

## Drying whole wheat and malt sourdough starter

It's useful to have a dried starter available if you have been away from home for more than a month, which is about how long a mature sourdough starter<sup>1</sup> can be satisfactorily stored in the refrigerator, and still produce a good rise in bread. Dried starters are also useful for bakers who bake only occasionally, perhaps just once or twice a year.

Rather than attempting to directly dry down a sourdough starter that contains more water than flour in a batter, the starter can be first mixed with flour to make granules. The fermentation will continue until the granules are dry. The flour does not appreciably dilute the concentration of desired sourdough microorganisms and is enough to feed the microorganisms in the starter after rehydration and until maturation. Granules of starter can be spread out on the shelves of a food dehydrator for final drying at warm room temperature.

Suggested storage of the dried starter granules is in small portions each in a closed plastic bag, or glass jar with lid, such that moisture cannot enter. Stable storage at cool room temperature for perhaps a year is possible, but this storage time can be more than a year at refrigerator or freezer temperatures.

Rehydration and maturation of the starter by adding water, takes up to one and a half days at 86°F (30°C) or at least twice as long (2-3 days) at 68°F (20°C). As the dried starter ages the maturation might take longer. The rehydrated and matured starter can be used directly in bread or used to make more starter.

### Drying Method

Ingredients	Amount	Baker's per cent
Whole wheat flour (< 10% moisture)	250 grams	100
Enzyme active wheat or rye malt	2.5 – 12.5 grams	1 - 5 (with respect to flour)
Freshly mature sourdough starter	165 grams	66

Approximate yield after drying 325 grams

[] Prepare freshly mature sourdough starter (e.g. 165 grams), using the recipe given at: <http://wholegrainconnection.org/sitebuildercontent/sitebuilderfiles/3simplemaltsourdoughstarter.pdf>

[] Use a food processor such as a Cuisinart with a metal blade. Mix the flour and malt. Add starter. Process these ingredients briefly until granules form that are similar in appearance to breadcrumbs.

<sup>1</sup> There are many sourdough methods available; therefore, for success it is important to use the corresponding author's method of sourdough preparation in all their sourdough recipes. The method here is for a sourdough maintained according to the recipes by Monica Alton Spiller at [www.wholegrainconnection.org](http://www.wholegrainconnection.org).

[] Prepare a food dehydrator for low temperature drying at 86 - 95°F (30 - 35°C), with solid drying trays, or paper-covered perforated trays, e.g. 3 circular trays, 12 inches (305 mm) diameter. Spread the sourdough granules using a fork, to a depth of less than a quarter inch (6mm depth).

[] Dry for 8 – 24 hours at 86 - 95°F (30 - 95°C), until no more moisture is being driven off. *Weigh the top tray before drying and at (e.g. 4-hour) intervals during the drying. When drying is complete there should be no further decrease in top-tray weight. Actual drying time will depend on local conditions.*

[] Package dried starter in portions (e.g. 25 grams) in closed, air- and moisture-tight bags or jars. Protect the dried starter from moisture and store at cool room temperature or in refrigerator or freezer. Store in freezer for shelf life longer than one year. *A 25-gram portion when rehydrated and regenerated is enough mature starter to make one loaf of bread and make (replenish) a 225-gram batch of starter<sup>2</sup>.*

### *Rehydrating or regenerating the dried starter*

<i>Ingredients</i>	<i>Amount</i>	<i>Baker's percent</i>
Dried sourdough starter	25 grams	100
Water at ambient temperature	38 grams	150 (with respect to dried starter amount)

Yield of starter 63 grams

[] In a bowl, mix the dried starter and water to a fairly smooth paste. Scrape down sides of bowl and consolidate starter. Cover bowl and keep at 86°F (30°C) for 24 – 36 hours. *At a cooler temperature 68°F (20 °C), rehydration will take 2-3 days.*

Stir well at least twice each day.

*Rehydration should be complete in 24-36 hours when kept at the recommended 86°F (30°C). Notice that the mixture is thick initially and thins to the consistency of a smooth batter at maturity. Also, at maturity the fermentation stops, the batter no longer rises, few gas bubbles remain, the pH is 3.5 or less, and the aroma should be mildly fruity.*

*Store mature starter in a loosely covered jar at 40°F (4°C); it is best used for bread or to replenish a stock of mature starter, within one week. Keep sides of jar well scraped down. Stir before use.*

*Sometimes a dark-colored watery layer will separate out, especially when red wheat flour is used. The dark color is due to the release of colored phenolic compounds from the bran. Stir the liquid back into the starter before using.*

<sup>2</sup> <http://wholegrainconnection.org/sitebuildercontent/sitebuilderfiles/3simplemaltsourdoughstarter.pdf>