

## ***SOURDOUGH* TEPUNG BERAS MERAH (*Oryza nivara* L.) DAN APLIKASINYA DALAM PEMBUATAN ROTI BEBAS GLUTEN**

### **INTISARI**

Tepung non gluten seperti tepung beras merah dapat digunakan sebagai alternatif dalam pembuatan *sourdough* untuk mengatasi gangguan pencernaan akibat konsumsi gluten karena memiliki kandungan karbohidrat tinggi yang dapat menjadi substrat untuk pertumbuhan mikrobia dan memiliki peran yang serupa dengan tepung terigu. Penelitian ini bertujuan untuk mengetahui pertumbuhan bakteri asam laktat dan *yeast* dalam *sourdough* tepung beras merah, mengetahui aplikasi *sourdough* tepung beras merah sebagai bahan pengembang dalam pembuatan roti gluten, dan menentukan pengaruh *sourdough* tepung beras merah terhadap karakteristik tekstur roti bebas gluten. *Sourdough* tepung beras merah dibuat dengan mencampurkan tepung beras merah dan air (1:1), kemudian dilakukan *feeding* setiap 12 jam dengan rasio (*sourdough*:tepung:air = 1:2:2). Fermentasi dilakukan selama 9 hari. *Sourdough* selanjutnya digunakan dalam pembuatan roti gluten dan roti bebas gluten. *Sourdough* tepung beras merah memiliki total bakteri asam laktat dan total *yeast* yang tidak berbeda signifikan (9,29 log CFU/ml dan 7,83 log CFU/ml, secara berturut-turut), pH yang lebih tinggi (3,85), dan kadar asam tertitrasi yang lebih rendah (2,77 ml NaOH) dibandingkan *sourdough* tepung terigu. Roti gluten *sourdough* tepung beras merah mempunyai volume spesifik dan densitas sel yang lebih tinggi, namun *mean cell area* dan *hardness* yang lebih rendah dibandingkan roti gluten *sourdough* tepung terigu. *Sourdough* tepung beras merah dalam pembuatan roti bebas gluten tidak memberikan pengaruh signifikan terhadap volume spesifik, densitas sel, *mean cell area*, *cohesiveness*, *springiness*, dan *resilience*, tetapi secara signifikan meningkatkan nilai *hardness*, *gumminess*, dan *chewiness*.

**Kata kunci:** *Sourdough*, tepung beras merah, roti bebas gluten, tekstur roti

## ***RED RICE FLOUR (*Oryza nivara* L.) SOURDOUGH AND ITS APPLICATION IN MAKING GLUTEN-FREE BREAD***

### ***ABSTRACT***

*Non-gluten flour, such as red rice flour, can be used as an alternative in making sourdough to overcome digestive disorders caused by gluten consumption because it has a high carbohydrate content which can be a substrate for microbial growth and has a similar role to wheat flour. The aim of this research is to determine the growth of lactic acid bacteria and yeast in red rice sourdough, determine the application of red rice sourdough as a rising agent in making wheat bread, and determine the effect of red rice sourdough on the texture characteristics of gluten-free bread. Brown rice flour sourdough is made by mixing brown rice flour and water (1:1), then feeding every 12 hours with the ratio (sourdough:flour:water = 1:2:2). Fermentation was carried out for 9 days. Sourdough was further used in making wheat bread and gluten-free bread. Red rice sourdough had total lactic acid bacteria and total yeast that were not significantly different (9.29 log CFU/ml and 7.83 log CFU/ml, respectively), higher pH (3.85), and lower acid content (2.77 ml NaOH) than wheat sourdough. Wheat bread made of red rice sourdough had a higher specific volume and cell density, but lower mean cell area and hardness. Specific volume, cell density, and average cell area of gluten-free bread made of red rice sourdough were not significantly different. However, the use of red rice sourdough significantly increased hardness, gumminess, and chewiness of gluten-free bread.*

**Keywords:** *Sourdough, red rice flour, gluten-free bread, bread texture*