

ABSTRAK

KAJIAN MUTU KIMIA, FISIK DAN AMILOGRAFI BERAS MERAH, BERAS PUTIH, SERTA BERAS RUSAK TERSERANG KUTU (*Sitophilus oryzae sp*)

Oleh

RANI JUNIARTI

Tujuan dari penelitian ini adalah untuk mengetahui dan membandingkan mutu kimia dan fisik beras pada berbagai tingkat kerusakan akibat aktivitas kutu beras (*Sitophilus Oryzae Sp*). Percobaan disusun dalam rancangan acak kelompok lengkap (RAKL) dengan perlakuan berupa sampel tepung beras komersial, beras bersih kutu, beras merah, beras terserang kutu dan bubuk beras hasil kutu. Penelitian terdiri dari 5 sampel dengan 6 ulangan. Data akan diuji statistik menggunakan aplikasi SPSS 25. Uji statistik digunakan untuk pengujian kadar air, lemak, protein, total pati, amilosa, aktifitas aktioksidan, daya serap air, daya serap minyak, derajat putih, kelartan dan swelling power. Data diuji homogenitas dan aditifitas menggunakan uji Barlett dan Tukey. Kemudian diuji menggunakan ANOVA untuk mengetahui pengaruh perlakuan. Seluruh data diolah lebih lanjut dengan Uji Beda Nyata Terkecil (BNT/LSD) pada taraf 5%. Hasil penelitian menunjukkan bahwa beras yang terserang kutu memiliki kadar air 13.23%, kadar abu 0,93 %, kadar lemak 1,32%, protein kasar 5.10%, total pati 75,77%, amilosa 19.87 %, amilopektin 80.13 %, asam fitat 0,0353 %, daya serap air 2.09 g/g, daya serap minyak 1.93 g/g, derajat putih 80.23; kelarutan 7.55 %, *swelling power* 5.16 g/g, *RVA peak viscosity* 2568 Cp, *breakdown* -12, *final viscosity* 5874, *setback* 3294, *peak time* 13 menit, dan suhu pengentalan 91°C. Selain itu, sampel bubuk beras hasil kutu memiliki mutu kimia, fisik dan amilografi berupa kadar air 12.72%, kadar abu 2,59%, kadar lemak 2.09%, protein kasar 9.81 %, total pati 63.67%, amilosa 17,64%, amilopektin 82.36%, asam fitat 0,0400 %, antioksidan pada bubuk beras uji DPPH 1043.38 µg/g dan uji ABTS sebesar 618.88 µg/g; daya serap air 2.51 g/g, daya serap minyak 2.41 g/g, derajat putih 73.52 ; kelarutan 11.79 %, *swelling power* 4,94 g/g, *RVA peak viscosity* 709 Cp, *breakdown* 225, *final viscosity* 1216, *setback* 732 Cp, *peak time* 9,67 menit, dan suhu pengentalan 93,10 °C.

Kata Kunci : Amilografi beras, Beras merah, Beras terserang kutu, Bubuk beras, *Sitophilus oryzae*.

ABSTRACT

STUDY OF CHEMICAL, PHYSICAL AND AMILOGRAPHIC QUALITY ON RED RICE, WHITE RICE, AND BROKEN RICE INSECTED BY LICE (*Sitophilus oryzae sp*)

BY

RANI JUNIARTI

The purpose of this study was to determine and compare the chemical and physical quality of rice at various levels of damage due to the activity of rice lice (*Sitophilus Oryzae Sp*). The experiment was arranged in a completely randomized block design (RAKL) with treatments in the form of samples of commercial rice flour, lice-clean rice, brown rice, lice-infested rice and rice powder produced by lice. The study consisted of 5 samples with 6 replications. The data will be statistically tested using the SPSS 25 application. Statistical tests are used to test water content, fat, protein, total starch, amylose, antioxidant activity, water absorption, oil absorption, whiteness, solubility and swelling power. The data were tested for homogeneity and additivity using the Barlett and Tukey test. Then tested using ANOVA to determine the effect of treatment. All data were further processed with the Least Significant Difference Test (BNT/LSD) at the 5% level. The results showed that rice infested with lice had water content of 13.23%, ash content of 0.93%, fat content of 1.32%, crude protein 5.10%, total starch 75.77%, amylose 19.87%, amylopectin 80.13%, phytic acid. 0.0353 %, 2.09 g/g water absorption, 1.93 g/g oil absorption, 80.23 degree whiteness; solubility 7.55%, swelling power 5.16 g/g, RVA peak viscosity 2568 Cp, breakdown -12, final viscosity 5874, setback 3294, peak time 13 minutes, and thickening temperature 91°C. In addition, samples of rice powder produced by lice had chemical, physical and amylographic qualities in the form of water content 12.72%, ash content 2.59%, fat content 2.09%, crude protein 9.81%, total starch 63.67%, amylose 17.64%, amylopectin. 82.36%, phytic acid 0.0400 %, IC 50 test of rice powder as 1043.38 µg/ml and 618.88 µg/ml; water absorption capacity 2.51 g/g, oil absorption capacity 2.41 g/g, whiteness degree 73.52 ; solubility 11.79%, swelling power 4.94 g/g, RVA peak viscosity 709 Cp, breakdown 225, final viscosity 1216, setback 732 Cp, peak time 9.67 minutes, and thickening temperature 93.10 C.

Keywords:, Lice-attacked rice, Red rice, Rice amylography , Rice powder, *Sitophyllus oryzae*.