

INTISARI

Buah pepaya sudah dikenal dapat mengatasi konstipasi, namun komponen apa yang berpengaruh belum pernah dipublikasikan. Pengaruh tingkat kematangan dan bentuk tepung terhadap sifat laksatif juga belum pernah diteliti. Tujuan penelitian ini adalah untuk menentukan sifat fisik dan kimia tepung pepaya Bangkok pada tingkat kemasakan tua (*green mature stage*) dan matang (*ripe stage*). Pengaruh konsumsi tepung pepaya terhadap sifat laksatif pada tikus juga dievaluasi.

Slurri pepaya dikeringkan dengan pengering beku, kemudian ditentukan sifat fisik (kelarutan) dan sifat kimianya (proksimat, serat pangan larut dan tak larut, pati dan komposisi gula). Empat puluh ekor tikus *Sprague Dawley* jantan (bobot 255-330g) secara random diperlakukan salah satu dari keempat perlakuan berikut: 1) diet Standar (STD), 2) diet Tepung Pepaya Tua (PT), 3) diet Tepung Pepaya Matang (PM), 4) diet Mannitol (M), selama 14 hari. Diet STD, PT, PM, dan M berturut-turut mengandung: selulosa 5%, serat pangan 5%, serat pangan 5% + manitol 6%, selulosa 5% + manitol 6%. Digesta dari cekum diambil pada akhir penelitian dan dievaluasi berat, kadar air, pH dan konsentrasi *short chain fatty acid* (SCFA).

Sebagai hasil diperoleh kelarutan (persentase bahan terlarut dari 1% tepung dalam air) tepung pepaya tua dan matang berturut-turut 83,46% dan 91,91%. Berbeda dengan tepung pepaya tua yang hanya mengandung glukosa + fruktosa (66%), tepung pepaya matang juga mengandung manitol (51,11%). Mannitol tergolong dalam bahan laksatif (*osmotic laxatives*) seperti halnya sorbitol. Berat digesta cekum tikus kelompok STD, PT dan PM bervariasi antara 1,15 – 1,28 g namun tidak berbeda nyata, sedangkan kelompok M berbeda nyata (α 5%) dengan berat digesta 3,13 g. Kadar air digesta dari kelompok diet PT, PM dan M cenderung lebih tinggi dibanding kelompok diet STD namun tidak berbeda nyata. Penurunan pH terbesar terjadi pada kelompok diet M (6,34) diikuti kelompok diet PM (6,47) dan diet PT (6,52). Konsentrasi asam butirat kelompok diet PT dan PM lebih tinggi dari diet STD dan M, namun diet PM tidak berbeda nyata dengan diet STD dan M. Rasio molar SCFA tidak berbeda nyata diantara keempat kelompok dengan nilai 59-61% untuk asam asetat, 24-26% untuk asam propionat dan 14-16% untuk asam butirat.

Kata kunci: tepung pepaya Bangkok tua (*green mature stage*) dan matang (*ripe stage*), laksatif, manitol, kadar air digesta cekum, *short chain fatty acid* (SCFA)

ABSTRACT

Carica papaya fruit known as constipation relief but what kind of the influence component was never been published. Effect of the stage of maturity and the dried of papaya on laxative properties were also never investigated. The purpose of this study was to determine the chemical and physical properties of Thailand-type of papaya powder at the green mature and ripe stage. Consumption effect of papaya powder on the laxative properties in rats was also evaluated.

Papaya slurry was dried by freeze drier and then the physical properties (solubility) and chemical properties (proximate, soluble and insoluble dietary fiber, starch and sugar composition) were determined. Forty male *Sprague Dawley* rats (255-330g) randomly assigned to one of four treatments: 1) Standard diet (STD), 2) Green Mature Stage of Papaya Powder diet (PT), 3) Ripe Stage of Papaya Powder diet (PM), or 4) Mannitol diet (M) for 14 days. STD, PT, PM and M diets consist of 5% cellulose, 5% dietary fiber, 5% dietary fiber + 6% mannitol, and 5% cellulose + 6% mannitol, respectively. The digesta were collected from the caecum in the end of experiment and were evaluated for weight, moisture content, pH and short chain fatty acid (SCFA) concentration.

It was found that the solubility (measured as percentage of soluble material of 1% powder in water) of green mature and ripe papaya powder were 83,46% and 91,91%, respectively. Ripe papaya powder contained 51,11% of mannitol, differ from green mature papaya powder which only contained glucose and fructose. Mannitol like sorbitol has laxative potential, especially as osmotic laxatives. Weight of digesta was not significantly different between STD, PT and PM varied from 1,15 to 1,28g; while M diet (3,13g) was significantly different. Generally, moisture content was higher from PT, PM and M diets compared with STD diet, but was not significantly different. Decreasing of pH were highest in the M group (6,34) following by PM (6,47) and PT (6,52) groups. Butyrate concentration of PT and PM diets were higher than STD and M diets, but PM diet was not significantly different compared with STD and M diets. Molar ratio of SCFA was not significantly different between the groups on the value of 59 – 61% for acetate, 24 – 26% for propionate, 14 -16% for butyrate.

Keywords: papaya powder, green mature stage, ripe stage, laxative, mannitol, moisture content of cecal, short chain fatty acid (SCFA)