



EVALUATION OF ANTIDIABETIC AND ANTICHOLESTEROL PROPERTIES OF BISCUIT PRODUCT WITH MANGROVE FRUIT FLOUR (MFF) SUBSTITUTION

Jariyah^{1*}, Endang Yektiningsih², Ulya Sarofa¹

¹*Department of Food Technology, Faculty of Engineering, University of Pembangunan Nasional "Veteran" Jawa Timur, Raya Rungkut Madya, Gunung Anyar, Surabaya 60294, East Java, Indonesia*

²*Department of Agribusiness, Faculty of Agriculture, University of Pembangunan Nasional "Veteran" Jawa Timur, Raya Rungkut Madya, Gunung Anyar, Surabaya 60294, East Java, Indonesia*

*jariyah.tp@upnjatim.ac.id

<https://doi.org/10.34302/2019.11.4.13>

Article history:

Received:

15 January 2019

Accepted:

29 September 2019

Keywords:

Antidiabetic;

Anticholesterol;

Biscuit;

Bruguiera gymnorhiza;

Sonneratia caseolaris.

ABSTRACT

These fruits contain bioactive compounds and dietary fibers which is very potential for substitution to biscuit products. This study evaluated the antidiabetic and anticholesterol properties in the produced biscuits that were substituted with mangrove fruit flour (Pedada and Lindur fruits). This study used split plot design consisted of 2 factors. The first factor was divided into 5 groups (positive control group, negative control group, biscuit control group, Pedada biscuit group, and Lindur biscuit group), each group consisted of 4 rats and the second factor was blood taking time consisted of 5 time intervals (0, 1, 2, 3 and 4 weeks). The study parameters were rats' blood glucose, body weight, short chain fatty acids (SCFA), and lipid profiles. This study obtained that biscuits produced using mangrove fruit flour had antidiabetic properties since it could decrease rats' blood glucose and increased of body weight for 4 weeks. The biscuits feeding had no significant effect on acetic acid and butyric acid, but had significant effect on propionic acid level. Anticholesterol properties indicated that the biscuits could decrease of total cholesterol, low density lipoprotein (LDL), triglyceride, and could increase of high density lipoprotein (HDL).
