

Aktivitas antioksidan hasil fermentasi infusa daun moringa oleifera lam. oleh lactobacillus plantarum InaCC B997 pada konsentrasi substrat 5% = Antioxidant activity of fermented moringa oleifera lam. leaves infusion using lactobacillus plantarum InaCC B997 at 5% substrate concentration.

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Abstrak

Moringa oleifera Lam. merupakan salah satu tanaman herbal di Indonesia yang mengandung senyawa antioksidan alami. Penelitian dilakukan untuk mengetahui perubahan aktivitas antioksidan pada konsentrasi substrat 5% hasil fermentasi oleh *Lactobacillus plantarum* InaCC B997 selama 24 jam. Ekstraksi senyawa antioksidan pada serbuk daun *M. oleifera* dilakukan dengan metode infusa, pada suhu 85C selama 30 menit. Aktivitas antioksidan diukur dengan metode DPPH (Diphenyl Picrylhydrazyl) dan mengukur konsentrasi senyawa antioksidan yang mampu menghambat 50% sifat radikal bebas dalam DPPH (Nilai IC50). Hasil penelitian menunjukkan nilai IC50 infusa daun *M. oleifera* kontrol (nonfermentasi) ialah 137,15 g/mL, sedangkan pada sampel infusa hasil fermentasi batch I, II, dan III berturut-turut ialah  $155,10 \pm 14,59$  g/mL,  $165,20 \pm 2,81$  g/mL, dan  $189,77 \pm 3,05$  g/mL. Penelitian menunjukkan bahwa fermentasi infusa daun *M. oleifera* Lam. pada konsentrasi 5% oleh *L. plantarum* InaCC B997 menurunkan aktivitas antioksidan sebesar 13,08%, 20,45%, dan 38,36% pada batch I, II, dan III.

.....Moringa oleifera Lam. is one of the herbal plants in Indonesia that contains natural antioxidant compounds. The aim of this research is to determine the antioxidant activity of fermented *M. oleifera* Lam. leaf infusion at 5% concentration using *Lactobacillus plantarum* InaCC B997 for 24 hours. The extraction of antioxidant compounds in *M. oleifera* Lam. leaf powder was carried out by infusion method at 85C for 30 minutes. Antioxidant activity was measured using the 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging method and was evaluated based on the concentration of antioxidant compounds that were able to inhibit 50% of DPPH (Inhibitory Concentration 50). The result showed that unfermented leaf infusion had IC50 value of 137.15 g/mL, while the fermented leaf infusion had IC50 value of  $155.10 \pm 14.59$  g/mL,  $165.20 \pm 2.81$  g/mL, and  $189.77 \pm 3.05$  g/mL in batch I, II, and III, respectively. This study showed that fermentation of *M. oleifera* Lam. leaf infusion at concentration of 5% using *L. plantarum* InaCC B997 had reduced antioxidant activity when compared to nonfermented leaf infusion at 13.08%, 20.45%, and 38.36% in batch I, II, and III, respectively.