ABSTRAK

Kombucha merupakan minuman probiotik berbahan dasar teh hasil fermentasi dari *Symbiotic Consortium of Bacteria and Yeast* (SCOBY). Nanas Madu (*Ananas comosus* L. Merr. cv. *Smooth cayenne*) memiliki enzim bromelin dan senyawa metabolit sekunder yang berperan sebagai antibakteri. Penelitian ini merupakan jenis penelitian eksperimental murni dengan menggunakan rancangan acak pola searah. Pada penelitian ini dilakukan optimasi konsentrasi gula dan air perasan nanas madu untuk mengevaluasi aktivitas antibakteri dimana semakin bertambahnya konsentrasi gula dan air perasan nanas madu akan meningkatkan jumlah metabolit hasil fermentasi yang memiliki aktivitas antibakteri. Konsentrasi terendah gula yang digunakan 15% dan tertinggi 35%. Konsentrasi terendah air perasan nanas madu yang digunakan 25% dan tertinggi 100%. Sediaan *spray face mist* kombucha nanas madu sebagai anti jerawat dilakukan evaluasi sifat fisik, yaitu pH, daya sebar, dan waktu kering. Respon yang dihasilkan berupa pH sebesar 4,555; 5,950 cm daya sebar; 2,933 menit waktu kering, dan 5,250 mm zona hambat terhadap bakteri *S.aureus* menggunakan metode difusi *paper disk*. Kedua faktor berpengaruh signifikan dengan *p-value* < 0,05 terhadap sifat fisik dan zona hambat antibakteri. Komposisi sediaan *spray* dengan sifat fisik dan zona hambat yang baik diperoleh pada rentang penggunaan 37,5 – 87,5 gram gula dan 62,5 - 250 gram air perasan nanas madu.

Kata kunci: Kombucha nanas madu, Antibakteri, *Staphylococcus aureus,* Optimasi, *Spray face mist,* Desain Faktorial

ABSTRACT

Kombucha is a probiotic beverage made from fermented tea using a Symbiotic Consortium of Bacteria and Yeast (SCOBY). Pineapple (Ananas comosus L. Merr. cv. Smooth cayenne) contains bromelain enzymes and secondary metabolites that act as antibacterial agents. This study is a pure experimental research using a one-way randomised design. In this study, the concentration of sugar and pineapple juice was optimised to evaluate antibacterial activity, where an increase in sugar concentration and honey pineapple juice would enhance the production of fermented metabolites with antibacterial activity. The lowest sugar concentration used was 15%, and the highest was 35%. The lowest pineapple honey juice concentration used was 25%, and the highest was 100%. The physical properties of the honey pineapple kombucha face mist spray formulation as an acne treatment were evaluated, including pH, spreadability, and drying time. The results showed a pH of 4.555; spreadability of 5.950 cm; drying time of 2.933 minutes; and an antibacterial zone of 5.250 mm against S. aureus bacteria using the paper disk diffusion method. Both factors significantly influenced with p-value < 0.05 for physical properties and antibacterial inhibition zone. The formulation composition with good physical properties and antibacterial inhibition zone was obtained within the range of 37.5–87.5 grams of sugar and 62.5–250 grams of honey pineapple juice.

Keywords: *Honey pineapple kombucha, Antibacterial, Staphylococcus aureus, Optimization, Spray face mist, Factorial Design*