

ABSTRACT

THE EFFECT OF TEMPERATURE AND STORAGE OF DRIED RED ROSELLE (*Hibiscus sabdariffa* L.) CALYXES INFUSION ON THE INHIBITORY ACTIVITY *Escherichia coli* ATCC 8739 GROWTH

Nana Rizki Widyasari

The use of infusion of Rosella calyx as a traditional beverage has been known in Indonesia. The infusion of Rosella calyx has antibacterial activities against Gram positive and Gram negative bacteria including *Escherichia coli*. This research has been investigated the stability and the infusion inhibitory activity against *Escherichia coli* ATCC 8739 growth on storage temperatures of 10⁰C and (-10⁰C) until three months to ensure the safety of the product when it is consumed. The parameters for determining product stability in this study were physical, chemical, and microbiological properties. Agar diffusion method were used to antibacterial activity test for infusion dried red roselle. The stability of the infusion based on physical performance characteristic showed no changed of color, flavor, and odor after storage. The results of the antibacterial activity the dried red roselle calyxes at refrigerator temperature (10⁰C) for a week, two weeks, three weeks, four weeks, two months and three months againts *Escherichia coli* ATCC 8739 had inhibitory zone diameter were 18,90 ± 0,00 mm; 17,73 ± 0,11 mm; 18,75 ± 0,21 mm; 17,85 ± 1,27 mm; 17,55 ± 0,21 mm; 16,43 ± 0,18 mm and 15,18 ± 0,53 mm respectively. While at freezer temperature (-10⁰C) had inhibitory zone diameter were 15,78 ± 0,81 mm; 15,60 ± 0,70 mm; 16,03 ± 1,10 mm; 16,93 ± 1,45 mm; 17,18 ± 0,46 mm; and 17,43 ± 0,04 mm. The infusion of dried red roselle were stable based on inhibitory activity on the growth of *Escherichia coli* ATCC 8739 after storage for three months at cold temperature (-10⁰C).

Keywords : *Stability, Infusion of Dried Red Roselle (Hibiscus sabdariffa) Calyxes, Antibacterial Activity, Escherichia coli, Agar Diffusion*