

PENGARUH PENAMBAHAN KUNYIT (*Curcuma longa* L.) TERHADAP PROSES RANSIDITAS KONSENTRAT BERBASIS FERMENTASI BAKTERI ASAM LAKTAT SELAMA PENYIMPANAN SECARA AEROB

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan kunyit (*Curcuma longa* L.) dalam mencegah proses ransiditas pakan konsentrat berbasis fermentasi bakteri asam laktat (KFBAL) dalam kondisi penyimpanan secara aerob. Perlakuan yang diberikan adalah penambahan ekstrak kunyit, tepung kunyit dan vitamin E sebagai sumber antioksidan pada KFBAL dengan kadar 0%, 0,5%, 1%, 1,5 % dan 2%. Penyimpanan dilakukan selama 0 hari, 10 hari, 20 hari, 30 hari, dan 40 hari dengan ulangan sebanyak 3 kali. Analisis aktivitas antioksidan ekstrak kunyit, tepung kunyit dan vitamin E dilakukan dengan pengujian 2,2-difenil-1-pikrilhidrazil (DPPH). Pengukuran pH, kadar *free fatty acids* (FFA), serta analisis uji organoleptik dilakukan untuk menentukan kualitas KFBAL selama penyimpanan. Analisis data dilakukan pada setiap periode waktu penyimpanan kecuali data FFA. Data yang diperoleh dianalisis dengan rancangan acak lengkap pola faktorial. Apabila hasil yang diperoleh berbeda nyata karena perlakuan dilakukan uji *Duncan's Multiple Range Test* (DMRT).

Hasil penelitian menunjukkan bahwa penambahan sumber antioksidan dapat menghambat proses ransiditas selama penyimpanan secara aerob. Berdasarkan uji aktivitas antioksidan, ekstrak kunyit dan vitamin E memiliki aktivitas antioksidan yang paling baik. Hasil nilai pH, menunjukkan bahwa semakin banyak kadar penambahan sumber antioksidan maka pH semakin rendah dan dapat bertahan hingga akhir penyimpanan, dalam hal ini perlakuan penambahan ekstrak kunyit 2%, tepung kunyit 2%, dan vitamin E 2% memiliki hasil terbaik dengan nilai pH paling rendah dan dapat bertahan selama penyimpanan. Berdasarkan uji kadar FFA, penambahan senyawa antioksidan dapat menurunkan kadar FFA secara signifikan dibandingkan dengan kontrol kecuali pada penambahan vitamin E, namun demikian, ditinjau dari persentase kenaikan kadar FFA selama penyimpanan menunjukkan bahwa tepung kunyit 1,5% memberikan hasil terbaik (lebih rendah dari kontrol). Hasil kualitas fisik berupa warna, bau, tekstur dan jamur, menunjukkan bahwa kualitas KFBAL dapat bertahan dengan baik dengan penambahan sumber antioksidan pada semua penambahan sumber antioksidan.

Kata kunci: Kunyit, Antioksidan, Ransiditas, Pakan.

**THE EFFECT OF ADDITION OF TURMERIC (*Curcuma longa* L.) ON
THE RANCIDITY PROCESS OF CONCENTRATE FEED BASED ON
LACTIC ACID BACTERIA FERMENTATION
DURING AEROB STORAGE**

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ABSTRACT

This study aims to determine the effect of addition of turmeric (*Curcuma longa* L.) in preventing the rancidity process of concentrate feed based on lactic acids bacteria fermentation in aerobic storage conditions. The treatment given was the addition of turmeric extract, turmeric flour, and vitamin E as a source of antioxidants in feed with levels of 0%, 0.5%, 1%, 1.5% and 2%. Storage was carried out for 0 days, 10 days, 20 days, 30 days, and 40 days with 3 replications. Analysis of the antioxidant activity of turmeric extract, turmeric flour and vitamin E were carried out by 2,2-Diphenyl-1-picrylhydrazyl (DPPH) analysis. Value of pH measurement, free fatty acids numbers (FFA), and organoleptic analysis were carried out to determine the concentrate feed quality during storage. Analysis were carried out at each storage time period except for FFA. The data obtained were analyzed by a completely randomized factorial design. If the results data obtained were significantly different due to the treatment, the data then tested by Duncan Multiple Range Test (DMRT).

The results showed that the addition of antioxidant sources inhibit the rancidity process during aerobic storage. Based on DPPH analysis, showed that turmeric extract and vitamin E had the best antioxidant activity. The results of the pH value indicated that the more levels of additional antioxidant sources, the lower the pH was achieved until the end of storage. In this case the treatment of adding 2% turmeric extract, 2% turmeric flour, and 2% vitamin E has the best results with lowest pH value during storage. Based on the FFA level analysis, the addition of antioxidant compounds can significantly increase FFA levels compared to controls except for the addition of vitamin E, but in terms of the percentage increase in FFA levels during storage, addition of 1,5% turmeric flour gave the best results (lower than controls). The results of physical quality in the form of color, odor, texture and fungus, indicated that the quality of the feed lasting well with the addition of sources of antioxidants in all additions to the source of antioxidants.

Keywords: Turmeric, Antioxidant, Rancidity, Feed.