

**PENGARUH PEMBERIAN UBI UNGU (*Ipomea Batatas* Var. *Antin 3*)
TERHADAP KADAR C-REACTIVE PROTEIN DAN JUMLAH
LEUKOSIT PADA AKTIVITAS FISIK BERAT**

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ABSTRAK

Latar Belakang : Aktivitas fisik yang berat hingga kelelahan akan menjadi ketidakseimbangan antara produksi radikal bebas dan sistem pertahanan antioksidan tubuh yang dikenal sebagai stres oksidatif. Stres oksidatif mengakibatkan kerusakan jaringan yang memicu respon reaksi inflamasi fase akut ditandai dengan peningkatan kadar c-reactive protein (CRP) dan jumlah leukosit dalam mempertahankan kondisi sistem imunitas. Keadaan ini dapat dinetralisir dengan mengkonsumsi makanan yang mengandung antioksidan dari bahan alami seperti ubi ungu.

Tujuan : Untuk membuktikan pengaruh pemberian ubi ungu terhadap penurunan kadar CRP dan jumlah leukosit pada aktivitas fisik berat

Metode : Penelitian menggunakan ekperimental dengan pendekatan *post test only control group design*. Subyek penelitian berjumlah 20 ekor tikus jantan galur wistar yang dibagi secara acak menjadi 4 kelompok. Kelompok K tidak diberi ubi ungu dan tidak diberi aktivitas fisik berat. Kelompok P1 tidak diberi ubi ungu namun diberi aktivitas fisik berat. Kelompok P2 dan P3 diberi aktivitas fisik berat dan ubi ungu masing-masing dengan dosis 2,7mg/200gBB/hari dan 3,6mg/200gBB/hari. Pada hari ke 27 dilakukan pengambilan darah untuk pemeriksaan jumlah leukosit di IBL Fakultas Kedokteran UNISSULA dan pemeriksaan CRP di laboratorium Patologi Klinik FKMK UGM, pada Juli - Agustus 2020.

Hasil : Rerata kadar CRP terendah pada kelompok P3 dibanding kelompok P2 dan K namun rerata jumlah leukosit terendah pada kelompok K, dibanding kelompok P2 dan P3. Uji *Mann Whitney* menunjukkan kadar CRP pada kelompok K terdapat perbedaan signifikan terhadap kelompok P1 dengan nilai $p=0,009$ ($p<0,05$), namun tidak terdapat perbedaan signifikan terhadap kelompok P2 ($p=0,834$) dan kelompok P3 ($p=0,402$). Sementara itu, jumlah leukosit pada kelompok K terdapat perbedaan signifikan terhadap kelompok P1 dan kelompok P3 dengan masing-masing nilai $p=0,009$ dan $p=0,028$ ($p<0,05$) serta tidak terdapat perbedaan signifikan terhadap kelompok P2 ($p=0,251$).

Kesimpulan: Pemberian ubi ungu dengan dosis 2,7mg/200gBB/hari dan 3,6mg/200gBB/hari dapat menurunkan kadar CRP dan jumlah leukosit pada tikus jantan galur wistar yang diberi aktivitas fisik berat.

Kata Kunci : Ubi ungu, c-reactive protein, jumlah leukosit,

THE EFFECT OF GIVING PURPLE UBI (*Ipomea Batatas* Var. Antin 3) TO C-REACTIVE PROTEIN LEVELS AND THE SUM OF LEUKOCYTES ON STRENUOUS PHYSICAL ACTIVITY

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ABSTRACT

Background: Strenuous physical activity to fatigue will create an imbalance between the production of free radicals and the body's antioxidant defense system known as oxidative stress. Oxidative stress results in tissue damage that triggers an acute-phase inflammatory reaction response characterized by increased levels of c-reactive protein (CRP) and the sum of leukocytes in maintaining the condition of the immune system. This situation can be neutralized by consuming foods that contain antioxidants from natural ingredients such as purple sweet potato.

Objective: To prove the effect of giving purple sweet potato on the reduction of CRP levels and leukocytes sum on strenuous physical activity.

Methods: This study used an experimental study with a *post test only control group design* approach. The research subjects were 24 male Wistar rats divided randomly into 4 groups. Group K was not given purple sweet potatoes and was not given heavy physical activity. Group P1 was not given purple sweet potato but was given heavy physical activity. Group P2 and P3 were given heavy physical activity and purple sweet potato, respectively, at a dose of 2.7mg / 200gBB / day and 3.6mg / 200gBB / day, respectively. On the 27th day, blood was drawn for examination of the sum of leukocytes at the IBL Faculty of Medicine UNISSULA and CRP examination at the Clinical Pathology Laboratory of FKKMK UGM, from July - August 2020.

Results: The lowest mean CRP levels were in the P3 group compared to the P2 and K groups but the lowest mean leukocyte counts were in the K group, compared to the P2 and P3 groups. *The Mann Whitney* test showed that the CRP levels in the K group were significant differences in the P1 group with a value of $p = 0.009$ ($p < 0.05$), but there was no significant difference between the P2 group ($p = 0.834$) and the P3 group ($p = 0.402$). Meanwhile, the sum of leucocytes on group K had a significant difference in group P1 and group P3 with $p = 0.009$ and $p = 0.028$ ($p < 0.05$), and there was no significant difference in group P2 ($p = 0.251$).

Conclusion: The giving of purple sweet potato at a dose of 2.7 mg / 200 gBB / day and 3.6 mg / 200gBB / day can reduce CRP levels and the sum of leukocytes on male Wistar rats given strenuous physical activity.

Keywords: *purple sweet potato, c-reactive protein, the sum leucocytes, strenuous physical activity*