UJI AKTIVITAS ANTIBAKTERI YOGHURT (*Lactobacillus bulgaricus* dan *Streptococcus thermophilus*) DALAM MENGHAMBAT PERTUMBUHAN BAKTERI *Vibrio cholerae* PENYEBAB PENYAKIT KOLERA

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ABSTRAK

Kolera merupakan penyakit epidemik gastrointestinal dalam keadaan berat ditandai dengan adanya diare hebat dengan tinja menyerupai air cucian beras *(rice water)*. Yoghurt merupakan produk susu fermentasi bantuan bakteri asam laktat (BAL) yang dipercaya memiliki aktivitas antimikrobial dalam mengurangi infeksi gastrointestinal dan dapat menghambat pertumbuhan bakteri patogen seperti *V.cholerae*. Tujuan penenelitian ini adalah mengetahui aktivitas bakteri asam laktat *(Lactobacillus bulgaricus dan Streptococcus thermophilus)* yoghurt dalam menghambat pertumbuhan bakteri *V.cholerae* penyebab penyakit kolera. Metode penelitian ini adalah *Posttest-only with Control Group Design.* Sampel terbagi dalam 10 kelompok konsentrasi 0%, 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, dan 45% kemudian dibandingkan kelompok pertumbuhan *V.cholerae* konsentrasi 0% (kelompok kontrol) dengan kelompok perlakuan. Rancangan yang digunakan pada penelitian ini menggunakan metode Rancangan Acak Lengkap (RAL). Analisis data untuk menguji perbedaan bermakna konsentrasi yoghurt menggunakan Uji *One Way ANOVA* dan dilanjutkan dengan Uji *Post-Hoc Bonferroni*. Hasil Uji *One Way ANOVA* menunjukkan bahwa terdapat perbedaan yang signifikan karena nilai p=0,000 (p<0,05). Hasil Uji *Post-Hoc Bonferroni* memiliki perbedaan yang signifikan dengan nilai p=0,000 (p<0,05). Persentase penghambatan pada konsentrasi 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, dan 45% sebesar 99,9991%, 99,992%, 99,994%, 99,995%, 99,996%, 99,997%, 99,998%, 99,999%, 100%. Kesimpulan yoghurt *(Lactobacillus bulgaricus* dan *Streptococcus thermophilus)* dapat menghambat pertumbuhan *V.cholerae* lebih dari 90% pada konsentrasi yoghurt 5% dan sebesar 100% pada konsentrasi yoghurt 45%.

Kata kunci: Bakteri asam laktat, yoghurt, antibakterial, *Vibrio cholerae*

THE EXAMINATION OF YOGHURT ANTIBACTERIAL ACTIVITY (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*) IN INHIBITING THE GROWTH OF *Vibrio cholerae*

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ABSTRACT

Cholera is a gastrointestinal epidemic disease in severe conditions characterized by the presence of prolonged diarrhea followed by the rice-water like stools. Yoghurt is a product of milk fermented by Lactic Acid Bacteria (LAB) believed having the antimicrobial activity in reducing the gastrointestinal infection and inhibiting the growth of pathogenic bacteria, such as *Vibrio cholerae*. The purpose of this research is to examine the activity of yogurt lactic acid bacteria (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*) in inhibiting the growth of *Vibrio cholerae* causing the cholera disease. This research used a Posttest-only method with a Control Group Design. Those samples were then divided into 10 groups with the concentration of respectively 0%, 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, and 45%. The *Vibrio cholerae* growth belonging to the group with the concentration of 0% (control group) was then compared to that belonging to the treatment groups. This research employed a completely randomized design. The data was analyzed to examine the significant different of yogurt concentrations by using One Way ANOVA and then followed with Post-Hoc Bonferroni test. The result of One Way ANOVA test showed that there was a significant different since the p value was equal to 0.000 ($p<0.05$). Meanwhile, the result of Post-Hoc Bonferroni test showed a significant different with the p value of equal to 0.000 ($p<0.05$). The inhibiting percentage at the concentration of 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, and 45% was respectively 99.9991%, 99.992%, 99.994%, 99.995%, 99.996%, 99.997%, 99.998%, 99.999%, and 100%. It can be concluded that the yogurt (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*) can inhibit the growth of *V.cholerae* more than 90% in yogurt concentration 5% and by 100% in yogurt concentration 45%.

Keywords: Lactic Acid Bacteria, yoghurt, antibacterial, *Vibrio cholerae*