

A Short Book About Cooking and Baking

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Theoretical Introduction

Baker's Percentage

A universal method of measuring the amount of an ingredient in baking is the baker's percentage. It is a notation indicating the proportion of an ingredient relative to the flour used in the recipe. Baker's percentage expresses the ratio of the weight of an ingredient to the total weight of the flour as a percentage:

$$\text{baker's percentage} = 100\% \times \frac{\text{mass}_{\text{ingredient}}}{\text{mass}_{\text{flour}}}$$

For example, a recipe calling for 65% water will require 292.5g of water if 450g of flour are used ($\frac{450 \times 65\%}{100\%} = 450 \times 0.65 \approx 292.5$).

Flour

In Europe there are several prevailing systems for labeling flour types, however, all correspond to a certain standardised process. A sample of flour is incinerated in a laboratory oven at a very high temperature for a long time. The amount of ash residue indicates the amount of whole grain that was present in the flour. When the ash is measured in milligrams per 100g of flour, the German flour types are obtained, such as 450 or 550. Similarly, the French types are the same ash measured in milligrams per 10g of flour, e.g. 45 or 55 which correspond to the German types 450 and 550. The Italians took a different approach and instead assigned the most commonly used flour types numbers 00, 0, 1 and 2. Those correspond to the German 405, 550, 800 and 1050. In general, the higher type flours have higher protein content, but beyond 1100 the protein content begins to drop slightly.

Kneading

Breads

Pre-Ferment Bread

Ingredients

For a single loaf

Pre-Ferment (Poolish)

- 150g flour (12%+ protein or type 650+)
- 150g water (room temperature)
- 1g fresh yeast

Dough

- 400g flour (12%+ protein or type 650+)
- 280g water (35C)
- 6g fresh yeast
- 10g salt

Instructions

Prepare the poolish by mixing all ingredients in a glass jar or a glass container. Leave to ferment in room temperature for 16-24 hours.

Once the poolish is ready, mix the ingredients for the dough and the entire poolish until homogenous. Leave to rest for around 30 minutes, then fold several times onto itself. Repeat at least one more time and leave to rest for 30 minutes.

Take the dough out of the bowl onto a surface lightly sprinkled with flour. Fold the dough onto itself several times by grabbing an edge of the dough, stretching it up and bringing it to the opposite side. Work clockwise or counterclockwise. Flip the dough upside-down and shape into a ball to form a smooth surface by pulling the dough under itself. Keep the seam at the bottom of the ball throughout the process.

Prepare a proofing basket or line a large bowl with a clean kitchen towel and toss very generously with flour (otherwise the dough will stick to the towel). Toss the top of the dough with flour and place it seam side up in the proofing basket. Proof at room temperature for 30 minutes to one hour.

While the dough is proofing, heat the oven and a dutch oven (you may use a large steel pot with a lid as a replacement) to 250C. Once hot, sprinkle the bottom of the dutch oven with flour and carefully place the dough in it. Do not drop the dough as it will lose the gases built up during proofing resulting in a more flat loaf. Score the top of the bread deeply. Bake covered for 20 minutes, remove the cover and bake for 20 or more minutes to achieve dark brown crust.

Sourdough Bread

Pizza

Pizza Napoletana

Ingredients

- wheat flour (11-12% protein or type 450)
- 60%+ water (room temperature)
- 0.5% fresh yeast
- 2% salt

Measuring

It is important to measure the appropriate amounts of ingredients, so that we may divide the dough into an integral number of pieces (too large pieces will result in pizzas with a thick bottom, while too small pieces will result in smaller pizzas). We will be dividing the dough into 280 ± 5 g pieces. For example, if we want to make 4 pizzas, we should make 1120g of dough. The mass of the entire dough is approximately the sum of the masses of the ingredients, hence we may calculate the amount of flour needed:

$$mass_{flour} = mass_{dough} \times \frac{100\%}{percent_{flour} + percent_{water} + percent_{salt} + percent_{yeast}}$$

For a 60% hydration dough we need $\frac{1120}{1+0.6+0.02+0.005} = \frac{1120}{1.625} = 689.3$ g flour.

Instructions

We mix the ingredients in a large bowl, then knead using any technique for about 20 minutes. For high hydration dough we may instead choose the folding technique and perform it periodically during the resting period. We leave the dough for at least 2h to rest, but due to it being a low yeast content dough, we may leave it for 5h or more.

After the dough rests, we prepare containers to store it. We may use small containers for each piece of dough or large fermentation boxes (as seen in commercial pizzerias) for multiple. Cover the containers with a thin layer of oil. Divide the dough into 280 ± 5 g pieces, shape into balls with a smooth surface (extremely important) by, for instance, folding the dough into itself and place them in the containers. If storing multiple ball in one container, leave at least 5cm of space inbetween each pair. Store in the fridge and let ferment for at least 8h. It is possible to store the dough in the fridge for up to a week.

After taking out of the fridge, let rest for around 30 minutes or until it reaches around 16C. In the meantime preheat the oven to the highest available temperature. Carefully take one dough ball out of a container (it is important to not push the gases out of the dough at this stage) onto flour and stretch using any technique while being cautious to not press the gases out of the crust. Bake until the crust turns crispy (for reference, 6-8 minutes in 250C).

Cookies

Oatmeal Cookies

Ingredients

For about 18 cookies:

- 250g oatmeal
- 200g flour (type 450-650)
- 150g butter
- 2 eggs
- 5g salt
- 5g cinnamon
- 30g brown sugar/honey or use caramel
- dried fruits (for example cranberry)
- water (optional)

Instructions

Preheat your oven to about 165C.

Take a steel pot and heat it over high heat for about 30 seconds. To the hot pot add butter

and brown until golden brown. Cool the butter in a water bath until it is around room temperature.

Blend half the oatmeal coarsely, transfer to a container, then blend the dried fruits until they turn into tiny pieces. We do not want to turn them into a paste, though. Take a large bowl and mix eggs and butter together until combined, then add flour and whisk until the mass turns smooth. Add your remaining ingredients and mix until the mass is uniform. If the mass is crumbly, add some water.

Line a baking tray with parchment paper. Scoop a small portion of the dough, form into a rough ball, then lay on the tray and press down until about 1cm thick. Repeat to make 9 cookies. Bake for 15 mins.