

**Pengaruh Konsumsi Probiotik *Indigenous Powder Lactobacillus plantarum* Dad-13 pada siswa di SMPN 1 Pangururan, Samosir Terhadap Populasi Gut Microbiota (*Bifidobacterium*, *Lactobacillus plantarum*, *Enterobacteriaceae*) dan Short Chain Fatty Acid**

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**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian probiotik *powder Lactobacillus plantarum* Dad-13 terhadap jumlah *Bifidobacterium*, *Lactobacillus plantarum*, *Enterobacteriaceae*, *Short Chain Fatty Acid* (SCFA) dan karakteristik feses remaja sehat. Penelitian ini dilakukan di SMPN 1 Pangururan, Samosir dengan *a randomized double-blind parallel placebo-controlled trial*. 54 remaja sehat berusia 13 hingga 14 dibagi menjadi dua yang mengonsumsi produk *powder* yang mengandung skim (kelompok plasebo) dan probiotik *powder Lactobacillus plantarum* Dad-13 dengan  $1,18 \times 10^9$  CFU/*sachet* (kelompok probiotik). Hasil penelitian menunjukkan bahwa selama 33 hari intervensi, jumlah *Bifidobacterium*, *L. plantarum*, dan *Enterobacteriaceae* tidak terpengaruh secara signifikan ( $p > 0,05$ ) pada kelompok probiotik. Jumlah SCFA dan karakteristik feses pada kelompok plasebo dan probiotik sebelum dan sesudah intervensi tidak berbeda secara signifikan ( $p > 0,05$ ). Tetapi lebih banyak subyek dari kelompok probiotik yang mengalami peningkatan *Bifidobacterium*, *Lactobacillus plantarum*, dan penurunan *Enterobacteriaceae*. Subyek kelompok probiotik lebih banyak yang mengalami peningkatan SCFA daripada subjek dari kelompok plasebo. Dapat disimpulkan bahwa konsumsi serbuk probiotik *L. plantarum* Dad-13 belum mampu memberikan pengaruh yang signifikan terhadap perubahan jumlah *gut microbiota*, SCFA, dan karakteristik feses remaja yang sehat.

Kata kunci: *Lactobacillus plantarum* Dad-13, *Bifidobacterium*; *Lactobacillus plantarum*; *Enterobacteriaceae*; SCFA

**Effect of consumption indigenous probiotic powder of *Lactobacillus plantarum* Dad-13 of students SMPN1 Pangururan, Samosir on the population of gut microbiota (*Bifidobacterium*, *Lactobacillus plantarum*, *Enterobacteriaceae*) and Short Chain Fatty Acid**

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**ABSTRACT**

This study aims to determine the effect of probiotic powder *Lactobacillus plantarum* Dad-13 on the number of *Bifidobacterium*, *Lactobacillus plantarum*, *Enterobacteriaceae*, Short Chain Fatty Acid (SCFA) and fecal characteristic of healthy adolescent. This research was conducted at SMPN 1 Pangururan, Samosir with a randomized double-blind parallel placebo-controlled trial. 54 healthy adolescents aged 13 to 14 were divided into two who consuming a powder product containing skim (placebo group) and probiotic powder *Lactobacillus plantarum* Dad-13 with  $1.18 \times 10^9$  CFU/sachet (probiotic group). The results showed that for 33 days of intervention, the number of *Bifidobacterium*, *L. plantarum*, and *Enterobacteriaceae* did not affected significantly ( $p > 0.05$ ) in probiotic group. The amount of SCFA and fecal characteristics in the placebo dan probiotic group before and after taking the products did not differ significantly ( $p > 0.05$ ). But more subjects from the probiotic group had increased *Bifidobacterium*, *Lactobacillus plantarum*, and decreased *Enterobacteriaceae*. The subjects of the probiotic group experienced more increases in SCFA than the subjects in the placebo group. The conclusion is the consumption of probiotic powder *L. plantarum* Dad-13 has not been able to give a significant influence on changes in the number of gut microbiota, SCFA, and fecal characteristics of healthy adolescents.

Keyword: *Lactobacillus plantarum* Dad-13, *Bifidobacterium*; *Lactobacillus plantarum*; *Enterobacteriaceae*; Short Chain Fatty Acid.