



Nixtamalization and Corn Tortillas

Featured on September 20, 2019 for “The Mexican Food Revolution” demo with Chef Carlos Salgado

Corn Tortillas

Makes 20-25 medium sized tortillas

Ingredients

500 grams dried maize

5 grams cal (calcium hydroxide)

Directions

Nixtamal & Masa

We begin the process of making masa one or two days prior to its use. The goal is to have nixtamal that is freshly cooked, properly rested, and thoroughly cooled before grinding. The nixtamal is ground into masa in small batches and intended to be used within twenty-four hours of grinding.

Every batch of dried corn will cook differently depending on its variety, moisture content, and conditions of storage. The best nixtamal and masa are made with excellent, last-harvest dried maize and highly-developed instincts.

Scale the ingredients

For 20-25 medium tortillas:

Measure approximately 500g dried maize for every 1Kg masa you will need. Take note of the volume to guide you in measuring water for the cooking solution, below.

Measure calcium hydroxide (cal) at 1% of the weight of the dried maize. (5g cal / 500g maize)

Clean the maize

Dried maize corn will often have small amounts of corn husk, leaves, corn silk, and other chaff from harvest.

Check carefully for cob or husk pieces, heavier foreign matter, pebbles, etc. Any foreign matter may affect the texture of the masa or damage your grinder.

Place the maize in a large non-reactive container and cover it with cold water. Stir well to wash the grains and allow particulate and broken kernels to rise to the surface before removing them, perhaps with a skimmer or spoon.

Drain the maize into a large perforated container.

Rinse the maize once more with plenty of cold running water and drain it well.

Prepare the cooking solution

Prepare a large stainless-steel cooking vessel with a volume of water equal to 1.5 times the volume of dry maize and place over medium-high heat.

Add the cal while stirring, to hydrate and disperse it evenly without forming clumps.

Cook the maize

Add the rinsed maize to the pot and take note of the start time.

If necessary, add water to cover the maize by at least a finger. This will ensure that there is enough liquid to keep the corn submerged once the starch begins absorbing water.

Stir frequently while heating to approximately 93-99° C / 200-210° F. There is no need to rapidly boil the mixture – a gentle simmer will allow the corn to cook more evenly.

About 15-20 minutes from the start time, check several grains by feel, aroma, texture, and taste. This will give you information about the dried maize: its relative moisture content and its likely cooking characteristics. Generally, time on the heat for a small batch (less than 10Kg) may be less than 30 minutes.

As the maize cooks its outer skin (pericarp) will begin to dissolve and the grain will begin to soften. Be prepared to stop the cooking by removing the pot from the heat, by adding ice, cold water, or a combination of these.

Continue cooking, stirring, and checking several grains every few minutes, and more frequently as they begin to soften. The aroma of fresh tortillas will begin to form as the grains approach doneness.

The grains are done cooking when the pericarp layer is slippery and dissolved, when the outer kernel is moist and tender, but the center of the grain retains a firm, starchy core. If the grain is fully cooked and soft throughout, it is overcooked and will not be usable for masa. Remember that the masa will be cooked again once more after pressed into tortillas.

At this point arrest the cooking immediately to bring the temperature below 60° C / 140° F. Be sure that the grains are covered by enough liquid to keep them submerged, as they will absorb more liquid during the following rest period.

Cover the cooking container or transfer the corn with its cooking liquid (nejayote) to a clean, covered container to rest at room temperature for 8-12 hours.

After the resting period, store the corn in its liquid and refrigerate up to 2 days before grinding.

Grind the corn

The nixtamal is best ground into masa when it is cold, about 4° C / 40° F.

Drain the nixtamal into a large perforated pan.

Rinse thoroughly with cold water while rubbing handfuls of the grains in your palms and fingers, to remove the dissolved skin.

Continue until the majority of the brown, slippery material has been rinsed from the grains.

Thoroughly drain all the liquid from the pan before proceeding to grind.

Use fresh, cold water to lubricate the grinding process, in either a wet mill made for this purpose or by hand with a metate.

After grinding, knead the whole mass together until uniform in texture and moisture, either by hand in a mixer with a paddle.

Use the finished masa immediately or store it in a tightly sealed container at room temperature if you are working it within an hour or two. Refrigerate the sealed container if you do not intend to use it within this time. When working the dough, keep it covered with a damp cloth to prevent the surface from drying, which will influence the shaping characteristics.



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