

**EFEK PENAMBAHAN JENIS DAN KADAR TEPUNG KUNYIT
(*Curcuma longa*) SEBAGAI SUMBER ANTIOKSIDAN TERHADAP
REAKSI LIPOLISIS DENGAN LAMA PENYIMPANAN BERBEDA PADA
SUSU SAPI SEGAR**

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Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan dari jenis dan kadar tepung kunyit (*Curcuma longa L.*) sebagai sumber antioksidan terhadap reaksi lipolisis dengan lama penyimpanan berbeda pada susu sapi segar. Perlakuan terhadap susu segar adalah penambahan tepung kunyit segar dan tepung kunyit ekstrak air sebagai sumber antioksidan. Pemberian kedua tepung kunyit tersebut dengan kadar 0%, 0,1%, 0,2%, dan 0,3% masing masing perlakuan mempunyai tiga ulangan. Semua perlakuan disimpan dalam suhu ruang ($\pm 27^{\circ}\text{C}$) dan dilakukan pengujian variabel meliputi nilai pH, asam lemak bebas, dan uji kualitas fisik (warna, bau, dan tekstur) pada perbedaan lama penyimpanan susu yaitu: 0, 4, 8, 12, dan 16 jam. Data yang dihasilkan kemudian dianalisis dengan analisis variasi dengan rancangan acak lengkap pola faktorial. Apabila terdapat hasil data yang diperoleh menunjukkan berbeda nyata karena perlakuan, maka dilanjutkan dengan uji *Duncan's Multiple Range Test* (DMRT). Berdasarkan hasil pengujian, penambahan dua jenis kunyit dengan kadar dan lama penyimpanan berbeda memberikan pengaruh nyata ($P < 0,05$) terhadap kadar asam lemak bebas dan nilai pH. Penambahan kunyit sebagai sumber antioksidan mampu menekan peningkatan asam lemak bebas dibandingkan kontrol sehingga dapat disimpulkan proses lipolisis pada susu mampu diminimalisir. Hasil kualitas fisik berupa bau, warna, dan tekstur, menunjukkan bahwa pemberian kunyit dengan kadar tertentu mampu mempertahankan kualitas susu lebih baik dibandingkan kontrol selama penyimpanan.

Kata kunci : Kunyit, Susu, Lipolisis, Antioksidan, Asam Lemak Bebas

EFFECTS OF ADDITIONAL TYPES AND LEVELS OF TURMERIC POWDER (*Curcuma longa*) AS A SOURCE OF ANTIOXIDANTS ON THE LIPOLYSIS REACTION AT DIFFERENT STORAGE TIMES IN RAW MILK

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Abstract

This study aims to determine the effect of the addition of the type and level of turmeric powder (*Curcuma longa* L.) as a source of antioxidants on lipolysis reactions at different storage times in raw milk. The treatment of raw milk was the addition of non-extract and water-extract turmeric powder as a source of antioxidants. The treatment given was the addition of two types of turmeric powders with levels of 0%, 0.1%, 0.2%, and 0.3% each treatment has three replications. All treatments were stored at room temperature (28°C) and tested at different time, namely: 0, 4, 8, 12, and 16 hours. The parameters observed were pH values, free fatty acids (FFA), and physical quality tests (color, odor, and texture) in milk. The data of researched were analyzed by a completely randomized factorial pattern. If there were significant difference on each parameter, the treatment then tested by Duncan's Multiple Range Test (DMRT). The results showed that the addition of two types of turmeric powder with different levels and storage duration gave a significant effect ($P < 0.05$) on free fatty acid levels and pH values. The addition of turmeric as a source of antioxidants was able to suppress the increase in free fatty acids compared to the control so that it can be concluded that the lipolysis process in milk can be minimized. The results of physical quality in the form of odor, color, and texture, indicated that the administration of turmeric with a certain level was able to maintain the quality of milk better than the control during storage.

Keywords : Turmeric, Milk, Lipolysis, Antioxidant, Free Fatty Acid