

Whole Wheat Barm Bread - Method for professional bakers

Summary

There are three main stages in producing barm breads, spanning approximately 24 hours. Flour means “whole wheat flour” throughout method. *It is assumed that the baker already has a stock of active whole wheat sourdough starter available; or a stock of barm can be generated from dried barm, and increased, several days prior.*

1. Mashing (~ 30 minutes preparation time and 3-4 hours rest)

1.A. Hard wheat flour mash

or

1.B. Soft wheat flour mash

The mash flour is mixed with enzyme active malt and is treated with warm salty water to speed the enzyme activity. (“Mashing” is the word used for the process of enzyme action on grains.)

When soft wheat is used, half the mash flour is first treated with hotter water to gel the starch; this step is not necessary for hard wheat flour that naturally contains some damaged starch.

In general, provided the initial water temperature is as suggested, then later temperatures will be in the desired range.

Alternative techniques include the use of pre-heated potable water from a dispenser added to the mixing bowl, followed by the salt and then the flours.

Commercial potable hot water dispensers designed for beverages in restaurants are made by In-Sink-Erator, and on a smaller scale, Primo brand bottom loading bottled water, hot and cold water dispenser.

2. Barm sponge fermentation (~15 minutes preparation time and 16-18 hours rest)

Barm stock is added to the fresh mash, and allowed to ferment.

3. Bread making (3-4 hours)

Barm sponge, second half of flour and a small amount of salty water are mixed and developed, to form the final dough.

For further background and tips, see “Introduction to Barm Bread 2010” (www.sustainablegrains.org)

Barm bread

1. A. Hard wheat flour mashing (~ 15 minutes preparation time and 3-4 hours rest)

- In mixing bowl, mix all the malted wheat with the mash flour.
- Dissolve salt in water, heat to 130-140°F (55-60°C) and add to mixing bowl. Mix only to combine well. Temperature should be 113-120°F (45-49°C). Cover bowl. This initiates the mashing.
- Allow the mashing to continue by allowing the mash mixture to cool very slowly to room temperature, by blanketing covered bowl for an hour, or by placing in heated cabinet 113°F (45°C) for an hour, and then allowing to cool at ambient temperature for approximately 2 hours more.

1.B. Soft wheat flour mashing (~ 30 minutes preparation time and 3-4 hours rest)

- Dissolve salt in water, heat to 150 - 158°F (65 -70°C) and add to mixing bowl.
- Add half the mash flour. Mix well and allow to stand until temperature drops to 140°F (60°C)
- Separately, combine all the malted wheat with the remainder of mash flour. Add to mixing bowl.
- Mix only to combine well. Temperature should be 113-120°F (45-49°C). Cover bowl. This initiates the mashing.
- Allow the mashing to continue by allowing the mash mixture to cool very slowly to room temperature, by blanketing covered bowl for an hour, or by placing in heated cabinet 113°F (45°C) for an hour, and then allowing to cool at ambient temperature for approximately 2 hours more.

2. Barm sponge fermentation (~15 minutes preparation time and 16-18 hours rest in winter and 8 hours rest in summer if temperature uncontrolled)

- To mixing bowl: Add required amounts of mash and barm (stock). Mix only to combine well.
- Cover bowl, and leave to ferment at 68°F (20°C), until pH drops to 3.5 (measured with pH paper), 16-18 hours. Stir down after approximately 12 hours and when testing pH.
- Use immediately in bread dough.

3. Bread making (3-4 hours at ambient 70°F)

- To mixing bowl: Add required amounts of flour and vital wheat gluten, freshly made barm sponge, and water containing dissolved measure of salt. Hold back some water and add only as needed to produce the desired dough texture.
- Mix to develop dough. Cover bowl and rest dough 1 hour.
- Divide and round dough pieces. Rest 10-15 minutes.
- Finally shape dough. Leave to rise, up to 2 hours according to temperature.
- Bake. For example: baguettes or buns, 10-15 minutes at 475°F; loaves 45 – 60 minutes at 350°F.

Whole Wheat Barm Stock - Method for professional bakers

Note: This process for barm stock is almost identical to the preparation of barm sponge, in the barm bread method. The difference is in the length of time allowed for the barm stock to ferment to maturity, which is at least twice the time needed for the sponge to mature, given the same temperature conditions. "Flour" means "whole wheat flour" throughout.

1. Mashing (~30 minutes preparation time and 3-4 hours rest)

2. Barm stock fermentation (~15 minutes preparation time and up to 36 hours rest)

1. A. Hard wheat flour mashing (~ 15 minutes preparation time and 3-4 hours rest)

In mixing bowl, mix all the malted wheat with the mash flour.

Dissolve salt in water, heat to 130-140°F (55-60°C) and add to mixing bowl. Mix only to combine well. Temperature should be 113-120°F (45-49°C). Cover bowl. This initiates the mashing.

Allow the mashing to continue by allowing the mash mixture to cool very slowly to room temperature, by blanketing covered bowl for an hour, or by placing in heated cabinet 113°F (45°C) for an hour, and then allowing to cool at ambient temperature for approximately 2 hours more.

1.B. Soft wheat flour mashing (~ 30 minutes preparation time and 3-4 hours rest)

Dissolve salt in water, heat to 150 - 158°F (65 -70°C) and add to mixing bowl.

Add half the mash flour. Mix well and allow to stand until temperature drops to 140°F (60°C)

Separately, combine all the malted wheat with the remainder of mash flour. Add to mixing bowl.

Mix only to combine well. Temperature should be 113-120°F (45-49°C). Cover bowl. This initiates the mashing.

Allow the mashing to continue by allowing the mash mixture to cool very slowly to room temperature, by blanketing covered bowl for an hour, or by placing in heated cabinet 113°F (45°C) for an hour, and then allowing to cool at ambient temperature for approximately 2 hours more.

2. Barm stock fermentation (~15 minutes preparation time and up to 36 hours rest)

To mixing bowl: Add required amounts of mash and barm (stock). Mix only to combine well.

Cover bowl, and leave to ferment at 68°F (20°C), until pH drops to 3.5 (measured with pH paper), 16-18 hours. Stir down after approximately 12 hours and when testing pH.

Allow the fermentation to continue at the same temperature for at least as long again as it took for the pH to drop to 3.5 – 4. Keep bowl covered and stir well, occasionally. The stock barm texture becomes weak and gas is no longer well retained.

Refrigerate at 40°F (4°C) until needed for making barm sponge or more stock barm.

Barm bread calculator – For professional bakers

The Barm bread calculator is an Excel spreadsheet designed to calculate ingredient quantities for each stage in the barm bread process. There are two designs presented; either on the basis of a loaf containing 16 ounces of whole wheat flour, or on the basis of a loaf containing 500 grams whole wheat flour.

Provision is made for substitution of some whole wheat flour with vital wheat gluten to bring the flour protein value up to an ideal 15%, if desired.

The grey boxes on spreadsheet can be filled according to the requirements of the baker. The values in other boxes are visible to the user as in a normal Excel spreadsheet, so that you can understand the logic used in the design.

We cannot be responsible for the results that you obtain using this spreadsheet, especially because the user can make changes. We would appreciate your comments or corrections to the current versions presented.