

INTISARI

Roti terbuat dari tepung, air, garam, dan *yeast* sebagai bahan pengembang. Selain *yeast*, bahan pengembang lain yang dapat digunakan yaitu *sourdough*. Dibandingkan *yeast* komersial, *sourdough* lebih sehat karena adanya mikrobial hasil fermentasi berupa bakteri asam laktat yang dapat menghasilkan metabolit yang telah terbukti bermanfaat bagi kesehatan dan *yeast* yang berfungsi dalam pengembangan adonan. *Sourdough* terbuat dari campuran tepung dan air yang difermentasi secara spontan selama periode tertentu. Berbagai tepung dapat digunakan untuk mengganti tepung terigu dalam pembuatan *sourdough*, seperti tepung beras pecah kulit. Tujuan penelitian ini yaitu mengevaluasi potensi tepung beras pecah kulit dalam pembuatan *sourdough* dan aplikasinya pada roti gluten dan roti *gluten-free*.

Proses fermentasi *sourdough* tepung terigu (kontrol) dan *sourdough* tepung beras pecah kulit diteliti. Hasil menunjukkan bahwa jenis tepung yang digunakan pada fermentasi *sourdough* mempengaruhi *sourdough* dan karakteristik tekstur roti. Sampel dan kontrol memiliki waktu fermentasi yang sama, yaitu 9 hari untuk mencapai kematangan. Total BAL pada akhir fermentasi pada *sourdough* tepung beras pecah kulit ($9,63 \pm 0,5$ Log CFU/ml), tidak berbeda jauh dengan *sourdough* tepung terigu ($9,46 \pm 0,06$ Log CFU/ml). Total *yeast* pada akhir fermentasi pada *sourdough* tepung beras pecah kulit ($6,90 \pm 0,69$ Log CFU/ml), lebih rendah dibandingkan *sourdough* tepung terigu ($7,30 \pm 0,22$ Log CFU/ml). Berdasarkan pH dan TTA, produksi senyawa asam yang lebih tinggi diamati pada *sourdough* kontrol (Δ TTA adalah 3,6 dan Δ pH adalah 3,33), diikuti oleh *sourdough* tepung beras pecah kulit (Δ TTA adalah 3,29, dan Δ pH adalah 3,57). *Sourdough* tepung beras pecah kulit meningkatkan volume spesifik dan menurunkan *hardness* roti tawar gluten. Namun, *sourdough* tepung beras pecah kulit menurunkan volume spesifik dan meningkatkan *hardness* roti tawar gluten-free, dibandingkan dengan *sourdough* kontrol (tepung terigu).

Kata Kunci: *Sourdough*, beras pecah kulit, roti gluten, roti *gluten-free*, tekstur

ABSTRACT

Bread is made of flour, water, salt, and yeast as a leavening agent. Besides yeast, the leavening agent that can be used is sourdough which is a natural leavening agent. Compared to commercial yeast, sourdough is healthier due to the presence of the fermentation process, such as lactic acid bacteria that can produce metabolites that have been shown to benefit health. Sourdough is a mixture of flour and water that has spontaneous fermentation processes during a certain period. Various types of flour can be used to substitute wheat flour in sourdough making, such as brown rice flour. The aim of this study is to evaluate the potential of brown rice as local flours in sourdough making and its application on wheat bread and gluten free bread.

The fermentation process of wheat sourdough (as a control) and brown rice sourdough was studied. The results show that the type of flour used for sourdough fermentation has influence on sourdough and the bread texture characteristic. Samples and control sourdough had the same fermentation time of 9 days to reach mature sourdough. Total LAB at the end fermentation of sourdoughs made of brown rice flour ($9,63 \pm 0,5 \log \text{CFU/ml}$) did not differ significantly from the commonly used sourdough (made with wheat flour) in industry ($9,46 \pm 0,06 \log \text{CFU/ml}$). Total yeast at the end fermentation of brown rice sourdough ($6,90 \pm 0,69 \text{ Log CFU/ml}$), lower than control sourdough ($7,30 \pm 0,22 \text{ Log CFU/ml}$). According to pH and TTA, the higher acidic compound production was observed in control (wheat sourdough) (ΔTTA was 3,6 and ΔpH was 3,33), followed by brown rice sourdough (ΔTTA was 3,29 and ΔpH was 3,57). Brown rice sourdough increased the specific volume and decreased the hardness value of wheat bread. However, brown rice sourdough decreased the specific volume and increased the hardness value of gluten-free bread, compared to control sourdough which was made with wheat flour.

Keyword: Sourdough, brown rice, wheat bread, gluten-free bread, texture