

Study on puff expansion mechanism and process optimization

Puff is flour, oil, eggs as the main raw materials, heating into paste, extruded, baked into a hollow slab, cooling after filling, decoration and made of a kind of cake.

Unlike other baked goods, the puff batter can form a large, single hollow structure when heated.

The raw materials selected by puff are relatively simple and the process is not complicated, but further research is needed to obtain the best process effect, especially the single and large hole inside the product is affected by many factors.

So this article on the eclair batter [Microwave drying machinery and equipment](#) Based on the research of mechanism, the processing technology and formula of puff were optimized to ensure the quality of puff.

Scalding: after boiling water, oil, milk and other raw materials, pour in flour that has been sifted for several times, quickly stir with a wooden spoon at the same time, mix well, and then leave the fire to cool.

Cool: cool the batter naturally and add [Puffs snacks and core snacks machine](#) In the mixing bowl, add the egg liquid.

Extrusion molding: put the prepared puff batter into a mounted bag with a mounted nozzle and squeeze the batter into a baking tray

Combined with the basic processing steps of puff, the expansion mechanism of puff was analyzed. We found that, different from the expansion of other baked products, the puff batter could form a larger and single hollow structure after heating. The main reasons are as follows.

Expansion source the expansion source of a puff is gas

Starch in flour is gelatinized in the process of heating, and this gelatinization enhances the

water absorption of puff batter, and the proportion of water in the raw material formula is more, which provides a guarantee for sufficient steam generation during baking; During the mixing process, both the oil and the eggs are coated with a certain amount of gas.

Expansion power in the baking process, high temperature makes oil and water separate, produce explosive strong steam pressure, is this kind of food expansion power.

Expansion ensures that a small amount of gluten protein and oil in flour ensure that water will not form gluten network with gluten protein, and will not hinder the inhibition of the body from rising, which is the guarantee of expansion.

Through the orthogonal test and combining the puff expansion mechanism, the factors to improve the puff expansion quality are summarized as follows.

Influence of raw materials

The strength of flour was tested with low gluten flour, medium gluten flour and high gluten flour according to the traditional process. The puffs processed with high-gluten and medium-gluten flour have small volume, small internal holes and uneven expansion effect.

