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Report on studies on rice cracker production research in collaboration with JIRCAS

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Objectives:

- **Development of a method for identification of varieties for rice cracker production**

Studies at JIRCAS

Production of rice crackers

To understand rice cracker production method, we prepared usual “Senbei” style rice cracker and “Senbei” for babies, which has soft and complete puffing following the manner described.

1. Typical “Senbei” with rice flour
   [Materials]
   Rice flour 100g
   Hot water 75mL
   - Mix rice flour with water. (add water small by small)
   - Cut dough into small pieces, and steam for 15 min.
   - Make dough into flat shape within dough is hot.
   - Dry dough into MC 13-15%. (Sun-drying: 2-3d, Oven-drying: 8h x 2)
   - Bake dough with oven or fire.

2. “Senbei” for babies, soft and complete puffed product
   [Materials]
   Rice flour 100g
   Hot water 75mL
   Sugar 4g
   Salt 0.4g

- Mix all ingredients and pour hot water (over gelatinizing temp) to dough becomes as soft as an earlobe.
- Cut dough into small pieces, and steam for 15 min.
- Knead again and make dough into “very” flat shape within dough is hot.
- Dry dough into MC 15-18% (Oven-drying: 8h x 2) to be transparent.
- Put doughs into paper envelope, without overlapping, and heat with microwave 0.5min.
  (addition of sugar and rapid heating make cracker “puff” completely)

Results and discussion

Typical “Senbei” and “Senbei” for babies was successfully prepared. Baking in the microwave produced products with a higher puff volume compared to flame baked products (data not shown). The typical “Senbei” was recorded less browning effect after puffing than the “Senbei” for babies probably due to the caramelization of the sugar (Figure 1).

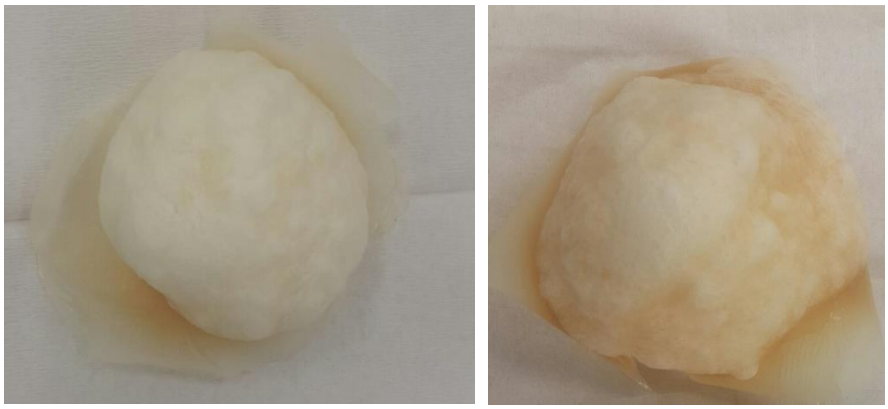

Figure 1. Typical Senbei (left) and Senbei for babies (right) demonstrating differences in colour due to addition of sugar.

Studies at AfricaRice

Studies at AfricaRice have been on Establishing a correlation between setback viscosity and quality (hardness & puffiness) of rice cracker (Figure 2). The protocol was further optimized and is being used for germplasm screening for varieties suitable for cracker production.

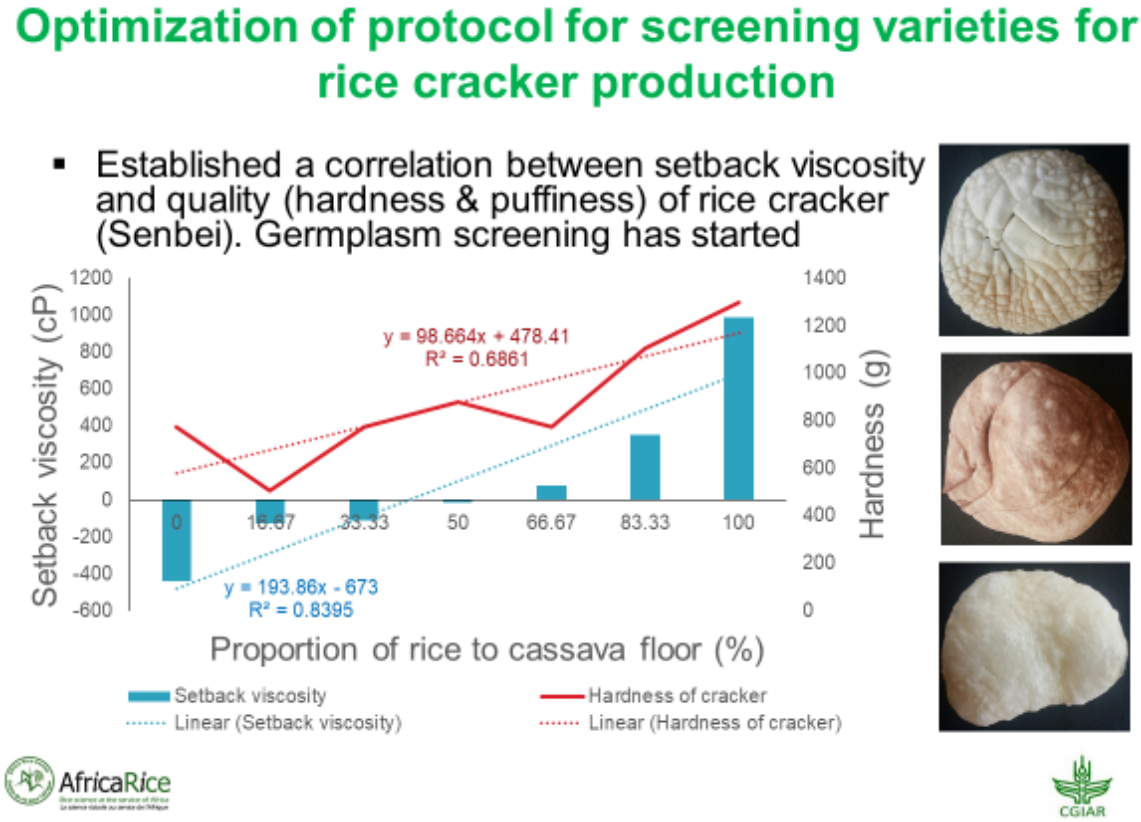

Figure 2. Correlation between setback viscosity and quality (hardness & puffiness) of rice cracker