

## **BASIC SAUSAGE TECHNIQUE**

### **Sausage – (old French) saussiche – salsus (latin) meaning salted**

Fresh sausage means meat ground with seasonings, cooked, and eaten usually hot. Sausages can be stuffed into casing or shaped into a patty. It's not much more complicated than that, but even with fresh sausage, a few issues of technique must be respected in order to achieve a great sausage.

## **TOOLS FOR SAUSAGE MAKING**

Digital Scale -

Meat professional grinder is recommended – body, worm, blade, die or plates, collar. Food processor can also be used for limited quantities.

Sausage stuffer

Sausage casings

Instant-read thermometer

## **INGREDIENTS FOR MAKING LAMB SAUSAGE**

- American Lamb: Shoulder is marbled and inexpensive, and thus the perfect cut for sausage making. General ratio is 70% meat and 30% fat or 75% to 25%. Lamb is about 80% lean to fat. Aside from shoulder another good choice would be leg meat mixed with belly trim or neck meat.
- BACK FAT (OR FATBACK): The layer of fat from the pig's back, usually the purest white and thickest fat on the pig's body. For use in sausages and pâtés, make sure it is fresh back fat, not salted back fat. Pork fat is optional but is used in many sausages to add a smooth texture.

## **Sausage Curing Salts**

- PINK SALT: A curing salt is a combination of iodized salt and sodium nitrite used for sausages and other meats. It goes by many names depending on the company selling it (Prague Powder #1 or Insta Cure #1, DQ Curing Salt, tinted cure mix or TCM). Regardless of what it's called, it is salt with 6.25 percent sodium nitrite added, and it is tinted pink to prevent accidental ingestion. Curing salts are used to reduce the spoilage caused by harmful bacteria and to enhance the flavor of the meat. (1)
- DQ CURING SALT #2 AND INSTA CURE #2: This pink salt with nitrate is used only for sausages that are dried for many days or weeks, saucisson sec or salami. Nitrate converts to nitrite over time, acting like a time-release cold capsule, to prevent the growth of the bacterium that causes botulism. The same warnings that apply to pink salt apply to this curing salt as well. (1)

## **Salt**

Seasoning any meat in advance almost always improves it, and salting early also encourages a uniform distribution of the seasonings. Salting pork ahead of time is especially effective, no matter what cut or what you're using it for. Kosher salt is the most important seasoning in your kitchen, and in any sausage. There are some people who will not salt their sausage meat until after grinding. Everyone has their own opinion.

As a rule, use **1.75 percent of the weight of the meat and fat**.

To determine, multiply the weight of the meat by .0175 (1.75 percent) to determine how much salt to add. For 5 pounds of meat, requiring 1 1/2 ounces/ 40 grams of salt (about 3 tablespoons Morton's kosher salt, a smidge over 1.75 percent. Remember that salt tolerances differ. Start with this ratio, and add or scale back according to your tastes. (Remember, too, that different brands of salt have different densities, so be careful if you're measuring salt by volume rather than by weight). (2)

## **Seasonings**

Use fresh ingredients. Whole dried spices are best and ground to order. Fresh herbs will give a brighter flavor (blanching herbs will extend shelf life of sausage). Fresh garlic and ginger is better than dried. Also, it is best to combine all of your seasonings and mix with a little liquid to make slurry. Then add this slurry to your meat. This will help ensure consistent flavor.

If you like an aromatic sausage, add a generous amount of fresh herbs. Cooked diced vegetables, such as onion or roasted red pepper, can be another excellent addition. If you like heat and spice, add dried ground chile peppers and ground toasted coriander seed. If you're inventing your own sausage, stick to pairings you know work no matter what the form. Rosemary and garlic go great with leg of lamb; thus, they'll do the same with a lamb sausage. Want to make an Asian-flavored sausage? Season it with garlic, scallions, and ginger. You could stuff that mixture into a casing for a sausage, wrap it with dough or in an egg roll skin to make a potsticker.

Sugar may be used to counteract bitter taste of salt and help lower PH in fermented sausages.

Water may be used – up to 3% for fresh sausages and about 10% in moist cooked sausages. It's best to add as ice, as it helps keep everything cold.

**Casings** – Natural casings, made from the intestines of sheep, hogs or cattle, are traditional. Sheep and pork casings are digestible and permeable to moisture and smoke. Casings are sold in bundles called hanks.

Sheep – 3/4" to 1"

Pork – 1-1/4" to 2" (one hank will stuff about 40 to 50 pounds of sausage)

Beef – 2" to 4"

Collagen casings – breakfast sausage, used fresh, smoked and dried. Use dry, do not soak.

Other – Cellulose, plastic and muslin.

Vegetarian vegetable leaves such as cabbage, corn husk or leek.

Steps for Cleaning and Using Casings:

1. Remove the amount of casings needed from the storage container and cut into 3 to 6 foot lengths for easier handling.
2. Remove the salt by rinsing casings in running water and then soak for one to two hours prior to use. This allows time for the casings to become soft and workable.
3. Before stuffing, insert two fingers into one end of the casing to open and separate it, and then hold under the faucet and let water run through the entire length.
4. Pack sausage as directed in the recipe.
5. Rinse any leftover casings in cold water and thoroughly drain. Then re-pack the casings in a layer of salt in the original container. These will remain usable for about one year.

## **TECHNIQUES TO MAKING SAUSAGES**

### **GRINDING - KEEP YOUR MEAT COLD**

All sausage is by definition ground to some extent (the meat for some country sausages is only finely chopped). A professional meat grinder is recommended – body, worm, blade, die or plates, collar. A food processor can also be used for limited quantities.

Commercial grinders come with a variety of die sizes. Use either a standard grinder attachment for a standing mixer or a countertop grinder, both of which come with a large die and a small die, typically 1/4-inch and 1/8-inch/ 0.5-and 0.25-centimeter holes. A good all-purpose die is 3/16-inch or 4mm. Keep your blade and dies clean and dry to maintain sharpness.

Wash and dry them by hand and store them securely. A dull blade can ruin the texture of a sausage. It's worth the small expense to have blades and dies professionally sharpened often.

Temperature is important here too: Keep everything cold. This is simply good food safety practice as well as an element of good craftsmanship. If you keep all your ingredients chilled, below 40 degrees F/ 4 degrees C., your meat and fat will combine and grind easier. It helps to chill the grinder and blades too. I like to place my grinding equipment in the freezer for an hour before grinding. All this attention to temperature does make a difference.

As a rule, it's best to cut your meat and fat into cubes (a dice small enough to fall through the feed tube of your grinder—you shouldn't need to mash the pieces through), removing sinew and glands as you do. Combine the meat and fat with your seasonings a few hours, or as much as a day, before grinding (optional) or let it cure in the refrigerator for a day after making. Remove as much sinew as possible when dicing the meat. Also, be on the lookout for glands. Sinew can tangle on the blade and clog the die, causing what's called "smear," and this can result in a broken sausage as well. When your grinder is working properly, the meat should be extruded cleanly through the die, each hole in the die distinct, the meat and fat distinct from each other. It should look like good ground meat. If the meat begins to look mushy and rather than being extruded, collects on the surface of the die in a mass, the color pale because the meat and fat are being squeezed together, turn off the machine, remove the collar, die and blade, look for and clear it of sinew. The sinew may be on the worm end, blade or die; or on all three. Then resume grinding. (3)

When finished I like to run a handful of finished sausage meat through the grinder to push out remaining unground mixture. Some people will save this part for a little snack.

#### **Tips for Grinding:**

Chill meat until just before grinding, and always grind the meat and fat into a bowl set in ice, or cut up your meat and fat, add the salt and additional seasonings, and refrigerate the mixture until it's thoroughly chilled, for several hours, or overnight.

Cut and (optionally season the meat), place it in the freezer for 30 minutes to an hour, until it's very cold. The meat can be on the brink of freezing, almost crunchy, but not frozen through. Fat can be ground frozen.

## **CLEANING**

Once you are done grinding. Break down all equipment and clean thoroughly. Dry all pieces of the grinder and let air dry. A food grade mineral oil may be sprayed on all steel pieces. Be sure to sanitize parts before using again. Parts may be stored in a freezer.

## **MIXING (THE PRIMARY BIND)**

Ground meat, fat, and seasonings need to be vigorously mixed until they are sticky. In charcuterie, this is called "the primary bind." Ground meat does not naturally hold together. To make a hamburger that won't fall apart on the grill, you have to work it a little. The more you knead it, the more it sticks to itself and the stickier looking it becomes. The mechanical action of mixing and kneading develops the protein in the meat and this meat protein, called myosin, is sticky. Developing the primary bind is an important step in sausage making; it ensures a uniform texture, rather than a coarse, crumbly one, improving both the cooking and the eating, and it ensures even distribution of the seasonings. Mixing can be done with a wooden spoon in a bowl, but if you have a standing mixer with a paddle attachment, that works best. Often during mixing, you will be adding water or wine or some other liquid to the meat, which the meat will absorb quickly and easily. The liquid enhances the moisture of the finished sausage, helps to distribute the seasonings, and, if the liquid is a flavorful one, such as wine, it also functions as a seasoning. This step gives you another opportunity to chill your meat: always add ice-cold liquid. Add the ice-cold liquid and mix on medium speed for 1 more minute, or until the liquid is incorporated and the mixture feels tacky and has a uniform sticky appearance. (4)

To mix by hand: Grind the meat into a bowl set in ice: it should be big enough to contain the meat during vigorous stirring. Using a wooden spoon, stir and press and fold the meat and fat for about a minute to begin the primary bind. Add the ice-cold liquid and stir vigorously until the liquid is incorporated and the meat mixture coheres and looks sticky. (It takes some muscle.) (5)

Mixing Tip:

When sausage is correctly mixed you should be able to put a 3 ounce patty on your hand, press the patty into your hand using your other hand and then hold hand with patty "stuck on to your hand" over a table without the patty falling down from your hand.

## **BUILDING FLAVOR –American Lamb Favorites**

Lamb blends with a variety of herbs and spices. Consider basil, bay leaf, beans dried, cardamom, cheese – blue, feta, Parmesan, ricotta; cinnamon, coriander, cumin, curry, fennel, garlic, ginger, lemon, mint, mustard, olives, oregano, orange, paprika, pepper, rosemary, sage, tarragon, thyme, tomatoes, vinegar and/or wine. These ingredients may be used in the sausage or served on the side.

## TESTING

As in baking, it's always a good idea to taste your work of art before baking. But, unlike tasting a bit of rough cookie dough or batter you always need to cook your sausage before eating. So, to check for seasoning you should make a tiny patty from your mixed sausage and sauté it (or, in some cases, wrapping it in plastic and poaching it). If there's not enough salt or other seasoning, add more, and be sure to mix long enough to distribute it evenly.

## STUFFING

A sausage stuffer is a manual or electric piece of equipment that pumps sausage mixture through a nozzle and into casings.

Soak your casings until supple, for 20 minutes or for up to two days. Then hold them open beneath cold running water to rinse out the insides. Fill your stuffer and crank or press till the meat appears at the end of the tube. Slide the entire casing onto the nozzle (it helps to use a little of the water out of its soaking dish to lubricate the stuffing tube). Keep your work surface or sheet pan slicked with water (or ice) too, so the sausage slides. When you're finished, squeeze the sausage into links of the specified size and twist them in alternating directions (or tie off each link with butcher's string, if you wish); this will force any air pockets out toward the casing, and then you can prick these air pockets with a needle, knife tip, or sausage pricker to allow air to escape. Cover and refrigerate or freeze your sausages until you're ready to cook or smoke.

## REFERENCES ON AMERICAN LAMB AND SAUSAGE MAKING

American Lamb Board – [www.americanlamb.com](http://www.americanlamb.com)

(1) *Ruhlman, Michael. Charcuterie: The Craft of Salting, Smoking, and Curing (Revised and Updated) (Kindle Locations 2071). W. W. Norton & Company. Kindle Edition.*

(2) *Ruhlman, Michael. Charcuterie: The Craft of Salting, Smoking, and Curing (Revised and Updated) (Kindle Locations 2101). W. W. Norton & Company. Kindle Edition.*

(3) *Ruhlman, Michael. Charcuterie: The Craft of Salting, Smoking, and Curing (Revised and Updated) (Kindle Locations 2142). W. W. Norton & Company. Kindle Edition.*

(4) *Ruhlman, Michael. Charcuterie: The Craft of Salting, Smoking, and Curing (Revised and Updated) (Kindle Locations 2156). W. W. Norton & Company. Kindle Edition.*

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*Charcuterie: The Craft of Salting, Smoking, and Curing (Revised and Updated)* by Michael Ruhlman, Brian Polcyn

*Garde Manger – The Art and Craft of the Cold Kitchen* by the Culinary Institute of America (CIA)

*Home Sausage Making* by Charles G. Reavis and Susan Mahnke Peery

*Great Sausage Recipes and Meat Curing* by Ryttek Kutas

*Sausage Making* by Ryan Farr and Jessica Battilana

**MERGUEZ** A spicy lamb sausage with North African roots, Merguez is popular there and in France. It's got a distinctive, lamby flavor and a bright red color from the paprika, as well as extraordinary juiciness from the roasted red pepper. Serve with couscous and sautéed bell peppers.

### **Merguez in Casings**

Adapted from *Charcuterie: The Craft of Salting, Smoking, and Curing (Revised and Updated)*

Yield: About 5 pounds/ 2.25 kilograms sausage; about twenty-four 10-inch/ 25-centimeter links

### **Ingredients:**

4 pounds/ 2 kilograms boneless lamb shoulder, diced

1 pound/ 450 grams pork back fat, diced

3 tablespoons/ 40 grams kosher salt

2 teaspoons/ 5 grams sugar

1 teaspoon/ 2 grams hot red pepper flakes (harissa)

2 tablespoons/ 18 grams minced garlic

1 1/2 cups/ 175 grams diced roasted red peppers

1 1/2 teaspoons/ 5 grams freshly ground black pepper

2 tablespoons/ 16 grams Spanish paprika

2 tablespoons/ 16 grams minced fresh oregano

1/4 cup/ 60 milliliters dry red wine, chilled

1/4 cup/ 60 milliliters ice water

20 feet/ 6 meters sheep casings, soaked in tepid water for at least 30 minutes and rinsed

### **Method:**

1. Combine all the ingredients except the wine and water and toss to distribute the seasonings. Chill until ready to grind.
2. Grind the mixture through the small die into a bowl set in ice (see Note below).
3. Add the wine and water to the meat mixture and mix with the paddle attachment (or a sturdy spoon) until the liquids are incorporated and the mixture has developed a uniform, sticky appearance, about 1 minute on medium speed.



4. Cook a small portion of the sausage, taste, and adjust the seasoning if necessary.
5. Stuff the sausage into the sheep casings and twist into 10-inch/ 25-centimeter links. Refrigerate or freeze until ready to cook.
6. Gently sauté or roast the sausage to an internal temperature of 150 degrees F./ 65 degrees C.

Morocco is at the crossroads of many different cultures resulting in a panoply of flavors from West Africa, Asia and the Middle East, Europe and the New World—which helps explain the generous use of diverse spices in merguez. These sausages are great on a bun or as part of a tagine or couscous.

### **Merguez Patties**

(Adapted from *The Spruce Eats*)

Yield: 1 lb. of bulk merguez sausage, or a coil to feed four

#### **Ingredients:**

Spice Mixture (makes 1/3 cup)

- 2      tablespoons/ 16 grams sweet paprika
- 1      tablespoon/ 5.32 grams coriander seed, dry toasted
- 1      tablespoon/6.72 grams cumin seed, dry toasted
- 1      tablespoon/7.84 grams anise seed, or fennel seed, in a pinch, dry toasted
- 1      teaspoon/ 7.28 grams cinnamon, Ceylon
- 1/2-1    teaspoons/ 1.26 – 2.52 grams cayenne, depending on your harissa
- 2      teaspoons/ 12 grams kosher salt

Sausage

- 1      pound fresh ground lamb shoulder
- 2      garlic cloves, minced fine
- 1      teaspoon grated fresh ginger
- 1      tablespoon/ 6.72 grams spice mix
- 2      tablespoons/ 33 grams harissa

1       tablespoon/ 16.52 grams tomato paste

1/4-1/2 teaspoons/ 2-4 grams Kosher Salt, to taste

Iced water, as needed

**Method:**

Combine the spice mix ingredients and grind fine using a spice grinder or a mortar and pestle. The extra can be stored in a glass jar. Using a mixer, combine all the sausage ingredients. Add the ice water, a tablespoon at a time until the mixture is well combined. If you have ground the meat yourself, you probably won't need much ice water. Form a little patty and cook it off, taste and adjust the seasoning as you see fit. Cover and chill this mixture overnight if you can. This will help the flavors develop. If overnight is impossible, chill at least an hour. Dip your hands in ice water as you form the sausage patties. Chill the patties again if you are not going to cook them right away. Grill the merguez coils for 10-12 minutes, total, turning once.

**Mutton Gyro Sausage**

Cody Heimke and Chef Joe Parajecki

Yield: 2 pounds, about 12- 14 sausages

**Ingredients:**

30#	wt. oz	American Lamb
.42	6.44	Kosher Salt
.119	1.91	Penzey's Garlic Powder
.119	1.91	Penzey's Roasted Garlic Powder
.119	1.91	Onion Powder, granulated
.119	1.91	Onion Powder, granulated and toasted
.093	1.48	Tellicherry pepper FG or Penzey's California Seasoned Pepper
.04	.64	Oregano, dried leaf
.023	.38	Thyme, dried leaf
.008	.14	Marjoram, dried
.857	13.71	Ice

**Method:**

1. Combine all the spice ingredients to equally distribute the seasonings. Mix with meat pieces. Chill until ready to grind.
2. Grind the mixture through the small die into a bowl set in ice.
3. Add the ice/ water to the meat mixture and mix with the paddle attachment (or a sturdy spoon) until the liquids are incorporated and the mixture has developed a uniform, sticky appearance, about 1 minute on medium speed.
4. Cook a small portion of the sausage, taste, and adjust the seasoning if necessary.
5. Stuff the sausage into the sheep casings and twist into 10-inch/ 25-centimeter links. Refrigerate or freeze until ready to cook.

### **Moroccan Lamb Kefta**

Chef Jack Kaestner

Yield: 1-1/2pounds, about 10 sausages

#### **Ingredients:**

- 1 pound ground American Lamb
- 3 ounces lamb fat (optional)
- 1 medium onion, chopped very fine
- 1/4 cup chopped fresh parsley
- 1/4 cup chopped fresh cilantro
- 1 tablespoon chopped mint leaves
- 2 teaspoons paprika
- 1 teaspoon cinnamon
- 1 teaspoon ras el hanot\*
- 1 teaspoon salt
- 1/4 teaspoon pepper
- 1/8 teaspoon cayenne pepper

#### **Method:**

Mix all ingredients together in a large mixing bowl, and chill for one hour or longer to allow the flavors to blend. Shape the keftas on skewers. Cook over medium hot coals, approximately five minutes each side.

## **Spiced Lamb Burgers with Mint Yogurt Sauce**

Chef Jack Kaestner

Yield: 25 ounces, about 6 (4 ounce) burgers

### **Ingredients:**

1-1/2 pounds Ground American Lamb

1/2 cup minced shallot

2 tablespoons chopped fresh cilantro

2 tablespoons olive oil

2 tablespoons fresh lemon juice

1 tablespoon paprika

1 teaspoon minced jalapeno pepper

1 teaspoon chopped garlic

1 teaspoon cumin

1 teaspoon of ras el hanot\*

Salt and black pepper to taste

### **Mint Yogurt sauce**

1 cup Greek yogurt

1 tablespoon chopped fresh mint

1 tablespoon lemon juice

1 pinch of cayenne pepper

Salt and pepper to taste

**Method:****Spiced Lamb Burgers:**

Stir shallot, cilantro, olive oil, lemon juice, jalapeno, garlic, salt black pepper, paprika, and cumin in large bowl to blend.

Add the lamb and mix gently to combine.

Shape mixture into four 1/2 inch-thick patties. Arrange on small baking sheet.

For best flavor cook over a medium charcoal grill. Char grill or grill pan will also work.

Cook 3-4 minutes per side. After the first two minutes turn the patties 90° to create a cross mark.

Chef's Tip: Patties can be made 8 hours ahead. Cover and chill until ready to cook.

**Mint Yogurt Sauce:**

Whisk all the ingredients in medium bowl to blend.

Season to taste with salt and pepper. Cover and chill until ready for use.

**\*Ras et hanout Or (Arabic for "top of the Shop")**

The mixture varies depending on who is selling it, but can be a combination of anywhere from 10 to 100 spices. It usually includes nutmeg, cinnamon, mace, aniseed, turmeric, cayenne, peppercorns, dried galangal, ginger, cloves, cardamom, chili pepper, allspice, sweet and hot paprika, coriander seeds, cumin, fenugreek, fennel seeds, and orris root. The ingredients may be toasted before being ground.