

Baking Procedure for 100% Whole Wheat Flour Bread using a Poolish Method

Formulation:

Poolish		
Ingredients	Percentage	Grams
Whole Wheat Flour	100	*80
Water	100	**80
Yeast (active dry)	0.1	0.08
Total		160.08
Final Dough		
Ingredients	Percentage	Grams
Whole Wheat Flour	100	*120
Water	51.7	**62.03
Yeast (active dry)	1.62	1.95
Salt	2.54	3.04
Poolish	133.4	160.08
*Flour (14% mb)		
**Optimum Water Absorption%		

Ingredients:

Non-iodized table salt

Red Star Active dry yeast

Crisco Shortening (for greasing)

Equipment:

1 Qt Commercial Grade Round Food Storage Containers with Lids

Rack-oven

Fermentation Cabinet

200g bowl pin-style mixer made by National Mfg.

100g puploaf pan (top inside, about 14.3 × 7.9 cm (55/8 × 31/8 in.); bottom outside, about 12.9 × 6.4 cm (51/16 × 21/2 in.); inside depth, about 5.7 cm (21/4 in.)

50ml Graduated cylinder

600ml Plastic Beakers

50ml plastic beakers

Food grade bowls

2-roll sheeter (6-in. roll width with adjustable gap settings (min. 1/8 in., max. 3/8 in.) and foot switch

Serrated knife

Bread Cutting Board

Preparation for Poolish Method

Making the Poolish

1. Weigh out 40% of flour weight (80g) into a 1-qt food container (labeled numerically). Weigh out .08 grams of yeast and mix into flour. In a beaker, weigh the same amount of water as the flour and pour into the flour-yeast mixture. Mix with a chopstick until all the flour is hydrated and scrape down the sides of the container. Cover the container and leave to ferment overnight at room temperature for 16-18 hours. This preferment will be ready the next day to use.
2. Weigh out the remaining flour in a separate 1-qt food container and add 3.04g salt. Cover with a lid and leave it with on the counter.

Bake Day

1. Pre-heat the oven to 400°F and set the fermentation cabinet temperature to 86°F and the humidity at 85%.
2. Dissolve the yeast into water . Make enough solution for samples that will be baked that day. Make the yeast solution daily.

Mixing Procedure

1. Add the flour and salt into the mixing bowl then pour in 12ml of the yeast solution measured out using a graduated cylinder. Use the remaining water to rinse out the graduated cylinder. The initial water absorption for the sample is based on either the absorption given by the farinograph or mixograph. During the mixing stage, water is added (if needed) to the dough in order to reach optimum absorption. Add the poolish corresponding to the sample into the mixing bowl.
2. Mix to optimum gluten development. Take a small portion of the dough and stretch between your fingers. Stretch it without tearing to the point where it becomes see through. This is the window pane test. If you can do this with your dough, it has reached optimum development. Remove the dough from the mixing bowl and place it on the counter to be rolled into a ball. Place the dough into a greased bowl and then into the fermentation cabinet.
3. This poolish method is a 65-minute fermentation with a proof time of 30-35 minutes.
4. After 30 minutes, remove the dough from the fermentation cabinet. Loosen the dough from the dough with your fingers and place it onto a lightly floured surface sticky side up. Take two opposite ends of the dough and fold towards the center, one over the other. Take the other two ends of the dough, and fold them towards the center as well. This should leave you with a roughly rectangular-shaped dough. Take the dough and sheet it.
5. Pass the dough through once at gap setting 11/32 in., and then again at 7/32 in.. Place the dough on the countertop and with your fingers, tightly roll the dough into a log about 5.8-6.5in. in length. Label the dough with a small piece of paper and place it into the greased puploaf pan.

6. Place the pan back into the fermentation cabinet for 30-35 minutes until dough proofs to a height of 2cm above the rim of the pan.
7. After reaching proof height, place the sample into the pre-heated oven and baked for 30 minutes. Allow it to cool for an hour before taking the bread volume and evaluating the bread characteristics.
8. Breads are evaluated on bread symmetry, crumb grain, crumb texture and flavor. For bread symmetry, evaluate the bread before cutting. Make notes on the size of the bread, the break & shred, the top (rounded top or flat and uneven). Cut the dough and make observations on the crumb grain and texture. Is the grain, open with a uniform cell structure? Is the texture soft and spongy? For flavor, make note of any strong and unique flavors.