow and potentially extinguish your fire. If you lack a large-enough container in which to dip the carcass, heat as much water as you can. The water will need to be about 150°F. If you choose to skin the carcass, you do not need as much hot water, but you will need enough to clean your hands and equipment when necessary.

Step 3: Set up your equipment

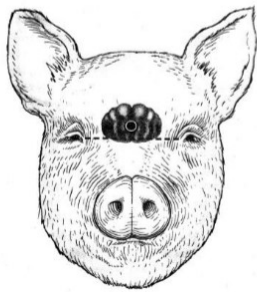
Organization will help the slaughter process go smoothly. Set up your stations in accordance with the slaughter process, and know where your equipment is to help you work efficiently. If you use a tractor and loader to hoist the carcass, clear the loader of loose debris that could fall onto and contaminate the carcass.

Step 4: Move the hog into the area for stunning

This area should be small enough so that the pig cannot run away from you and that you can get a clear, close and accurate shot. A slight incline may be helpful so the blood runs away from your work area during exsanguination. If you have more than one pig, separate them to stun one at a time.

Step 5: Stun the hog

Consider putting a small amount of feed on the ground to entice the pig to stand still. Aim for the brain by drawing an imaginary X from the top of the base of the ear to the opposite eye, or about 1 ½ inches above the eyes in the center of the forehead. The goal is to stun the animal with one shot. Use patience and wait for a clear shot. However, prepare a backup round in case the initial shot does not go as planned. After stunning the animal, check for signs of consciousness. A properly stunned animal will not vocalize or blink when its eye is touched. The head should hang limp, and there should be no rhythmic breathing. After the animal is stunned, the front and back legs are likely to rapidly kick. This is a normal response to the nervous system's disruption and *not* a sign of consciousness.



Position for shooting pigs. AVMA 2016, 2020. Diagram courtesy of Jan Shearer, Iowa State University

Figure 1. Illustration of a pig's head. There is a target mark on the pig's head between the eyes.

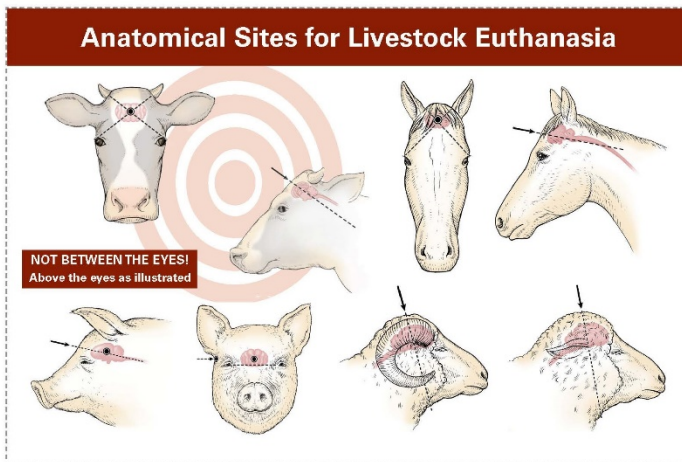


Figure 2. Anatomical locations for livestock euthanasia. Iowa State University

<https://vetmed.iastate.edu/vdpam/about/production-animal-medicine/dairy/dairy-extension/humane-euthanasia>

Step 6: Exsanguinate (bleed the animal)

Exercise caution when exsanguinating — and always be aware of where your knife is — as post-stunning movement can be unpredictable. Roll the animal over so you have access to its underside. Use your fingers to find the sternum bone — between the front legs where the ribs meet. Trace the sternum toward the head to find the sternum's end. Insert your knife behind the sternum with the tip of your knife pointed toward the animal's tail and the sharp side of the blade toward the animal's backbone. The knife should be parallel to the sternum but behind it. Once the knife is fully inserted so that the handle is up to the skin, flick your wrist so the blade is at about a 45-degree angle from where it started and draw the knife back out. If done correctly, the carotid artery is severed and blood should rapidly exit the body. If it does not, reinsert the knife and repeat the motion.



Photos by Dr. Stacy Zuelly, Department of Animal Sciences, Purdue University

Step 7: Hang the carcass

Consider using a tractor to ensure the carcass is completely off the ground. There are two ways to hang a carcass, One is to use a thick rope or chain around the hocks. Exercise caution during this method, as the carcass could slip from the shackles. If using chains/rope, position it behind the dewclaws (closer to the ham). Another option is to use a gambrel. Make an incision parallel to the length of the leg on the inside of each dewclaw to expose the gambrel tendon — a pearly white tendon that runs from the toes to the hock joint. Use caution during this method; if you cut into the tendon, it may snap under the weight of the carcass and cause the carcass to fall. Regardless of your method, rinse the carcass with water and scrub with a bristled brush to maintain a clean process.



(If Scalding, see alternate Step 8): Step 8: Skin the carcass

Skinning a pig is similar to skinning a deer. To avoid as much contamination as possible, designate a “clean” hand — with which to hold your knife — and a “dirty” hand to pull the hide out of the way. Do not switch or confuse these hands. Wash your clean hand if it ever gets

dirty, and do not touch the carcass with your dirty hand. When cutting skin, stab with the sharp side of the blade pointed up and away from the carcass. This will prevent pushing any skin contaminants into the meat. Make cuts around each leg just above the knee or hock joints. You can begin from the front or back legs depending on how the carcass is positioned (hanging or laying down on a clean surface, such as a tarp). Follow the leg to the center of the carcass. Open the skin down the middle of the carcass. **Note:** If the pig was male, you will need to remove the pizzle (penis) at this step. *Consult step 10 for instructions on this.* Once the skin is opened, work from the legs to the center of the body by cutting between skin and fat until all skin is removed. Some people prefer to loosen skin around the hind legs and from the belly, then pull skin off the bottom half of the carcass. While this method can be faster, it increases likelihood of pulling fat off the carcass, which can diminish meat quality. If you do not want to keep the head, you do not need to skin it. Once you have the skin removed down to the head, move on to Step 9.

Skinning Video: <https://www.youtube.com/watch?v=ivBdHcsF83M>

(If Scalding) Alternate Step 8: Scald

A reminder that scalding requires additional equipment and time, and is more challenging to properly complete than skinning. If scalding, lower the carcass into the hot water (145-150°F). Continually move the carcass; if you let it sit at the tank's bottom near the heat source for too long, the meat and skin will cook. After a few minutes, the hair on the underwater portion of the carcass should begin to easily peel off when you grab it. Hoist the carcass out of the water. Then, place it on a sturdy table or stacked pallets or leave it hanging where you can reach it. Scrape against the direction of hair growth, using skinning knives or bell scrapers, to remove as much hair as possible. If the carcass was not white before scraping, it will be when you are done. If the whole carcass did not fit underwater, flip the carcass so it hangs by the front legs and repeat the process. If you do not have a water container big enough to fit the carcass, drape one side of the carcass with old towels and pour the hot water onto the towels. Draping the carcass in fabric can help hold the hot water in place to speed up the process. Let the hot towels sit for a few minutes and scrape as previously described. If you intend to keep the feet, use a hook to pull the toenails and dewclaws off the foot and be sure to remove all hair from between the toes. If scraping becomes difficult at any point, pour more hot water onto the carcass or dip it back into the scalding vat. If necessary, a torch attached to a propane tank can be used to singe off any remaining hair. Do not put the torch too close to the carcass or leave it in one place too long, causing the carcass to burn. Once you are done scraping the carcass, rinse it down and, if you have brushes, use them to ensure all hair has been removed.

Step 9: Remove the head

Stand and face the back of the carcass. Locate the base of the skull and make a cut slightly above the skull that exposes the vertebrae. You can use a saw to sever the backbone or insert your knife between the skull and the first vertebrae to separate the skull from the backbone. Using your knife takes a little bit of skill and patience. The joint is not straight across but rather fits together like an "m". Once the backbone is severed, slowly continue to cut around the head until only the trachea (windpipe) and esophagus are attached. The trachea feels like a rigid structure with cartilage rings. Use your hand to locate the Adam's apple. This is a large, hard

structure where the esophagus and trachea fuse together. Remove the head by cutting through the esophagus and trachea above the Adam's apple (toward the tail). This will make it easier to remove internal organs.

Step 10: Remove the pizzle (barrows only)

If the pig was male, you must remove the penis or "pizzle". Lower the carcass so you can reach the point where the back legs meet. Place your knife where the back legs meet slightly off-center. Using light pressure, cut the skin open and move toward the navel. If you cut exactly down the center, you chance cutting into the pizzle and contaminating the carcass with urine. As you cut, you should see a long white structure of a half-inch to 1 inch in diameter. That is the pizzle. Once you get close to the navel, carefully pull the pizzle toward you and use your knife to cut behind it to separate it from the body wall. Continue this cut down to the navel. Exercise caution to not cut into the body wall or the pizzle and separate the end of the pizzle from the carcass. Then, using the same technique, move toward the tail and separate the pizzle as you go. Once you reach the point between the back legs near the anus, cut the pizzle off the carcass.

Step 11: Evisceration (gutting)

The first step in evisceration is called "bunging." Stand behind the carcass so the tail is close to you. Use your knife to carefully cut around the anus (and vulva if a gilt). Give yourself about a half-inch to 1-inch around the anus to make sure you do not puncture the rectum (or "bung"). You should not cut into the muscles of the ham, but right next to them. Once you have loosened the anus, grab it to move it side to side to continue cutting connective tissues holding the bung in place (see photos below).



Next, move to the belly side of the carcass. Starting where the back legs meet, holding your knife parallel to the length of the carcass, and using light pressure, score the skin from between the back legs to the sternum. Then, holding your knife in the same starting position, slowly open the body cavity. Do not stab into the carcass to prevent puncturing the intestines and bladder. Once you have opened a large enough hole to insert your hand, place your hand holding the knife inside the carcass so the blade is outside the carcass at a 90-degree angle and the handle is inside the carcass and pressed against the inside of the body wall. In one swift motion, open the carcass down to the sternum. It is critical to not remove your hand until you have made the full cut. Opening the carcass with your knife handle inside will prevent you from puncturing any organs and contaminating the carcass. Stopping before you have reached the sternum and trying to start again drastically increases your chances of contamination.

Once you have opened the carcass, use your hands to pull the bung downward and out of the carcass. You can use string or a zip-tie to close off the anus and prevent fecal contamination. Working slowly, continue to pull the organs down, forward and out of the body. You may need a knife to cut ureters or heavy connective tissue. Be careful not to cut the intestines or stomach. When most of the organs are removed, you will see the diaphragm muscle with associated white-colored connective tissue separating digestive organs from the heart and lungs. Using your hand, follow the esophagus — a light pink tube about 1 inch wide — through the diaphragm and separate the esophagus from the trachea. Once you pull the esophagus free, digestive organs should be easily separated from the carcass. Place the organs into a tote or other container.

Next, cut the diaphragm's connective tissue. Use your knife to cut the large vein that runs along the backbone. Place your finger into the vein as a handle and cut between the vein and the backbone toward the head of the carcass. Then, loosen the connective tissue around the heart to remove the heart, lungs and trachea together.

An alternate step at this point: Split the ribcage by sawing the sternum or moving about 1 to ½ inches to the side of the sternum and using a knife to cut the cartilage between the ribs and sternum to open the chest cavity. This may make removing the heart and lungs easier in finishing the evisceration process.

Step 12: Remove leaf fat

The abdominal cavity is lined with a large amount of fat known as “leaf fat.” Use your hand to separate leaf fat from the muscle, exercising caution to not insert your hand under the thin layer of muscle along the belly. Leaf fat can be used to make lard if desired or disposed of with the other organs.

Step 13: Inspect the organs

Take a moment to inspect the organs for any sign of illness or infection. Palpate the lungs for any hard lumps, inspect the liver for signs of parasitic infection (small white lines) or abscesses and cut open the heart. In general, look for anything that appears suspicious. If you want to save the liver, heart or kidneys, separate them from the rest of the organs. Remove the gallbladder from the liver and pop the kidneys by lightly scoring them and peeling back the thin membrane.

Step 14. Split the carcass

Using a knife, cut through the pelvic girdle between the back legs. On a younger carcass, the girdle should easily separate. If you have trouble, use a saw. Next, use a saw to split the sternum down the middle so that only the backbone holds the two sides together. Then, standing and facing the inside of the carcass, use a bone saw or reciprocating saw to split the carcass in half down the backbone. If you have used a gambrel to hang the carcass, leave the last 12 to 15 inches of skin connected near the shoulders to make sure the gambrel stays balanced. If you used chains or ropes to hang the back legs independently, you may completely separate the sides.

Step 15. Inspect the carcass

Examine the carcass for any signs of contamination (e.g., dirt, hair, fecal matter, ingesta from a punctured intestine). Trim any such contamination off the carcass to reduce chances of food borne illness such as *Salmonella*, *E. Coli* or other illnesses. Many harmful bacteria thrive in fecal matter.

Step 16. Rinse the carcass

Before the slaughter process, prepare 2.5 gallons of a 2% acetic acid wash solution. Acetic acid is the acid found in white vinegar. Consult the bottle to determine the percentage of acid; most bottles are 5%. Mix 1 gallon of white vinegar and 1.5 gallons of tap water (or a 1 to 1.5 ratio of vinegar to water for other volumes). Using hot water (150°F) if possible, first spray the carcass down — beginning at the hind legs and working toward the front legs. Allow the carcass to drip for a few minutes. Using a clean, new spray bottle or garden sprayer, spray the carcass liberally with the 2% acetic acid wash to help inhibit bacterial growth.

Step 17. Cool the carcass

If you have access to a large, cold room or cooler that will fit entire carcasses or sides, set the temperature between 33 and 38°F, place the side inside and the slaughter process is over.

If you do not have access to those facilities, the carcass must be fabricated (cut) into manageable pieces for placement in refrigerators or coolers with plenty of ice. Plan on approximately one cubic foot of refrigerator or freezer space for every 20 pounds of meat. A milk-crate interior is slightly more than a cubic foot. For a hog, you will need 6 to 7 cubic feet of cooling and, ultimately, freezer space.

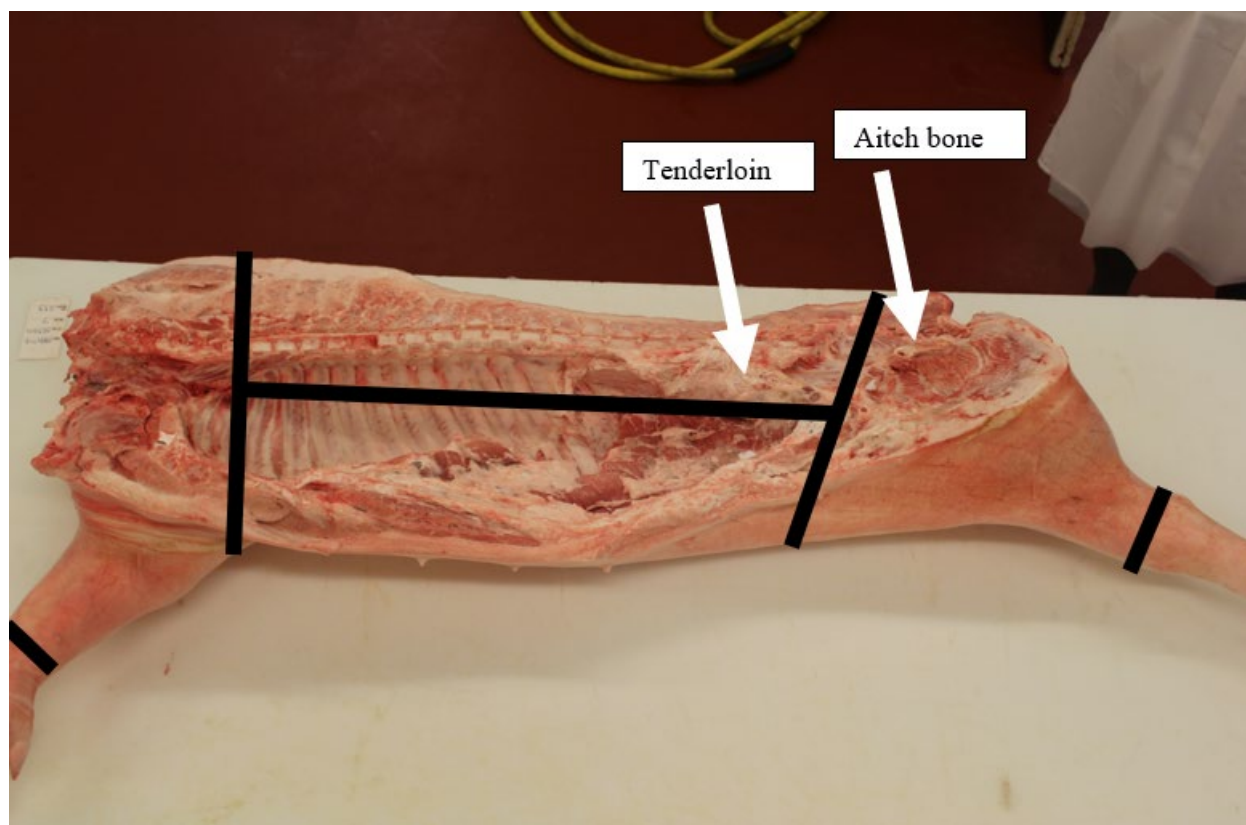
Use the figure below as a guide to help you make these cuts. Lay the carcass skin-side down on a clean surface. If you do not wish to keep the feet, they can be cut off using a saw above the knee or hock joint of each leg. Then, locate the second rib counting from the anterior end (closest to the head). Using a saw, cut through the backbone and sternum between the second and third ribs. You also will have to saw through the shoulder blade, which lays below the backbone. Once you have cut through the bones, you can finish removing the shoulder with a clean boning knife.

Next, locate the aitch bone, which is a teardrop shaped bone at the ham. Using a saw, make a cut perpendicular to the length of the back leg about 2 inches toward the head from the aitch bone. You will cut through the last few vertebrae and the pelvic bone. Again: Once you have cut through the bones, finish the cut with the boning knife.

Finally, separate the belly from the loin. Start by looking at the end from which the ham was removed. Locate the tenderloin, a small round muscle that sits just under the backbone. At the ham end, make a mark at the edge of the tenderloin. Then, on the shoulder end of the loin, locate a spot about 1 to 2 inches toward the belly from where the ribs meet the backbone and make a mark. Then, return to the ham end. Using a knife, cut toward the mark you made on the shoulder end. You should get about halfway through the cut before reaching the ribs. Then, use a saw to cut through the ribs and finish the cut with a knife.

You should now have four manageable pieces of a pork carcass to cool per side. Do the same thing to the other side, then wrap each piece in plastic wrap and place into iced-down coolers for 24 hours. Be cautious to not over-pack the coolers with meat. Leave space around each cut for ice to ensure proper cooling. Use approximately 3 to 4 inches of ice on the bottom and then spread around the pork cuts.

Black lines on the figure below indicate locations to cut the carcass into prime cuts for chilling.



Step 18. Disposal of inedible by-products

You must properly dispose of the organs, hide, head, feet, or trim (offal) you removed from the carcass. There are several options. In Indiana, offal disposal guideline is burial at a depth of 4 feet from the top of the offal — or a hole that is 5 feet deep (IC 15-17-11). Above-ground burial is another option, involving a 20- to 24-inch-deep hole filled with approximately 12 inches of a carbon source (e.g., wood chips, straw, corn stalks, pine shavings). This will soak up fluids and enhance composting. Offal and bones are placed atop the carbon source, with the removed soil placed atop the offal to finish above-ground burial.

Other options, if they are available:

1. An animal compost/disposal pit that meets approved standards.
2. Thorough and complete incineration according to the standards established by an appropriate governmental agency (dead animal incinerator). A large fire or fire pit does **NOT** qualify.
3. Local landfills (which may allow animal disposal for a fee).

Above Ground Burial Design



From the Draft Standard Operating Procedure (SOP) for the Use of Above Ground Burial to Manage Catastrophic Livestock Mortality; April 24, 2020

Step 19. Packaging the meat

Breaking down the carcass, and packaging the meat will be covered in detail in a subsequent publication. However, here are a few key points to keep in mind before placing retail cuts in a freezer.

Oxygen in the package can hasten many foods' chemical breakdown and microbial spoilage. Freezer burn occurs when the surface of meat becomes dehydrated then the fat oxidizes. The result is dry, grey spots on meat that has an off-flavor. Using proper paper and wrapping techniques are critical to enjoying the fruits of your labor for months to come. Vacuum packaging with home vacuum packagers is also a good choice to reduce freezer burn.

Here are some tips to package meat for freezing:

- When packaging, remove as many bones as possible. They take up freezer space and add air spaces where oxidation can occur.
- Place two layers of freezer paper between slices or patties of meat, so they are easier to separate when frozen.
- Freezer containers can be used for ground pork, stew or cubed meat or other meats frozen into small portions.
- Label and date all packages.

Video on packing meat.

<https://agriflifeextension.tamu.edu/blog/2016/09/30/meat-packaging-8-steps/>

Wrapping meat and vacuum sealing:

<https://www.youtube.com/watch?v=reVlrkQ-rl4&feature=youtu.be>

Step 20. Food safety considerations for the final product

Properly handled food stored in a freezer at 0°F (-18°C) will always be safe as long as it hasn't thawed. The food is safe because the bacteria has entered a dormant stage. For best quality, store frozen raw ground meats for no more than 3 to 4 months and cooked meats for 2 to 3 months. Storage for a long period of time is not dangerous, but flavors and textures can deteriorate. For this reason, write dates on the packages before putting them in the freezer.

Initial freezing is most efficient if packages are placed in a single layer on the freezer's lowest shelf. Once frozen, they can then be stacked. Freezing meat will only be safe and effective if the freezer temperature is accurate. Check the freezer temperature frequently with a thermometer.

To measure freezer temperatures:

1. Place the thermometer between frozen food packages.
2. Wait 5 to 8 hours.
3. If the temperature is not 0° to 2°F, adjust the freezer temperature control.
4. Check again after 5 to 8 hours.

For more information on hog slaughter, we suggest: Danforth, A. (2014). *Butchering poultry, rabbit, lamb, goat, pork: the comprehensive photographic guide to humane slaughtering and butchering*. North Adams, MA: Storey Publishing

Although everyone uses slightly different methods and equipment, you may also find helpful these videos showing steps of hog slaughter:

(skinning) <https://www.youtube.com/watch?v=ivBdHcsF83M>

(scalding) <https://www.youtube.com/watch?v=p11Zu-BwL74>