

Making Ham – An American Tradition

By Bob Barney

The word "ham" is derived from the Old English "hom" or "hamm" which refer to the hollow or bend of the knee. "Hom" is derived from a Germanic base meaning "crooked" or "bent". It wasn't until later in the 15th century when it referred to the leg of an animal.

The preserving of ham has a long history, *"Meat Fermentation Worldwide: History and Principles"* by Peter Zeuthen, claims that the Chinese were the first people to mention the process of raw cured ham. Peter Zeuthen also points out that Marcus Porcius Cato wrote about the "salting of hams" in "De Agri Cultura" dated about 160 BC. But undoubtedly the making of ham was well established during the age of the Roman Empire. Marcus Terentius Varro in his writings refers to an import trade of cured ham from the Gaul region of France. (reference: *Meat Fermentation Worldwide: History and Principles* by Peter Zeuthen)

The domestication of pigs for use as food in China dates back to about 4900 B.C.. By 1500 B.C. the domestication of pigs had made its way into Europe. According to written records we know that in 1493 Christopher Columbus had eight pigs on board when he left Spain for the new world and landed in Cuba. In 1539 Hernando de Soto the explorer Hernando de Soto transported 13 pigs to the new world and released them in what we know today as Florida. It is believed that these pigs became the breeding stock for the pigs in the United States. By the 17th century, many American colonists were raising domesticated pigs.

The transformation of fresh ham or "green ham" to what most Americans refer to as "ham" requires a curing process to "cure" the fresh pork. The curing and smoking of salt pork, ham, and bacon made these staple items in most colonial kitchens because it extended the shelf-life of these items.

Virginia Ham was one of the first agricultural products exported from North America. The term "Virginia Ham" refers to a style, rather than the location. Virginia Ham is packed in salt and placed in a wooden box to pull water out of the meat and replace the moisture in the cells with salt. This was an early method of food preservation for the colonists.

In 1926 George A. Hormel & Company pioneered the canning of hams in America. Now canned hams are available worldwide and are produced in the United States and many European Countries. Canning of the ham allows the ham to be shipped worldwide without fear of spoilage.

Country ham is first mentioned in print in 1944, referring to a method of curing and smoking done in the rural sections of Virginia, Georgia, Tennessee, Kentucky, and other nearby states.

We have all bought and enjoyed hams from the grocery store. But the quality of a homemade ham will far exceed what you have purchased from the store. Before I explain how to make a homemade ham, I want to cover the issue of food safety.

The primary and most important reason meat is cured is to prevent food poisoning. Any meat or sausage that will be smoked or cooked at low temperatures must be cured to insure food safety. Food exposed to temperatures ranging between 40° - 140°, lack of oxygen, and or high humidity can all trigger the growth of bacteria causing food poisoning. Meat which contains moisture, when smoked at low temperatures below 140°, the smoke and the heat will eliminate oxygen making ideal conditions for food poisoning bacteria to grow.

Curing salts in meats not only prevent food poisoning, but also impede the development of many food spoiling bacteria that can thrive in the low temperature of a smoker. These curing ingredients also extend the self life of the meat, retard rancidity, and provide the characteristic flavor and color associated with specific cured meats.

There has been and always will be debate on the use of nitrites and nitrates in curing meat. Some will argue that only salt it is needed as a curing agent. They argue that mankind has cured meats for centuries without the use of these additives. While this is true, it is impossible to tell how many people in these centuries actually died from food poisoning. Today we have the medical technology to diagnose and treat food borne illnesses as unpleasant and painful as they may be. It is best to take the necessary precautions to avoid these preventable food borne illnesses.

Nitrites and nitrates are perfectly safe when used in the proper quantities. What most people don't realize is that nitrites and nitrates are used to prevent botulism when cold smoking or curing meats, because a smoker or smokehouse full of smoke provides the perfect environment for the formation of botulism toxin. It's better to be safe, rather than sorry, if you intend to cure and smoke your own ham.

Extreme caution must be exercised in using these cures; never use more than the amount called for in the recipe. All curing agents are designed to be used at the rate specified in the formulation or recipe. When used as directed, curing salts are safe for home use.

During the curing stage, always keep meat refrigerated (36° to 40°F). The closer to 40°F, the better; lower temperatures will slow the curing process, and temperatures below 28°F will completely stop the curing process.

It is also important to remember that more is not better because it can be toxic. Nitrates can change normal hemoglobin (the chemical in the blood responsible for oxygen transport) to methemoglobin. Nitrates increase the methemoglobin count, thus reducing the ability of the blood to transport oxygen to cells and organs. Oxygen starvation can lead to a bluish tint of the lips, ears, and nose in slight cases, and severe cases can lead to respiratory problems, heart problems, and even death.

When using these ingredients in elevated levels your curing results will be inconsistent, cured meats may be too salty, the finished products may be unsatisfactory, and nitrite burn may occur.

In this article we are going to use Morton Tender Quick to cure the ham because for the beginner. It is more readily available and easier to measure than other curing agents. Morton Tender Quick IS NOT interchangeable with any other curing salt, DO NOT SUBSTITUTE.

I have chosen to use wet brine here because I think it is easier for the beginner to accomplish the task of curing the ham. Personally, I also think the brine transfers more flavor and the end result is a ham with more moisture.

- 1 Fresh Whole Ham (a shoulder can also be used)
- 4 cups Morton Tender Quick
- 3 Cups Brown Sugar
- 1/4 Cup Dark Molasses
- 1/4 Cup Honey
- 3 Tablespoons of Pickling Spice
- 1 Tablespoon Peppercorns
- 1 Tablespoon Red Pepper Flakes
- 4 Cloves Fresh Garlic - Crushed
- 2 Gallons of water
- 1 Can Frozen Apple Juice Concentrate
- 1 Injecting Needle

I use a 12 or 16 quart stainless steel (non-reactive) stock pot for this task. Simply because everything is done in one pot and the stainless cleans up easily. However you can use a pan to heat and dissolve the ingredients and transfer the liquids to a food safe five gallon bucket if you wish.

Put the empty pot on a burner over low heat and then add pickling spice, red pepper flakes, and peppercorns to pot. Gently heat for about a minute stirring to release the oils in them. Add 1 gallon of water into the pan and bring to a boil. Add Morton Tender Quick while stirring so that all of it is dissolved. Add the brown sugar also stirring until dissolved. Remove from burner, add the molasses and honey and stir well. Add the remaining gallon of water and the apple juice concentrate and chill to 40° Fahrenheit. When the liquid is chilled crush and add the fresh garlic cloves.

Take the injecting needle and inject the brine (10% of the weight of the ham) along the bone of the ham and in the center of the meat between the outside of the ham and the bone. The purpose of injecting the meat is to get the curing ingredients distributed throughout the interior of the meat so that curing can begin on the inside while also curing on the outside. You will get a quicker, more uniform, milder cure without areas

that are under or over cured. Injecting also helps to eliminate bone taint and spoilage around the bone.

Gently put the injected ham into the brine fully submerged, cover, and return to the refrigerator. Let the ham remain in the refrigerated brine for 1.25 days per pound.

After brining is complete, remove the ham from the brine and rinse. Discard the brine and return the ham to the pot. Fill with cold clear water and allow ham to soak in the cold water in the refrigerator for four hours. Drain the water and fill again with cold fresh water and soak for another 4 hours. Drain the water and fill again with cold fresh water and soak for another 4 hours on last time. Remove from water and let sit until the outside of the ham is dry and slightly tacky to the touch.

Move the ham to your smoker and cold smoke below 90° for about 4 hours. I use an A-Maze-N Pellet smoker inserted into my smoke without adding any heat. Once the cold smoking is done remove the ham from the smoker and add a chimney full of glowing orange charcoal and wood chunks to the smoker.

Raise the temperature to 190° F to 200° and continue to smoke until the internal temperature reaches 150°. Quickly cool, tightly wrap, and refrigerate for 1 or 2 days to allow the smoke flavors to migrate throughout the meat. The ham may be sliced and eaten cold, or reheated in an oven and glazed. Remove from oven when the internal temperature is 140°. Loosely tent the ham and let rest 15 minutes before slicing.