

## INTISARI

### **KEMAMPUAN TEPUNG DAMIN CEMPEDAK TINGGI SERAT DALAM PERBAIKAN PROFIL LIPID DAN DIGESTA PADA TIKUS *SPRAGUE DAWLEY* HIPERKOLESTEROL**

Hiperkolesterol merupakan salah satu faktor resiko utama penyakit jantung koroner. Perbaikan kondisi hiperkolesterol dapat dilakukan dengan pemberian obat dan mengubah pola konsumsi. Pangan tinggi serat dipercaya dapat mengurangi resiko terjadinya kondisi hiperkolesterol. Damin cempedak merupakan salah satu sumber serat pangan yang tinggi dan berperan penting dalam menurunkan kadar kolesterol.

Penelitian ini dibagi menjadi dua tahapan, yaitu pembuatan Tepung Damin Cempedak Tinggi Serat (TDC TS) dan intervensi TDC TS pada tikus *Sprague Dawley* (SD). Tikus SD sebanyak 30 ekor dibagi menjadi 5 kelompok dengan jumlah tikus 6 ekor setiap kelompok. Pakan tikus dibedakan menjadi 5 yaitu Normal, Kontrol Negatif, Kontrol Positif, TDC TS5 dan TDC TS10. Semua kelompok kecuali Normal, dikondisikan menjadi hiperkolesterol dengan induksi pakan tinggi lemak menggunakan lemak sapi sebanyak 18% selama 7 hari. Kelompok Normal, Kontrol Negatif dan Kontrol Positif diberi pakan standar AIN-93M. TDC TS menggantikan kalori pakan standar AIN-93M sebesar 5% (TDC TS5) dan 10% (TDC TS10). Pemberian pakan intervensi dilakukan selama 28 hari.

Hasil penelitian menunjukkan, TDC TS mempunyai kandungan serat pangan total 85.06% (db), serat larut 6.62% (db) dan serat tidak larut 78.44% (db). Pengaruh substitusi TDC TS efektif terhadap penurunan LDL dan peningkatan HDL, tetapi belum efektif pada penurunan trigliserida dan kolesterol total sehingga belum dapat menurunkan nilai *atherogenic index of plasma* pada tingkat aman. Pool SCFA tertinggi dihasilkan kelompok TDC TS10 dan kadar kolesterol sekum paling tinggi dihasilkan kelompok Kontrol Positif. Pola perbaikan TDC TS 10% mempunyai kemiripan dengan perbaikan profil lipid dan digesta oleh ezetrol. Substitusi TDC TS 10% dapat memperbaiki profil lipid dan digesta tikus hiperkolesterol lebih baik dibanding dengan substitusi TDC TS 5%.

Kata kunci : tinggi serat, tepung damin cempedak, serat pangan, hiperkolesterol, profil lipid, digesta, SCFA

*ABSTRACT*

**POTENCY OF HIGH FIBER DAMIN CEMPEDAK FLOUR OF LIPID PROFILE AND DIGESTA IMPROVEMENT IN HYPERCHOLESTEROLEMIC *SPRAGUE DAWLEY* RATS**

Hypercholesterol is one of the primary risk factor of coronary heart disease. Drugs administration and healthy dietary habit can improve the hypercholesterolemic condition. Foods rich in dietary fiber were believe to reduce the risk of hypercholesterol. Damin cempedak, a good source of dietary fiber and was hypotized to have an important role in reducing cholesterol concentration.

This study was divided into two steps, which were preparation of high fiber damin cempedak (HFDC) flour and intervention of HFDC flour in *Sprague Dawley* (SD) rats. Thirty (30) were divided into 5 groups of 6 rats. They were fed 5 different diets, Normal, Negative Control, Positive Control, HFDCF 5 and HFDCF 10. All groups except the Normal, were induced into hypercholesterol using high-fat feed with beef tallow as much as 18% for 7 days. Normal group, Negative Control and Positive Control group were fed with AIN-93M standard diet. In the HFDCF 5 and HFDCF 10, the calories of the diets were replaces with 5% and 10% of HFDC flour, respectively. The intervention conducted for 28 days.

The result showed that HFDCF had a total dietary fiber content of 85.06% (db), 6.62% (db) soluble fiber and insoluble fiber 78.44% (db). Substitution of HFDCF reduced LDL and increased HDL effectively, but not effective in triglycerides and total cholesterol, thus could not lower the value of atherogenic index of plasma at a save level. Highest pool of SCFA was found in HFDCF 10 group and highest cholesterol levels of caecum was found in Positive Control group. The improvement of lipid profile and digesta by HFDCF 10 was similar with Positive Control group that treat by ezetrol. The HFDCF 10% substitution could improved the lipid profile and digesta hypercholesterolemia rats better compared with HFDCF 5%.

Keywords : high fiber, damin cempedak flour, dietary fiber, hypercholesterolemic, lipid profile, digesta, SCFA