

## ABSTRAK

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### **PEMANFAATAN FILTRAT TEPUNG UMBI DAHLIA MERAH SEBAGAI SUMBER PREBIOTIK PADA PRODUKSI *YOGHURT* SINBIOTIK**

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(xiv + 64 halaman; 15 gambar; 9 tabel; 18 lampiran)

*Yoghurt* adalah salah satu minuman probiotik yang memanfaatkan bakteri asam laktat dalam proses pembuatannya dan sudah banyak dikenal oleh masyarakat. *Yoghurt* dibuat dari susu hewani yang menyebabkan  *yoghurt* tidak dapat dikonsumsi oleh vegetarian. Oleh karena itu,  *yoghurt* dikembangkan menggunakan sari kacang merah dengan penambahan filtrat tepung umbi dahlia. Sari kacang merah dan filtrat tepung umbi dahlia dianalisis kadar serat pangan dan inulin. Sari kacang merah memiliki kadar serat pangan  $3,21 \pm 0,06\%$  dan kadar inulin  $5,53 \pm 0,10$  mg/mL sedangkan filtrat tepung umbi dahlia mengandung kadar serat pangan  $2,21 \pm 0,09\%$  dan kadar inulin  $32,25 \pm 5,64$  mg/mL. Konsentrasi filtrat tepung umbi dahlia yang digunakan dalam penelitian adalah 0%, 3%, 6%, dan 9% v/v. Adapun rasio kultur *starter* yang digunakan antara lain 1:1:1, 1:1:2, 1:2:1, dan 2:1:1. *Yoghurt* sinbiotik dianalisis pH, total bakteri asam laktat, viskositas, total asam tertitrasi, dan total padatan terlarut. *Yoghurt* sinbiotik terpilih adalah  *yoghurt* dengan konsentrasi filtrat tepung umbi dahlia 3% dan rasio kultur *starter* 1:1:2. *Yoghurt* sinbiotik tersebut memiliki nilai pH  $3,64 \pm 0,02$ , total bakteri asam laktat  $9,430 \pm 0,20$  log CFU/mL, nilai viskositas  $62,50 \pm 4,85$  cP, total asam tertitrasi  $0,65 \pm 0,01\%$ , dan total padatan terlarut  $12,20 \pm 0,16^\circ$ Brix. Setelah itu, dilakukan pembuatan  *yoghurt* sinbiotik dengan perlakuan terpilih yang kemudian akan dianalisis ketahanan terhadap asam dan kadar protein. *Yoghurt* sinbiotik terpilih memiliki ketahanan terhadap asam hingga pada pH 3 dan kadar protein  $6,27 \pm 0,45\%$ .

Kata Kunci: Bakteri asam laktat, kacang merah, sinbiotik, umbi dahlia, vegetarian,  *yoghurt*

Referensi: 87 (2005-2022)

## ABSTRACT

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### **UTILIZATION OF RED DAHLIA TUBER FLOUR FILTRATE AS PREBIOTIC SOURCE IN THE PRODUCTION OF SYNBIOTIC YOGHURT**

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(xiv + 64 pages; 15 figures; 9 tables; 18 appendices)

Yoghurt is one of the probiotic drinks that utilize lactic acid bacteria in its making process and has been widely known by the public. Yoghurt is made from a dairy milk so it can't be consumed by vegetarians. Therefore, yoghurt is developed using red bean juice with addition of dahlia tuber flour filtrate. Red bean juice and dahlia tuber flour filtrate are analyzed for dietary fiber and inulin content. Red bean juice has dietary fiber content  $3,21 \pm 0,06\%$  and inulin content  $5,53 \pm 0,10$  mg/mL while dahlia tuber flour filtrate has dietary fiber content  $2,21 \pm 0,09\%$  and inulin content  $32,25 \pm 5,64$  mg/mL. The concentration of dahlia tuber flour filtrate used in the study was 0%, 3%, 6%, and 9% v/v. Ratio of starter culture used in the study was 1:1:1, 1:1:2, 1:2:1, and 2:1:1. Synbiotic yoghurt were then analyzed for pH, total lactic acid bacteria, viscosity, total titratable acidity, and total dissolved solids. The selected synbiotic yoghurt is yoghurt with concentration of dahlia tuber flour filtrate 3% and ratio of starter culture 1:1:2. The selected synbiotic yoghurt has pH value  $3,64 \pm 0,02$ , total lactic acid bacteria  $9,430 \pm 0,20$  log CFU/mL, viscosity value  $62,50 \pm 4,85$  cP, total titratable acidity  $0,65 \pm 0,01\%$ , and total dissolved solids  $12,20 \pm 0,16^\circ$  Brix. After that, the selected synbiotic yoghurt were made then analysed for acid resistance and protein content. The selected synbiotic yoghurt has acid resistance up to pH 3 and protein content  $6,27 \pm 0,45\%$ .

Keywords: Dahlia tuber, lactic acid bacteria, red bean, synbiotic, vegetarian, yoghurt

Reference: 87 (2005-2022)