

Efek Konsumsi Teh *Ready to Drink* Terhadap Metabolisme dan Perilaku Mencit (*Mus Musculus Linnaeus*, 1758) Jantan Galur DDY

Azki Afidati Putri Anfa
Fakultas Biologi, Universitas Gadjah Mada
Email : azkiafidati95@mail.ugm.ac.id

INTISARI

Minuman teh siap minum (*ready to drink*; RTD) menjadi salah satu minuman favorit yang banyak dikonsumsi di Indonesia. Minuman ini mengandung senyawa bioaktif dari daun teh (*Camellia sinensis*) yang bermanfaat bagi kesehatan serta mengandung kadar gula yang cukup tinggi yang dapat memberikan dampak negatif terhadap kesehatan tubuh, termasuk sindrom metabolik dan perubahan perilaku seperti depresi dan kecemasan pada mencit. Penelitian ini bertujuan untuk mempelajari pengaruh konsumsi teh RTD jangka panjang terhadap gangguan metabolisme dan perubahan perilaku pada mencit remaja. Mencit jantan galur DDY (usia 4 minggu) diberi perlakuan minuman dengan larutan sukrosa 10% dan 4 sampel teh RTD yang berbeda secara oral selama 9 minggu. Parameter yang diamati dalam penelitian meliputi perubahan berat badan, kadar glukosa darah, uji toleransi glukosa, kadar kolesterol darah, *open field test* (OFT), *object recognition test* (ORT), *forced alternation test* (T-maze), *splash test* (ST), dan *tail suspension test* (TST). Setelah 9 minggu perlakuan, mencit yang diberi larutan sukrosa 10% terindikasi mengalami gangguan metabolisme dengan peningkatan berat badan, kolesterol total darah, dan kadar glukosa darah puasa di atas normal dan gangguan toleransi glukosa. Kelompok sampel teh RTD menunjukkan peningkatan berat badan, kolesterol total, dan kadar glukosa puasa. Pada uji perilaku, kelompok sukrosa 10% cenderung mengalami penurunan aktivitas eksplorasi pada OFT dan memiliki perilaku seperti depresi berdasarkan rendahnya aktivitas mobilitas pada TST. Satu kelompok sampel teh RTD menunjukkan peningkatan memori kerja berdasarkan uji T-Maze. Konsumsi teh RTD jangka panjang pada mencit meningkatkan risiko perubahan metabolisme dan perilaku.

Kata kunci : anxiety, depresi, metabolisme, minuman teh RTD

Consumption Effect of Ready-To-Drink Tea on the Metabolism and Behavior of DDY Mice (*Mus Musculus Linnaeus*, 1758)

Azki Afidati Putri Anfa
Faculty of Biology, Universitas Gadjah Mada
Email : azkiafidati95@mail.ugm.ac.id

ABSTRACT

Ready-to-drink (RTD) tea is one of the favorite drinks that are widely consumed in Indonesia. This drink contains bioactive compounds from tea leaves (*Camellia sinensis*), is beneficial for health, and contains high levels of sugar that negatively impact the body, including metabolic syndrome and behavioral changes such as depressive- and anxiety-like behavior in mice. This study aims to learn the effect of long-term consumption of RTD tea on metabolic disorders and behavioral changes in adolescent mice. DDY male mice (4 weeks old) were treated with 10% sucrose solution and 4 different RTD tea samples using a feeding device every day for 9 weeks. Parameters observed in the study included changes in body weight, blood glucose levels, glucose tolerance test, blood cholesterol levels, open field test, object recognition test, force alternation test (T-maze), and the tail suspension test. After 9 weeks of treatment, mice treated with 10% sucrose solution were indicated to have metabolic disorders with increased body weight gain, total blood cholesterol, and fasting blood glucose levels above normal and impaired glucose tolerance. RTD tea samples group showed increased body weight gain, total cholesterol, and fasting glucose level. In the behavioral test, 10% sucrose group tended to decrease exploration activity in the open field test and increase depression-like behavior based on low mobility activity. One group of RTD tea samples showed an increase in working memory based on the force alternation test (T-Maze). Long-term RTD tea consumption in mice increases the risk of metabolic and behavioral change.

Keywords: Anxiety, depression, memory, metabolic syndrome, ready-to-drink tea