

Cold Smoking

Chuckwagon

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Here's a little info for you behind the science of cold smoking. Be careful with the temperatures. You mentioned the ambient temp of 95°F. Read the info below and see why we must keep the cold smoking process below 85°F. Modern facilities use air conditioning with freon of course ... not the ol' "swamp" cooler (evaporation). Or better yet... just hire El DuckO to come over and flap his wings a lot and cool things down. He's really good at "*flapping*" stuff!

Cold Smoking

When do we use "cold smoke"? It's not the choice for a "cured-cooked-smoked" type sausage, although further drying and smoking of a sausage of this type can produce a "semi-dry-cured" product. Cold smoking at 70% to 80% humidity within the temperature range of 18° – 22°C. (66° – 72°F.) is ideal for the smoking of all raw, fermented sausages which are not subject to heat treatment. It should be remembered that cold-smoking is also a "drying" process and in Europe, the upper limit of this procedure never exceeds 22°C. or 72°F.

Sausage makers smoke meat principally for three reasons. To give their product a golden-brown color, take on characteristic smoky flavor, and enhance antibacterial properties, resulting in longer shelf life. As most consumers prefer sausages without mold on the surface, smoking is an age-old favorite process because it impedes the development of mold. However, because mold may develop during the first stages of production, it is recommended that smoking take place early also. And because fermentation takes place at specific temperatures in dry-cured products, it is important that the temperature of the smoke does not interfere with the process of fermentation. On the other hand, it must not be so cold that the proper removal of humidity is inhibited. The ideal conditions will fall within 70% to 80% humidity at the temperature range of 18° – 22°C. (66° – 72°F.). Cold smoking is always performed with thin smoke having good ventilation for the removal of excess moisture. Thick, concentrated smudge can produce bitterness. The process is "off and on" – a delicate "drying while smoking" procedure intermittently discontinued for several hours at a time.

Cold smoking has historically been done during the winter months and smoking at only 52-71° F (12-22° C), from 1 day to two weeks, applying thin smoke with intermittent breaks in between, is one of the oldest preservation methods known. Yet, with high summer temperatures, only relatively recently has it been possible to cold smoke meat during all the months of the year because of modern air-conditioning and refrigeration. Oh, and yes, there's one more terrific benefit of cold smoking. It penetrates deeply inside of the meat. You must watch those temperatures though. Fish starts to cook at 85° F. That means that the beautiful salmon fillet you caught last weekend, begins to cook at only 29.4° C. Clearly, the smoke in your smoker must not exceed this temperature.

Cold smoking also controls the uniform loss of moisture as the product dries. In all areas the total weight loss falls within 5-20% depending largely on the smoking time. Again, it is important to remember that cold-smoking is NOT a continuous process. The smoke (no matter how thin) must be stopped for prolonged periods while fresh air is allowed into the smoker.

“What Are The Differences Between Hot Smoking And Cold Smoking?”

Fish smoked below 80°F. (26°C.) for any length of time (but usually only two to five days) is considered “cold smoked” as it is not cooked, the heat source generally found in a remote location. As the smoke is “piped in”, if the temperature of the smokehouse exceeds 85°F. (29°C.) for even just a few minutes, protein can coagulate and the fish will become cooked in places. At this point, the fish will lose its elasticity. Cold-smoked fish by its very nature must be brined longer in relatively stronger brine containing Cure #1 (with sodium nitrite) or cooked before consumption. Again, the perfect conditions for bacteria growth occur at this temperature range, with plenty of nutrients, and lack of oxygen (smoke). Heavier (70° brine) containing 16% or higher salt content is preferred for safe smoking.

Fish, “hot-smoked” while being cooked, require lighter brine but more heat (90°F. / 32°C.) to complete the cooking process rendering the meat safe from pathogenic bacteria. It may be smoked for hours in lighter smudge at temperatures just above 90°F. (32°C.), being raised gradually to 175°F. (79°C.) until the internal meat temperature registers 145°F. (63°C.), when all fish are considered “done”. Alternatively, the process may only require half-an-hour at 325°F. (163°C.) in heavier smoke. At any rate, hot smoking produces fish with much more fragile texture and shorter shelf life than those finished by cold smoking. To improve the texture of hot smoked fish, it is usually dried at least an hour, while it develops a pellicle. Be aware, the higher the smoking temperature, the more dry-tasting the fish will become. Most fillets are smoked only about four hours. Once smoked and cooked, fish should be cooled quickly then refrigerated for protection.

Best Wishes,
Chuckwagon