**UJI DAYA ANTI BAKTERI PADA GEL *HAND SANITIZER* DARI KITOSAN CANGKANG LOBSTER AIR TAWAR (*Cherax quadricarinatus*) TERHADAP**

**BAKTERI *Escherichia coli***

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**ABSTRAK**

Kitosan yang diperoleh dari cangkang lobster air tawar dapat dimanfaatkan sebagai antibakteri dalam sediaan gel *hand sanitizer*. Tujuan penelitian ini adalah pembuatan kitosan dari cangkang lobster air tawar, dapat diformulasikan dalam bentuk sediaan gel *handsanitizer* yang stabil dan mempunyai aktivitas antibakteri terhadap bakteri *Escherichia coli*.

Pembuatan kitosan dilakukan mulai dari tahap demineralisasi, deproteinasi dan deasetilasi kemudian dilakukan karakterisasi dari kitosan yang meliputi kadar air, kadar abu, rendemen, kelarutan, dan dianalisis menggunakan spektrofotometer FTIR untuk mengetahui gugus fungsi dari kitosan. Kitosan yang diperoleh kemudian dibuat gel *hand sanitizer* dengan konsentrasi 1,5, 3, dan 4,5% kemudian dilakukan uji organoleptis, homogenitas, pH, daya sebar dan viskositas pada sediaan gel. Kemudian dilakukan pengujian anti bakteri terhadap bakteri *Escherichia coli.*

Hasil penelitian menunjukkan kitosan cangkang lobster air tawar memiliki kemiripan gugus fungsi dengan kitosan baku. Kemudian didapatkan nilai derajat deasetilasi sebesar 67,93%. Hasil uji parameter sediaan *handsanitizer* dilakukan uji organoleptis tidak menunjukan adanya perubahan bau, bentuk, dan warna pada sediaan, uji homogenitas menunjukkan tidak adanya butiran−butiran kasar, uji pH yang diperoleh rata−rata berada dalam range pH kulit, uji daya sebar juga menunjukkan rata−rata berada dalam rentang 5−7 cm sehingga formula memenuhi persyaratan. Hasil uji aktivitas antibakteri gel *hansanitizer* kitosan dapat membunuh bakteri *Escherichia coli* dengan zona hambat yang diperoleh pada konsentrasi 1,5% sebesar 8,16 mm, konsentrasi 3% sebesar 8,2 mm, dan konsentrasi 4,5% sebesar 8,8 mm, maka pada konsentrasi 4,5% menunjukkan daya hambat yang paling baik.

*Kata kunci: Kitosan, FTIR, Gel, Lobster air tawar*

***ANTI-BACTERIAL POWER TEST ON GEL HAND SANITIZER FROM FRESHWATER LOBSTER SHELL KITOSAN (Cherax quadricarinatus) AGAINST ESCHERICHIA COLI BACTERIA***

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***ABSTRACT***

*Chitosan obtained from freshwater lobster shells can be used as an antibacterial in gel hand sanitizer preparations. The objective of the research was the manufacture of chitosan from freshwater lobster shells, can be formulated in the form of gel handsanitizer preparations that are stable and have antibacterial activity against Escherichia coli bacteria.*

*Chitosan obtained from freshwater lobster shells can be used as an antibacterial in gel hand sanitizer preparations. The objective of the research was the manufacture of chitosan from freshwater lobster shells, could be formulated in the form of gel handsanitizer preparations that were stable and had antibacterial activity against Escherichia coli bacteria. Chitosan making was carried out starting from the demineralization, deproteinasi and deacetylation stage and then characterization of chitosan which included moisture content, ash content, randemen, solubility, and analyzed using FTIR spectrophotometer to determine the function group of chitosan. Chitosan obtained then made gel hand sanitizer with a concentration of 1,5, 3, and 4.5% then conducted tests organoleptis, homogeneity, pH, spreadability and viscosity in gel preparations. Then it was conducted anti-bacterial testing of Escherichia coli bacteria.*

*The results showed that freshwater lobster shell chitosan had a functional group similarity to standard chitosan. Then it was obtained the value of deacetylation degree of 67.93%. The results of the handsanitizer preparation parameters test conducted organoleptical tests did not show any changes in smell, shape, and color in the preparation, homogeneity test showed the absence of granules (coarse granules, pH test obtained flat (average was in the range of pH skin, spreadability test also showed the average was in the range of 5-7 cm until the formula met the requirements.The test results of antibacterial activity of hansanitizer gel chitosan could kill Escherichia coli bacteria with a tasteless zone obtained at a concentration of 1.5% of 8.16 mm, a concentration of 3% of 8.2 mm, and a concentration of 4.5% of 8.8 mm, then at a concentration of 4.5% indicated the best tasteless power.*

*Keywords: Kitosan, FTIR, Gel, Escherichia coli*