

**PENGARUH PENAMBAHAN BIJI BUAH PALA DALAM PAKAN
TERHADAP PARAMETER STRES DAN PERFORMA TIKUS
YANG DIINDUKSI STRES**

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INTISARI

Pala (*Myristica fragrans Houtt*) merupakan salah satu tumbuhan asli Indonesia yang memiliki kandungan senyawa minyak atsiri seperti *myristicin*, *elemicin* dan *isoelemicin* yang dapat berfungsi sebagai pereda stres. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan biji pala dengan level yang berbeda terhadap parameter stres dan performa tikus. Dua puluh ekor tikus umur 40 hari dibagi dalam empat kelompok perlakuan yang berbeda, yaitu: kelompok pakan basal tanpa *stressor* (K-); kelompok pakan basal dengan *stressor* (K+); kelompok pakan basal+5% biji pala dengan *stressor* (P1); dan, kelompok pakan basal+10% biji pala dengan *stressor* (P2). Tikus diinduksi stres dengan *stressor* berupa *restrain* dengan cara dimasukkan ke dalam tabung berukuran 15 cm x 5,5 cm yang diberi lubang 3 mm pada ujungnya, selama 2 jam/hari. Pengecekan keberhasilan induksi dengan melihat penurunan nafsu makan dan peningkatan kadar glukosa darah. Parameter yang dikoleksi yaitu: Parameter stres (kadar glukosa darah, kadar Malondialdehid (MDA), profil hematologi darah) dan performa tikus (*feed intake*, *average daily gain*, *feed conversion ratio*). Data dianalisis menggunakan metode Rancangan Acak Lengkap (RAL) pola searah, kemudian dilanjutkan dengan uji *Least Significant Different* (LSD). Hasil analisis statistika menunjukkan bahwa penambahan biji pala pada pakan hingga level 10% secara signifikan ($P < 0,05$) mampu menurunkan kadar glukosa darah, kadar MDA, kadar leukosit, dan kadar trombosit darah berturut-turut 43%; 63%; 20,5%; dan 16,6%, dan mampu meningkatkan kadar eritrosit hingga 25% jika dibandingkan dengan grup K+. Penambahan biji pala pada pakan hingga level 10% juga berpengaruh nyata ($P < 0,05$) terhadap peningkatan konsumsi pakan, pertambahan berat badan, dan efisiensi FCR berturut-turut sebesar 1,67%; 48%; dan 47,5% jika dibandingkan dengan grup K+. Berdasarkan hasil tersebut, dapat disimpulkan bahwa penambahan biji pala dalam pakan hingga level 10% dapat mengurangi resiko stres dan meningkatkan performa tikus yang diinduksi stres.

Kata kunci : Biji pala, stres, parameter stres, performa, tikus.

THE EFFECT OF NUTMEG SEED ON FEED TO STRESS PARAMETERS AND PERFORMANCES OF STRESS-INDUCED RAT

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ABSTRACT

Nutmeg (*Myristica fragrans Houtt*) is one of the native plants of Indonesia which contains volatile oil compounds such as *myristicin*, *elemicin*, and *isoelemicin* which can function as stress relievers. This study aims to determine the effect of adding nutmeg seeds with different levels on stress parameters and the performance of rats. Twenty rats aged 40 days were divided into four different treatment groups, namely: basal feed group without stressor (K-); basal feed group with a stressor (K+); basal+5% nutmeg feed group with a stressor (P1); and, the basal +10% nutmeg feed group with a stressor (P2). The rats were induced by stress with a stressor in the form of restraint by inserting them into a 15 cm x 5.5 cm tube with a 3 mm hole at the end, for 2 hours/day. Checking the success of induction by looking at a decrease in appetite and an increase in blood glucose levels. The parameters collected are stress parameters (blood glucose levels, levels of Malondialdehyde (MDA), blood hematological profiles) and rat performance (feed intake, average daily gain, feed conversion ratio). Data were analyzed using a completely randomized design (CRD) method in one direction, then continued with the Least Significant Different (LSD) test. The results of statistical analysis showed that the addition of nutmeg seeds to the feed up to a level of 10% significantly ($P < 0.05$) was able to reduce blood glucose levels, MDA levels, leukocyte levels, and blood platelet levels, respectively 43%; 63%; 20.5%; and 16.6%, and was able to increase erythrocyte levels up to 25% when compared to the K+ group. The addition of nutmeg seeds to the feed up to a level of 10% also had a significant effect ($P < 0.05$) on the increase in feed consumption, weight gain, and FCR efficiency of 1.67%, respectively; 48%; and 47.5% when compared to the K+ group. Based on these results, it can be concluded that the addition of nutmeg seeds in the feed up to a level of 10% can reduce the risk of stress and improve the performance of stress-induced rats.

Keywords: Nutmeg seed, stress, stress parameters, performances, rat.