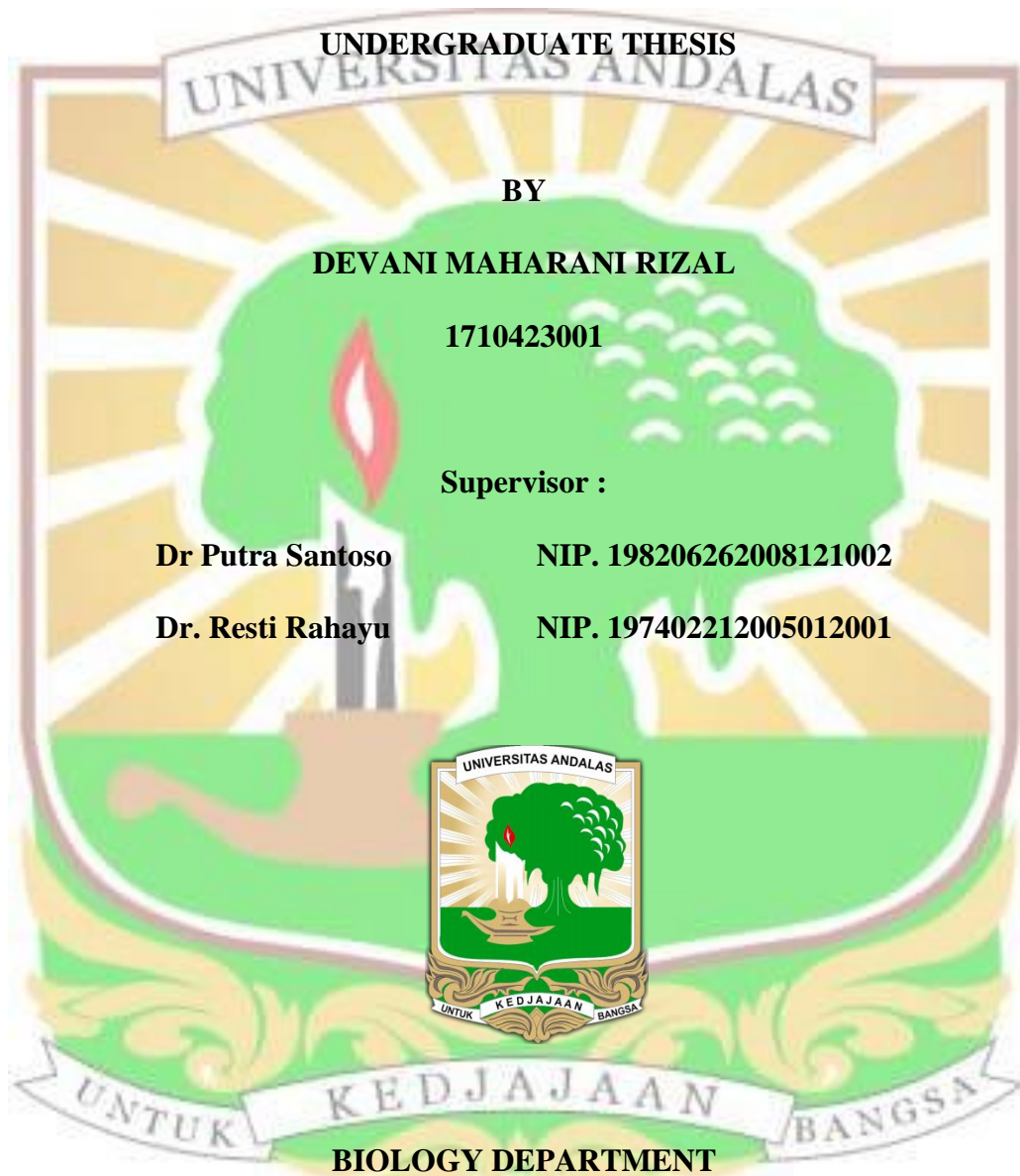


**COUNTERACTIVE EFFECT OF CORN SILK ETHANOL EXTRACT
AGAINS NEUROTOXIC EFFECTS OF TARTRAZINE ON MICE
BRAIN**



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ABSTRACT

Tartrazine is a popular synthetic food coloring. Although it's a legally recommendation by the government, long time exposure of high dose of tartrazine cause decrease neurotransmitter and natural antioxidant in brain tissue, also could increase oxidative stress biomarkers. There is potential from the cornsilk, there have a natural antioxidant such as flavonoid and phenolic acid. This study aims to see the effects of cornsilk extract in counteracting the decrease in intelligence (cognitive, spatial, curiosity, and social interaction), the effects of the cornsilk extract on malondyaldehyde levels of brain tissue and the effects of the cornsilk extract in counteracting brain tissue degeneration in tartrazine treated on mice. This study used a completely randomized design method consisting of 4 treatments, Negative Control (no tartrazine and extract), Positive Control (given 700 mg/kg BW of tartrazine), first treatment group of mice given 700 mg/kg BW of tartrazine and 500 mg/kg BW of cornsilk extract, and second treatment group of mice given 700 mg/kg BW of tartrazine and 1000 mg/kg BW of cornsilk extract for 28 days orally. The results show that there are several compounds such as Cyclooctane-d16, Trichloroacetic Acid, Deuterated Chloroform, Tetradecamethyl-Cycloheptasiloxan, and Hexadecamethyl-Cyclooctasiloxane. The administration of corn hair extract is able to maintain cognitive intelligence in curiosity tests, prevent degeneration of nucleic cortex cells, as well as significantly suppress the accumulation of malondialdehyde in tartrazine-induced mice. These findings suggest that corn hair extract has properties in protecting the structure and function of the nervous system from damage caused by tartrazine.

Keywords : *Cornsilk, Tartrazine, Intelligence, Malondialdehyde, Cerebral Cortex*



ABSTRAK

Tartrazine adalah pewarna makanan sintetis yang populer. Meskipun tartrazine dilegalkan oleh pemerintah Indonesia, namun penggunaan tartrazine dalam waktu yang lama dan dosis yang tinggi dapat menyebabkan penurunan neurotransmitter dan antioksidan alami dalam jaringan otak, juga dapat meningkatkan biomarker stres oksidatif. Rambut jagung memiliki kandungan antioksidan alami seperti flavonoid dan asam fenolik. Penelitian ini bertujuan untuk melihat efek ekstrak rambut jagung dalam menangkali penurunan kecerdasan (kognitif, spasial, rasa ingin tahu, dan interaksi sosial), pengaruh ekstrak rambut jagung terhadap kadar malondialdehid jaringan otak dan efek ekstrak rambut jagung dalam menangkali degenerasi jaringan otak pada tikus yang diberi tartrazine. Penelitian ini menggunakan metode rancangan acak lengkap yang terdiri dari 4 perlakuan dan 6 ulangan. Kontrol Negatif (tanpa tartrazine dan ekstrak), kontrol positif (700 mg/kg BB tartrazine), perlakuan 1 dengan dosis 700 mg/kg BB tartrazine dan 500 mg/kg BB ekstrak rambut jagung, dan perlakuan 2 dengan dosis 700 mg/kg BB tartrazine dan 1000 mg/kg BB ekstrak rambut jagung selama 28 hari secara oral. Hasil penelitian menunjukkan bahwa terdapat beberapa senyawa seperti Cyclooctane-d16, Trichloroacetic Acid, Deuterated Chloroform, Tetradecamethyl-Cycloheptasiloxan, dan Hexadecamethyl-Cyclooctasiloxane. Pemberian ekstrak rambut jagung mampu mempertahankan kecerdasan kognitif dalam tes rasa ingin tahu, mencegah degenerasi sel korteks nukleat, serta secara signifikan menekan akumulasi malondialdehid pada tikus yang diinduksi tartrazine. Temuan ini menunjukkan bahwa ekstrak rambut jagung memiliki sifat dalam melindungi struktur dan fungsi sistem saraf dari kerusakan yang disebabkan oleh tartrazine.

Kata Kunci: *Rambut Jagung, Tartrazine, Kecerdasaan, Malondialdehyde, Korteks Serebral.*

