

Whole Wheat¹ Flour Tortillas

The people of India will say these tortillas are the same as rotis

The American South West and much of Mexico have a strong tradition of wheat flour tortillas. These tortillas were likely originally made from *Sonora* wheat. *Sonora* wheat has light golden colored bran, so that the flour is also lightly golden, and the wheat grain is soft enough to be ground to whole wheat flour by hand, on a metate. In India the chosen wheat for rotis is often durum wheat.

Sonora wheat can be nicely stone ground by electrical power, to make whole wheat flour suitable for making flour tortillas. It is now being grown by several farmers in California and beyond, and is becoming increasingly available to make truly authentic South Western whole wheat flour tortillas.

To make tortilla dough with whole *Sonora* wheat flour, olive oil, butter or lard is first rubbed into the flour. Lard is mentioned as a traditional fat, butter or ghee might be the choice for making Indian rotis. Olive oil seems as though it would have been a choice in Mexico, since it was likely introduced from the Iberian Peninsula together with *Sonora* wheat. All fats make the product tender. Butter makes a flakier textured roti and olive oil a softer and more flexible tortilla. In practice olive oil is superior in that it makes a more pliable dough and a more flexible tortilla. Fat or oil can conveniently be cut into the flour using a food processor with metal blade.

Salty water containing a small amount of sourdough is mixed into the flour. The amount of water to use is just enough to make very firm dough, which can be pressed into a ball. Mixing by hand is possible for small batches, otherwise a strong electric mixer fitted with a paddle, or preferably a food processor can be used. Granules of dough are produced in the food processor. These large granules can be compressed into a dough ball.

The ball of dough is left to mature covered with a damp cloth, at 68 -77°F (20-25°C) for 6 - 8 hours, or for 3 - 4 hours at 90°F (32°C). Note that the required fermentation time is halved for each 18°F (10°C) rise in temperature; temperatures higher than this may cause flavor changes. The sourdough helps pocketing during baking, gently enhances the flavor, and acidifies the dough, which allows the release of valuable minerals from the whole grain. It also has a preservative effect against molds in the dough and on the tortillas. The suggested initial fermentation time is for acidity in the dough to increase enough for the naturally occurring enzyme phytase to decompose most of the phytic acid in whole wheat, so making minerals, such as calcium, magnesium, zinc and iron available.

In small amounts enzyme active wheat malt, which is sprouted wheat, and vitamin C are great natural aids to sourdough fermentation and dough texture.

After the main fermentation, the dough should be well kneaded until smooth and pliable, preferably in a strong mixer with a paddle; it is then divided into tortilla amounts, rounded and allowed to rest for at least 15 minutes. Each dough ball is rolled out thinly to make a single tortilla, which traditionally might be as large as 18 inches in diameter and very thin; large enough to wrap a burrito. Somewhat surprisingly, the dough must be very firm initially, so that it can eventually be rolled out into a very thin sheet that has no stickiness. *Note that no flour of any kind is used in the rolling out process.*

¹ *Sonora and other soft white wheat varieties, as well as durum wheat varieties can be made into lovely tortillas. In any case adjustment may be necessary, to the amount of water used to produce the right degree of stiffness in the dough; it is best to start with too little water and to add more at the kneading stage to produce the wanted dough texture.*

Baking time is less than a minute, at the maximum for most home ovens of 550°F. A well made tortilla will balloon in the oven as the center fills with steam, and will be baked as soon as the balloon or pocket is completely formed; ideally it should have few if any brown spots. Tortillas can be served immediately, or they can be allowed to cool stacked between cloths in a basket and then stored in a closed plastic bag, to prevent them from drying out.

Method for: Whole Sonora Wheat Flour Tortillas

Amounts are for approximately 8 six inch tortillas

<i>Ingredient</i>	<i>Baker's per cent</i>	<i>Grams*</i>	<i>Ounces*</i>
Whole wheat flour <i>Stone ground</i>	100	250	8
Enzyme active wheat malt flour with vitamin C** (<i>dried and ground sprouted wheat, with added vitamin C crystals</i>)	1	2.5	0.08
Olive oil or butter	5 -10	12.5 - 25	0.4 – 0.8
Water at 77°F (25°C) <i>Varies with flour batch</i>	45 - 50	112.5 - 125	3.6 - 4
Salt <i>Optional amount to taste</i>	1	2.5	0.08
Simple Sourdough**	10	25	0.8

* These are convenient and common units, they are not equal amounts; 250 grams is a little more than 8 ounces (= 227 grams).

** See separate recipes at www.wholegrainconnection.org

[] In mixing bowl: Whole wheat flour and wheat malt

[] Incorporate the oil, with rubbing or cutting-in method, or with food processor fitted with metal blade.

[] Separately measure water, and dissolve salt in water, followed by sourdough starter. Disperse completely.

[] Add water with dissolved salt and sourdough starter to mixing bowl. Mix until flour is evenly moistened, by hand or in food processor. *There is no attempt to develop the dough at this stage.* Form the dough into a ball and leave in bowl covered with a damp cloth to prevent dough drying. Allow dough to rest at 77°F (25°C) for 6 hours or at 90°F (32°C) for 3-4 hours.

[] Knead the dough very well until smooth and pliable. A strong mixer with a paddle is helpful. Divide and round the dough. Rest in a bowl covered with a damp cloth for at least 15 minutes before rolling out. Roll out to thin disks approximately 6 inches in diameter, perhaps one sixteenth inch thick. Rest rolled out tortillas up to 2 hours between cloths before baking.

[] Two hours ahead of baking preheat and equilibrate baking tiles or pizza stone in oven at the maximum, usually 550°F.

Arrange tortillas on a metal baking peel with driest side down. Slide the tortillas into the oven with the oven peel. Bake briefly, 30 - 60 seconds, only until fully pocketed, and immediately remove from oven, using metal peel. Sometimes pocketing is only partial, in which case remove from oven when a maximum has been reached. Stack the hot tortillas straight from the oven in a cloth-lined basket, and keep covered.

An alternative baking method is to arrange baking tiles on a shelf 6 -10 inches below the broiler. Equilibrate oven at high temperature, turn it off and then turn on the broiler and allow it to heat, for 5 minutes with oven door ajar. Bake the tortillas in the same way, except it may be necessary to turn the tortillas half way through baking.

In any case the hottest, briefest baking will prevent excessive moisture loss and produce the most pliable tortilla. The same applies to baking tortillas on a hot griddle or skillet.

[] Serve or allow to cool in cloth lined and covered basket. When cool, pack into closed plastic bags. Store at ambient temperature. *After storage, sprinkle tortillas with water and steam tortillas for one minute to make them pliable again.*