



# HARVEST *Journal*



## On the Natural Fermentation of Salami And its Ordering to Natural Delight

Salami is fermented meat. For me, it has always held the allure of being the ultimate expression of the bounty of our domestic food production. It is like a prosciutto in that seasoning it with spices and herbs would actually diminish its flavor rather than enhance it. The excellence in the art of curing is in tasting the pig and its rootedness in the earth outside my door. Therefore, salt is employed not as a seasoning, but as a means to allow the pork to speak for itself.

Ham requires salt to help it dry without spoiling. Salami similarly requires salt to help it dry, but also to instigate another preservative function. The salami must ferment.

Salubrious bacteria must consume sugar and produce acid within the salami. Without this, the wrong bacteria can proliferate and produce toxins. In the effort to avoid this, our wonted puritanical zeal in the United States compels us to add nitrite, nitrate, sugar, lactic bacteria, and sometimes even ascorbic acid to salami, and then we might even radiate it as a “kill step” to ensure that everything, including subtlety, is dead.



This results in a narrow flavor spectrum that ranges from sour to super tangy. This hovering on the low end of the pH scale has simplified salami flavor to such a degree that it is easily replicable from batch to batch.

Inevitably, this eliminates the possibility for salami to be unique. What was the variable expression of the bacteria inhabiting the cracks in the butcher's hands, the molds in his cellar and the quality of fat in his pork is now a very safe and sour sausage that causes cold sores if eaten to excess.

This is not how it has to be. In the domestic kitchen, that throne of humble delight in porcine abundance, it is possible to make salami with flavors literally unique to your home, provided you aren't too heavy handed with the bleach.



Salami can ferment successfully without added bacteria, sugar, nitrite or nitrate. The meat of a scalded and scraped pig, your unsterilized cutting surface and your healthy, ungloved hands will



contribute sufficient bacteria to ferment the meat. This bacteria is not just your personal bouquet shaped by countless variables. It creates a polyphony of flavor.

There are more bacteria fermenting this kind of salami than have been described and studied in a lab. The starter cultures commonly purchased for the making of salami represent a small section of the caviling beasts populating meat. They are the few we know to be adept at eating sugar and producing acid. We also know that acid prevents the proliferation of clostridial bad guys, so we inoculate salami with starter cultures so that they dominate all available nutrients and create a reliably sour flavor.

Without this unnatural injection of acidifying bacteria, there is more room for other bacteria to contribute notes to the symphony of flavors and textures. These are staphylococcus and kecuria strands and many more malolactic bacteria responsible for buttery and cheesy flavors. This results in a milder salami that holds up under repeated slices without such tongue scalding acidity.



As much as the sheer diversity of bacteria mellows the sour flavor, so does the absence of added sugar. The native supply of sugar in the meat is enough. The salubrious bacteria can metabolize it, creating acid sufficient to discourage the bad bacteria, but humble enough to get out of the way when it is time eat.



It is easy to cure salami at home. Bone-out the shoulder of a home-reared pig; grind the meat on a  $\frac{1}{4}$ " plate; weigh the salt to come to 2.5% the weight of the meat; pour in some wine; mix thoroughly so that no wine is standing in the tub and all the salt is distributed; stuff into beef middles and hang in 70f or warmer for 24 hours; move the salami to a chamber 55f and 75%-90% humidity; wait four to six months; eat.

None of this tricky. And yet, I have lost many batches of salami. The reason for this is my own stubborn prejudice against curing chambers. I have eschewed them out of the desire for a truly regional salami. How can I make a pacific northwest salami in an artificial chamber mimicking the climate of southern Italy?

Fortunately, I realized recently that the virtue is in the mean. One is not forced to cure all salami in a chamber, nor is any progress made towards a pacific northwest salami by excommunicating curing chambers and any mention of curing chambers. For a curing chamber is in fact not a sin.

But neither would I presume to call chamber-cured salami an undiluted expression of terroir. What I can do, however, is reassert the final cause of salami, clarifying why one ought to make salami at all. Once the ends are explicit, then the means can fall in line. In this case, the goal is to eat delicious and nutritious salami.

Ergo, I will cure salami as often as the pig is harvested, hanging most of it in the curing chamber and some in the shop.

The few links I hang in the shop are tenuous. If the harvest is timed to coincide with a prolonged spell of weather that mimics a curing chamber, then the salami turns out perfectly. If it doesn't, it is because the humidity in the pacific northwest is inconsistent. We can enjoy several days at 80% humidity or higher, but then a break in the clouds dries out the air, dropping the humidity to 20% for a few days.

This results in case hardening, indicating that the salami isn't fermenting properly. When you cut into a link, you will see a dark ring of dry meat just under the casing, while the meat in the middle still looks raw. Absent the artificial hedge against botulism that is nitrate/nitrite, a natural salami relies only on good bacteria to out-complete clostridium botulinum. One of the advantages the good bacteria has over the bad is that it doesn't need a lot of free water to proliferate. Therefore, if water is sealed in the salami through case hardening, there is no guarantee that the bad guys are losing the battle for nutrients. Case hardening, therefore, precipitates relegation to the garbage.

I don't mean to boast (except just a little), but this is how salami should look. Note the absence of case hardening and the even dryness throughout:





Usually, a failed salami manifests more than just case hardening. Seeing as that all bacteria occurs in an ecology, when one condition is not met, the entire system begins to fall apart. Therefore, bad salami often stinks when you cut into it. I also may not have the proper vacuum sealed appearance. A properly dried salami will shrink in diameter significantly, such that the casing clings closely to the contours of the meat and fat, giving the salami a bumpy surface. A bad salami will be almost as plump as the day you stuffed it, indicating insufficient drying.

Technically, botulism is undetectable. Meaning, the toxin is so potent that amounts too small to taste or smell can be deadly. But the toxin is a product of the bacteria and the bacteria requires available water (insufficient dryness) and a high pH (low acidity). Fortunately, those factors have such a decisive textural and aromatic effect on the salami that they are hard to miss.

This may sound like a long list of possible defects in salami, but it really boils down to one thing: humidity control. The controlled drying of the salami is the solution to case hardening and consequently, all the skunky, squishy and harmful results of water retention.



Put positively, age your salami in a controlled environment and you can make salami without nitrite/nitrate or starter culture to your heart's content.



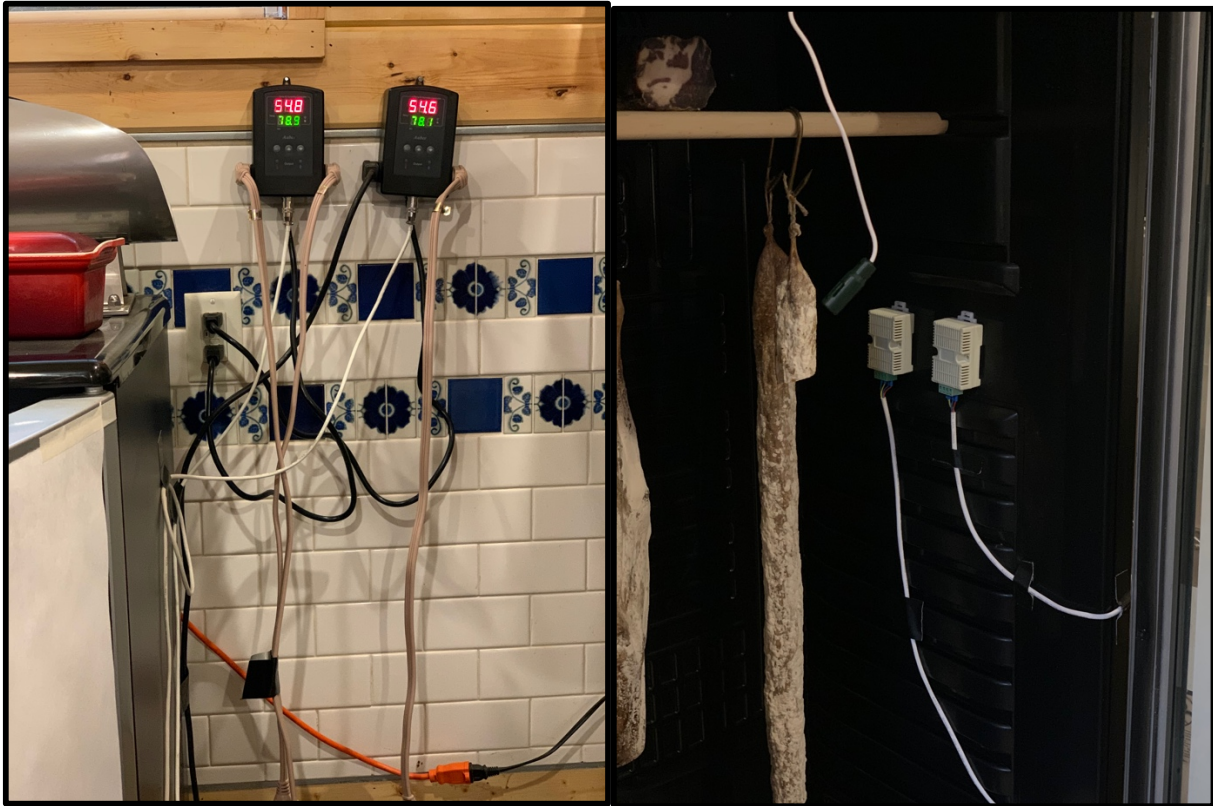
If you would like to make salami regardless of the season, then you will need to control temperature and humidity with four functions: heating, cooling, humidifying and dehumidifying. If you decide to make salami in the summer and early fall, then you may only require two functions: cooling and humidifying. My shop is minimally insulated, so when it is 16f outside, it is about that in the shop. Consequently, I have a small heater in my chamber and for those long seasons when the hygrometer incomprehensibly reads 100% humidity in the shop, I have a dehumidifier in the chamber.

Salami likes 75%-90% humidity and temperature between 50f and 60f. To achieve this throughout the year, put a small humidifier, dehumidifier and heater inside a wine cooler.



Heating, humidifying, cooling and dehumidifying requires two controllers, each with two functions. Auber Instruments makes my controllers. They have the added functionality of WiFi connectivity, so I can change settings, monitor temperature and humidity, set alarms to trigger if the humidifier runs dry and access data logs all on my phone. It is also much easier to program the controllers through the AuberSmart application.





It takes minutes to plug the humidifier and heater into one controller, mount it to the wall, then plug it into a standard outlet. Plug the fridge and dehumidifier into the other controller and then into the wall outlet. Mount the sensors from both controllers to the inside of the chamber. Then finish by setting the temperature and humidity parameters through the app.

My controllers read the humidity differently by .7%, but this is not enough for me to spend time calibrating them.

My wine cooler showed up for free on a local market place Facebook group and I ordered the smallest humidifier, dehumidifier and heater I could find on Amazon.com.





It is certainly not flattering to think of myself curing salami from an iPhone. Given that the kind of salami I have described comes from the Mediterranean, any pacific northwest salami I make would be a different recipe altogether. The first and most indispensable step in the recipe would be: kill your pig on an island in the Puget Sound in the fall...

As I continue to tease out the pacific northwest salami, it becomes clear that it will be more like a summer sausage than an Italian salami. Rather than hope for prolonged periods of perfect humidity, the sausage would be slowly hot-smoked in the winter and then left to hang through a pacific northwest spring to be eaten in the summer.

In the meantime, I will happily swallow my pride with a little Italian salami.

Brandon Sheard  
Feast of Saint Charles Borromeo, 2019

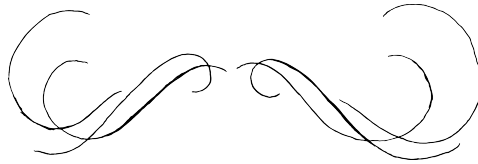


End Notes:

[www.auberins.com](http://www.auberins.com)

The controllers:

[https://www.auberins.com/index.php?main\\_page=product\\_info&cPath=37&products\\_id=880](https://www.auberins.com/index.php?main_page=product_info&cPath=37&products_id=880)



## Harvest Journal

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