

INTISARI

Semakin banyaknya masyarakat yang menderita penyakit-penyakit degeneratif mendorong dikembangkannya makanan kesehatan, diantaranya produk probiotik. Dalam penelitian terdahulu telah diteliti kemampuan *Lactobacillus* sp. Dad13 dalam menurunkan kolesterol secara *invitro*. Namun belum banyak penelitian/informasi mengenai suplementasi probiotik pada saribuah dan efek hipokolesterolemik secara *invivo* pada hewan coba. Tujuan dari penelitian ini adalah mempelajari pengaruh pemberian sel probiotik *Lactobacillus* sp. Dad13 yang disuplementasikan dalam saribuah pepaya-nanas terhadap lipida serum dan sifat digesta tikus *Sprague Dawley*. Empat puluh delapan tikus dibagi menjadi 8 kelompok, masing-masing 6 tikus. Empat kelompok diberi pakan hiperkolesterol dan 4 kelompok lainnya diberi pakan standard secara *ad libitum*. Masing-masing kelompok mendapat kontrol skim, biomassa sel *Lactobacillus* sp. Dad13, saribuah pepaya-nanas dan saribuah pepaya-nanas-*Lactobacillus* sp. Dad13 secara *force feeding*. Analisa profil lipid serum dilakukan setelah pemberian pakan standard (adaptasi), hiperkolesterol dan setelah intervensi. Pada akhir perlakuan, tikus dibedah dan diambil digesta untuk pengujian kadar air, pH, berat, kolesterol dan total bakteri asam laktat. Hasil penelitian menunjukkan bahwa pada tikus hiperkolesterol, pemberian biomassa sel *Lactobacillus* sp. Dad13 dapat menurunkan kolesterol dan LDL secara nyata ($P < 0,05$) dibanding skim. Pada tikus dengan pakan standard, pemberian saribuah pepaya-nanas-*Lactobacillus* sp. Dad13 dapat menurunkan kolesterol, LDL dan trigliserida secara nyata ($P < 0,05$) dibanding skim serta dapat menurunkan nilai indeks aterogenik paling besar. Pemberian probiotik *Lactobacillus* sp. Dad13 dapat meningkatkan total bakteri asam laktat dalam digesta. Berat dan kadar air digesta ke-3 perlakuan tidak berbeda dibanding skim baik pada pakan standard maupun pakan hiperkolesterol. pH terendah pada pemberian saribuah pepaya-nanas untuk pakan hiperkolesterol dan *Lactobacillus* sp. Dad13 pada pakan standard. Dari hasil penelitian dapat disimpulkan diet dan jumlah sel sangat mempengaruhi efektifitas penurunan kolesterol pada tikus *Sprague Dawley*.

Kata kunci : Probiotik, profil lipid, *Lactobacillus* sp. Dad13, saribuah pepaya-nanas

ABSTRACT

The increasing number of people suffering from degenerative disease, such as atherosclerosis has stimulated the development of healthy foods. The new researchs have indicated cholesterol reduction effect of *Lactobacillus* sp. Dad13 an *in vitro* study. But information about supplementation probiotics in juice and effect of hypocholesterolemic in rats were not many. The purpose of this research was to study effect of *Lactobacillus* sp. Dad13 which supplemented in papaya-pineapple juice on serum lipid and caecal characteristics in *Sprague Dawley* rats. Forty eight male rats divided into eight groups of six rats each. Four groups given hypercholesterol diet and the others fed with standard diet. Each group treated with 10% sterile skimmed milk, *Lactobacillus* sp. Dad13 culture, papaya-pineapple juice and papaya-pineapple juice which supplemented with *Lactobacillus* sp. Dad13. The treatment were given by force feeding. Lipid profile were measured after adaptation, hypercholesterol and intervention step. At the end of the week, rats were killed and caecal were collected to measure water content, pH, weight, cholesterol and lactic acid bacteria. The results showed that in the group fed hypercholesterol diet and treated with *Lactobacillus* sp. Dad13 could reduce cholesterol and low density lipoprotein (LDL) significantly ($P < 0,05$) than skim. In the group with standard diet and treated with papaya-pineapple-*Lactobacillus* sp. Dad13 juice, cholesterol, LDL, triglyceride (TG) and atherogenic index decreased significantly. Probiotics culture could raise lactic acid bacteria population in caecal. Weight and water content of caecal were not different than skim in all treatment. The lowest pH reached by treatment with papaya-pineapple-*Lactobacillus* sp. Dad13 juice in hypercholesterol diet group and *Lactobacillus* sp. Dad13 in standard diet. In conclusion, the lower serum cholesterol influenced by diets and probiotics culture population.

Key words : probiotics, lipid profile, *Lactobacillus* sp. Dad13, papaya-pineapple juice