The Process of Preserving Meat by Curing

A dehydrator is a great way to preserve meat for long term storage. Until the power goes out. Maybe you've built a solar dehydrator. Great! But what if you live in a climate where humidity and rainfall make dehydration a real challenge? Stored food will run out eventually; at least for most of us.

No matter how stocked up and well prepared you may be, the time will come when it becomes essential to preserve meat. In a survival situation, a recently killed hog or buck must not be wasted, and cannot be easily preserved. Thousands of years ago, man figured out that salting and smoking meat could retard spoilage and improve flavor. One old-fashioned and time-tested method is the salt barrel. Packed in a barrel of salt, meat will last almost indefinitely. However, salt is a commodity like anything else: unless you have access to an unlimited supply of it, the salt barrel is a very resource intensive method of food preservation. Meat is often salt cured and smoked, but by itself, that is more for flavor than actual preservation. Ironically, the relatively low temperatures at which meat is smoked actually encourages the growth of one very serious pathogen: Botulism.

Unless your post-apocalypse plans include the manufacture of Botox for the beauty-obsessed survivalist, you don't want botulism anywhere near your dinner. Even for modern medicine, Botulism is a dangerous illness. Without expert medical care, it would almost certainly be fatal. Botulism is the body's reaction to a bacterial toxin. Unfortunately, only two things kill the bacterium that produces botulinum toxin: heat and nitrites. Potassium nitrates and nitrites have been used at least since the Romans to safely cure meats. As an Italian butcher in Siena told me: “We've made meat this way since before the Romans got here. I won't say it makes you any smarter, but it keeps you strong.” Potassium Nitrate, or saltpeter, is naturally occurring. Modern curing salts contain Sodium Nitrate, which yields a more consistent result.

Nitrites are the actual curative agents. Nitrates degrade into nitrites over time, which makes Nitrates work better for long-term curing as their breakdown offers continual protection against botulism. If you are concerned about the supposed carcinogenic affect of Nitrites: there are more Nitrites in a serving of spinach than in a whole cured salami. Botulism is a much greater danger.

To effectively preserve meat in a survival situation, you need only have two things: Salt and Sodium Nitrate. With these two ingredients, you can produce an unbelievable variety of cured and preserved meats that are ready for long term storage or immediate consumption, and eaten “raw” or cooked.

In this day of internet access, curing salts are a few clicks away; but curing salts are very susceptible to moisture degradation. This makes them unsuitable for long term storage. Ironic, considering that their only purpose is to preserve meat for storage. Fortunately, curing salt can be easily made with common ingredients. By the end of this article, you will know how to make curing salt, use it in a basic meat cure, and understand the meat-curing process.

You will need:
-Instant Cold packs containing Ammonium nitrate.
-Baking Soda
-A Large Pot
-Coffee Filters
-Clean Water
-Table Salt
-Twine
-Cheesecloth or other light cloth
-Meat: Pork, Beef, Game. Anything but poultry.
-Optional: Sugar, any spices.

To Make Curing Salt:

WORK ON THIS ONLY OUTSIDE. This process will release large quantities of ammonia gas. You will need several instant ice packs, a means of boiling water, baking soda, and table salt. First, you need Sodium Nitrate. Begin by carefully cutting open the cold packs. The pellets inside are Ammonium Nitrate. Do not do this in advance, because ammonium nitrate will draw water from the air. It may be illegal to obtain large quantities of Ammonium Nitrate because of its association with domestic terror plots. That you want it for a purely benign purpose is not necessarily important to the Feds. But there is no law against stocking up on cold packs. Dissolve 5 1/3 Tablespoons of ammonium nitrate pellets into 1/5 of a gallon of water . Filter this through a coffee filter or fine sieve into a pot containing 5 1/2 Tablespoons of baking soda (Sodium Bicarbonate).

Boil this down until its volume is reduced to 1/2 cup. This removes the ammonia. You really do want to be outside for this. After it is reduced, remove from heat and leave it to dehydrate. You will be left with something resembling salt crystals. You may want to dye it with food coloring or natural dye, so that you don't confuse it with regular salt. Sodium nitrite is harmless in small amounts: it is dangerous in the quantity that would be ingested by someone mistaking it for table salt.

Now a calculator may come in handy. To make curing salt, you simply mix table salt with the Sodium Nitrate you have just distilled. You want the mixture to be about 6% Sodium Nitrate and 94% Salt. Nice round number? No. But this is the proper ratio.

To Make a Basic Meat Cure:

Mix ½ pound (1 cup) of table salt with ¼ pound (1/2 cup) sugar and 5 teaspoons of the curing salt. The sugar is more for flavor than preservation; it is not necessary but highly recommended. Brown Sugar may also be used. Also, feel free to use any spices that are available. Obviously, this is not a high priority in a survival situation, but if you happen to have some spices, this is a good place for them. Black Pepper is always good.

The Basic Curing Process

This will work with virtually any meat. Pork is ideal. Fatty cuts of beef will also work well. Just remember: the leaner the meat, the dryer it will be. Duck actually is fantastic cured, but I do not recommend you try to cure poultry. Ever.

Once you have your cure prepared, pour it in a non-metallic container. To minimize waste, it is helpful to put the cure in the pan a little at a time. Prepare the meat by cutting it into a size that is easily handled. Dredge the meat on all sides in the cure. Just enough to coat it. Gently shake off any excess cure. Seal the container and place in a cool, dark place, turning every day or two. When the meat is firm to the touch, not squishy, it is ready for the next step: Dry Curing or Smoking.

First: Thoroughly Rinse the meat. Get all the cure off of it. It has already absorbed the flavor and the salt of the meat. After rinsing, dry it off.

You really have two options here. The first is to smoke the meat. Just hot- or cold smoke the meat until done. This adds flavor and helps to preserve it, but is not as effective for long term storage as dry-curing.

To dry-cure the meat:
Wrap it in cheesecloth. This is to discourage insects. Hang it in a humid, cool environment. 70% humidity and 55 degrees Fahrenheit are ideal. Humidity may be increased by placing a container of salted water near the meat. Somewhat paradoxically, higher humidity actually yields better results. It may slow the curing process a bit, but in the absence of sufficient humidity, the outer surface of the meat will dry and lock moisture in, causing spoilage. A cellar or even an uninhabited cave is an ideal curing chamber. An unused refrigerator will work as well.

Depending on climate conditions, size, and type of meat, this can take anywhere from a week to several months. A ham should be cured for six months; a pork belly or duck breast only needs a week. It is ready when it has reduced its weight by a third, or just feels “cooked.” You may cook the meat after it is cured, or eat it as is. You can store it by leaving it to hang in the curing environment. It should last almost indefinitely, and add flavor and variety to your diet.

Even leaf fat or back fat from a hog may be cured in this way. Especially in cold climates or a situation where high levels of activity must be sustained, cured fat (or lardo, as the Italians call it) can be an excellent source of energy and fat soluble vitamins. There is some evidence to suggest that the chemical structure of the fat is changed by curing: the chains are shortened, rendering a healthier fat.

A little bit of white mold may grow on the outside of your meat. This is not a problem, as it actually prevents harmful molds. If you see green molds, discard the meat. For this reason, it is helpful to practice and produce small batches of cured meat so that if one goes bad, there is always another right behind it. Like any other skill, if you master the process of dry-curing meats now, then you will be prepared and confident if a crisis situation arises. And you can stock up on cured meats just as you would any other food item.

Obviously, no one food solution will work for every situation. I hope that this has provided one more tool in your preparedness arsenal. With a little practice and a little luck, you will be able to cure and store meat in all kinds of survival situations.