



Program & Abstract Book

The 2nd INTERNATIONAL CONFERENCE
on Bioscience, Biotechnology, and Biometrics
for "Sustainable Agriculture, Healthy Food, and Nutrition"



Biotechnology & Bioscience Research Center, Faculty of Mathematics & Natural Sciences
University of Mataram

Aruna Senggigi
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IN COLLABORATION WITH :



ICBBB-HFB01

Diet of Analogue Rice Containing Mocaf, Corn, Pigeon Pea and Seaweed Increase Insulin Serum and *TCF7L2* Gene Expression on Rat Model of Type 2 Diabetes Mellitus

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This study was conducted to investigate effect of analogue rice consisting of mocaf, corn, pigeon pea and seaweed on type 2 diabetic rats

Antidiabetes assay was performed by *in vivo* experimental on 10 weeks-old male and female rats that have induced by STZ 90 mg/kgBW on 2 days after birth. The test was carried out during 14 days by comparing to rats that consume with BR1. Blood sampling was collected at days 0, 7, 14 through *retro orbitalis* and was analyzed in blood glucose and serum insulin level. Pancreatic organ was collected for histology with Hematoxylin-Eosin and immunohistochemistry (IHC) method. Analysis of *TCF7L2* gene expression was performed by pancreatic organ RNA isolation, cDNA synthesis, optimization primer gene and qPCR using Livak method.

In rats that treated analogue rice for 14 days, blood glucose level was significantly decreased ($p < 0,05$) while insulin serum was increased in comparison with rats that consume BR1. Histological pancreas showed a better morphological Langerhans than rats that consume BR1. IHC assay showed an increase on insulin expression of the rats. The relative expression of *TCF7L2* gene in the normal group treated with analogue rice was higher than in the normal group of BR1 feed. The relative expression of *TCF7L2* gene in DM treated with analogue rice and BR1 feed showed higher value than in the normal group BR1 feed.

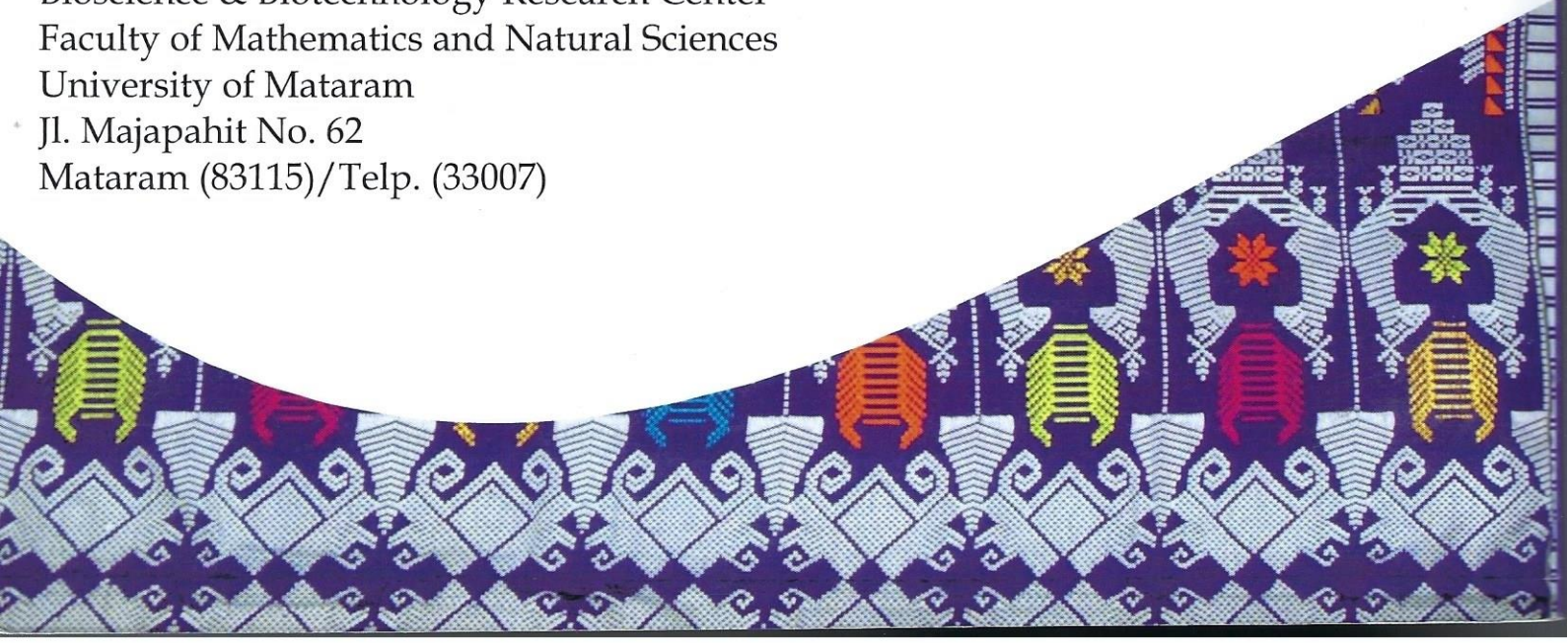
This research showed that analogue rice was able to increase serum insulin level, morphological Langerhans and *TCF7L2* gene expression on rats model of type 2 diabetes mellitus.

Keywords: *Diabetes mellitus type 2, analogue rice, diet*



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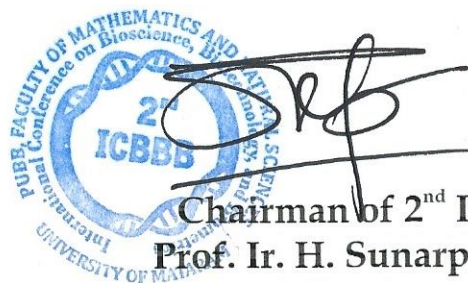
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