ABSTRAK

Latar Belakang: Konsumsi makanan yang tinggi kalori dalam jangka waktu yang lama menjadi penyebab obesitas dan inflamasi. Buah leunca mengandung berbagai fitokimia yang berperan sebagai antioksidan, antiobesitas, dan antiinflamasi.

Tujuan: Menganalisis pengaruh pemberian buah leunca yang diberikan bersamaan pada awal perlakuan dengan diet tinggi lemak dan sukrosa (HFSD) terhadap perubahan berat badan dan status inflamasi.

Metode: Jenis penelitian ini adalah *experimental* dengan desain penelitian *Randomized Post Test Only Control Group Design.* Sampel sebanyak 30 ekor tikus jantan galur *Sparague Dawley* dibagi menjadi 5 kelompok. K_1 pakan standar, K_2 diinduksi HFSD, X_1 HFSD+leunca 0,8g/200gBB, X_2 HFSD+leunca 1,6g/200gBB, dan X_3 HFSD+leunca 2,4g/200gBB. Penelitian dilakukan di Laboratorium Gizi Pusat Studi Pangan dan Gizi Antar Universitas Gadjah Mada (PSPG PAU UGM) Yogyakarta pada bulan Januari-Maret 2024. Penimbangan berat badan dilakukan setiap minggu menggunakan timbangan digital. TNF-α dan IL-6 diukur dengan metode ELISA. Data dianalisis dengan uji ANOVA dan Post Hoc.

Hasil: Pada 100 gram buah leunca terkandung serat sebesar 2,3% dan vitamin C sebesar 25 mg yang berpotensi sebagai antiobesitas dan antiinflamasi. Semakin tinggi pemberian dosis leunca, semakin sedikit kenaikan berat badan, TNF-α, dan IL-6 secara bermakna diseluruh kelompok perlakuan. Dosis tertinggi (X_3) memberikan efek terbaik terhadap mencegah kenaikan berat badan, TNF-α, dan IL-6. Kadar TNF-α dan IL-6 pada kelompok X_3 adalah 6,90 pg/ml dan 68,77 pg/ml, tetapi nilai ini belum dapat setara dengan kelompok K_1 pakan standar.

Kesimpulan: Buah leunca dapat mencegah kenaikan berat badan serta menurunkan kadar sitokin proinflamasi (TNF-α dan IL-6) pada tikus yang diinduksi HFSD bersamaan dengan pemberian leunca.

Kata Kunci: Antiinflamasi; Antiobesitas; Buah Leunca (*Solanum nigrum*); Komponen Bioaktif

ABSTRACT

Background: Consumption of high-calorie foods over a long period of time is a cause of obesity and inflammation. Leunca fruit contains several phytochemicals that act as antioxidants, anti-obesity and anti-inflammatory agents.

Objective: To analyse the effect of leunca fruit given at the beginning of treatment with high fat and sucrose diet (HFSD) on changes in body weight and inflammatory status.

Methods: This study was an experimental study with a randomised post-test only control group design. The sample was 30 male Sparague Dawley rats and divided into 5 groups. K_1 standard feed, K_2 induced HFSD, X_1 HFSD+leunca 0,8g/200gBB, X_2 HFSD+leunca 1,6g/200gBB, and X_3 HFSD+leunca 2,4g/200gBB. The study was conducted at Center for Food and Nutrition Studies, Gadjah Mada University (PSPG PAU UGM), Yogyakarta, from January to March 2024. Body weight was measured weekly using a digital scale. TNF-α and IL-6 levels measured by ELISA method. Data were analysed by ANOVA and Post Hoc.

Results: 100g of leunca contains 2,3% fibre and 25mg vitamin C, which has anti-obesity and anti-inflammatory potential. The higher dose of leunca, the less significant weight gain, TNF-α, and IL-6 in all treatment groups. The highest dose (X_3) gave the best effect in preventing weight gain, TNF-α, and IL-6. The levels of TNF-α, and IL-6 in X_3 group were 6.90 pg/ml and 68.77 pg/ml. However, these values were not equivalent to the standard feed K_1 group.

Conclusion: Leunca fruit can prevent weight gain and reduce proinflammatory cytokine levels (TNF-α and IL-6) in HFSD-induced rats along with leunca administration.

Keywords: Antiinflammation; Antiobesity; Bioactive Compounds; Leunca Fruit (Solanum nigrum)