Intisari

Penelitian ini bertujuan menguji produksi enzim yang dimiliki bakteri dari genus Aeromonas, mengetahui pengaruh bahan anti *quorum sensing* dari rimpang dan daun tumbuhan terhadap penghambatan produksi enzim yang dimiliki bakteri dari genus Aeromonas, dan mengetahui bahan anti *quorum sensing* terbaik yang mampu menghambat produksi enzim yang dimiliki bakteri dari genus Aeromonas. Bakteri yang digunakan yaitu A. *aquariorum* KOC.2.2, A. *hydrophila* CTA K2, dan A. *sharmana* PT5.L3.T. Uji daya hambat aktivitas enzim terhadap bahan anti *quorum sensing* berupa daun jambu biji, daun kemangi, jahe, kunyit, dan temulawak menggunakan konsentrasi 10, 20, 30, dan 40 mg/ml. Pengukuran pertumbuhan bakteri dan aktivitas enzim dilakukan pada konsentrasi terbaik serta ekstrak yang digunakan dipilih dari yang memiliki aktivitas terbaik, sedang, dan kurang baik terhadap daya hambat aktivitas enzim. Produksi enzim A. *aquariorum* KOC.2.2 berupa amilase, protease, dan hemolisin. Sedangkan produksi enzim pada A. *hydrophila* CTA K2 dan A. *sharmana* PT5.L3.T berupa enzim protease. Bahan anti *quorum sensing* berupa daun jambu biji, daun kemangi, jahe, kunyit, dan temulawak berpengaruh terhadap penghambatan aktivitas protease yang dimiliki bakteri A. *hydrophila* CTA K2. Bahan anti *quorum sensing* terbaik yang mampu menghambat aktivitas protease bakteri A. *hydrophila* CTA K2 adalah jahe, dengan unit produksi enzim hingga jam ke 24 sebesar 64,70 U/ml.

Kata kunci: aeromonas, daya hambat, jahe, protease, *quorum sensing*

Abstract

This study aims to test the enzymes production in Aeromonas genus bacteria, determine the effect of anti-quorum sensing material from rhizomes and plant leaves on inhibiting the enzymes production in Aeromonas genus bacteria, and determine the best anti-quorum sensing materials that can inhibited the enzymes production in Aeromonas genus bacteria. The bacteria used were A. *aquariorum* KOC.2.2, A. *hydrophila* CTA K2, and A. *sharmana* PT5.L3.T. The inhibitory test of enzyme activity against anti-quorum sensing material from guava leaves, basil leaves, ginger, turmeric, and curcuma using concentrations of 10, 20, 30, and 40 mg/ml. Measurement of bacterial growth and enzyme activity was carried out at the best concentration and the extracts used were selected from material that had the best, moderate, and unfavorable activity against the inhibitory activity of the enzymes. The enzyme production in A. *aquariorum* KOC.2.2 is amylase, protease and hemolysin. While the enzymes production in A. *hydrophila* CTA K2 and A. *sharmana* PT5.L3.T is protease. Anti-quorum sensing materials such as guava leaves, basil leaves, ginger, turmeric, and curcuma affected the inhibition of protease activity of A. *hydrophila* CTA K2. The best anti-quorum sensing material that is able to inhibit the protease activity of the bacterium A. *hydrophila* CTA K2 is ginger, with an enzyme production unit up to the 24th hour of 64.70 U/ml.

Keywords: aeromonas, ginger, inhibitory power, protease, quorum sensing