Starch Molecular Chain Structure for Excellent Formability

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Illustration

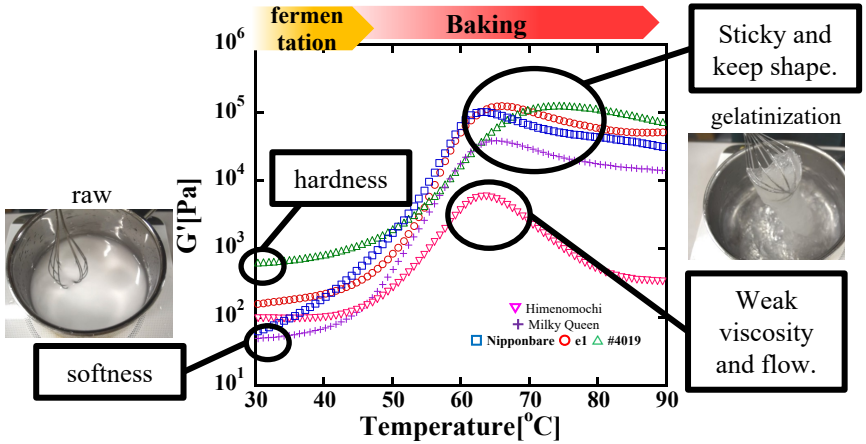
Wheat flour dough

Extend well

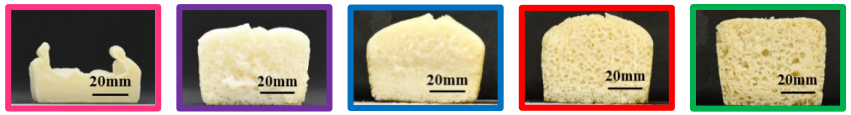
Rice flour dough

Not extending

Improve the formability of rice flour bread by using the viscoelasticity of starch.



Himenomochi Milky Queen Nipponbare e1 #4019



To elucidate the relationship between rice strains and the viscoelasticity of rice flour batter and the ability to form and process food products.

Content:

I'm studying food processing for rice flour without using wheat flour. Using rice without wheat would lead to the development of foods that address gluten allergies. The purpose of this study is to establish categorization of rice flour considering the categorization of wheat flour as light flour, heavy flour, and so on. I classify rice based on differences in the molecular chain structure of starch, which is the main component of rice.

The figure on the left shows the change in rice batter hardness, as captured by the storage modulus G'. It shows a liquid batter at low temperatures and a sticky batter at high temperatures. Different rice starch structures cause different batter characteristics during the cooking process affecting the formability of the bread. Elucidating the relationship between the molecular chain structure, physical properties, and moldability of starch will contribute to the development of rice flour foods.

Appealing point:

I 'm working on the development of allergen-free foods using various rice flours, with the aim of creating a food barrier-free. I would like to contribute to the expansion of rice consumption.

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