Baking

Baking in general

Most of us have a never ending choice of the most delicious breads, cakes and pastries to please both the palate and the eyes. We have become very used to this diverse range of bread and baked products, yet we know almost nothing about how they come into existence.

The invention of bread (sometimes called the “staff of life”) is relatively recent.

At the very beginning of recorded history there was the discovery of fire as a source of light and heat. Then it was discovered that different grasses and their seeds could be prepared for nourishment.

Later, with the combination of grain, water and heat, it was possible to prepare a kind of broth. Hot stones were covered with this broth or the broth was roasted on embers and “presto” the first flat bread was created. The ability to prepare stable food radically changed the eating habits and lifestyles of our early ancestors as they evolved from being hunters to settlers.

Above: bread being baked in a commercial oven; at left, bread proving before baking.

Facts & Figures

- Records show that as early as 2600-2100 B.C.E. bread was baked by Egyptians, who, it is believed, had learned the skill from the Babylonians.
- On average, every American consumes around 53 lb (24 kg) of bread per year.
- The "pocket" in pita bread is made by steam. The steam puffs up the dough and, as the bread cools and flattens, a pocket is left in the middle.
- US Farmers receive just 5 cents (or less) for each loaf of bread sold.

Why the need to measure humidity?

The production of baked goods such as bread, cakes, biscuits and pastries requires a number of processing steps in which humidity and temperature play an important role.

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Why the need to measure humidity? *continued*

After **mixing**, it is typical to divide the dough into pieces and allow it to **rest** for a few minutes so that the gluten network in the dough can relax allowing for easier **molding**.

If, at the molding stage, the temperature is too hot the dough will be too sticky and cannot be easily processed. If too cold, the dough can become damaged during molding which leads to holes forming in the bread. If the humidity level prior to the molding process was too low, a skin of dry dough can form on the dough surface. This skin makes it harder for the dough to increase its volume during the next process step called proving.

Proving is the professional term for the final dough-rise step before baking, where 90% of the bread volume is achieved. To achieve consistently good dough rising results special chambers are used. These chambers can maintain the ideal environment for the yeast to grow. Depending on the yeast and flour used, temperatures between 38...42°C and humidity levels between 70...80%rh are considered ideal.

In summary, the use of quality ingredients and careful handling throughout the various stages of production will not result in a quality product unless the dough temperature, and the combined temperature and humidity of the bakery are carefully regulated. Modern day bakeries use custom ventilation systems that are controlled by precision humidity and temperature sensors.

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