



## Intisari

Penelitian ini bertujuan untuk mengetahui ekstrak daun tanaman herbal yang memiliki aktivitas penghambatan pada pertumbuhan bakteri dan mengetahui aktivitas *quorum sensing inhibitor* ekstrak air daun tanaman herbal terhadap pembentukan biofilm pada bakteri. Tanaman herbal yang digunakan adalah daun Pepaya (*Carica papaya L*), daun Pegagan (*Centella asiatica L*), daun Kemangi (*Ocimum sanctum L*), daun jambu biji (*Psidium guava L*). Aktivitas *quorum sensing inhibitor* dari ekstrak daun diujikan pada bakteri *A. hydrophila* yang merupakan bakteri patogen yang sering menyerang pada budidaya ikan. Penelitian dilakukan dengan cara menumbuhkan bakteri *A. hydrophila* pada *microplate flat-bottom* dengan perlakuan ekstrak daun tanaman. Penelitian ini menggunakan rancangan acak lengkap (RAL) yang terdiri dari 16 perlakuan bahan dan satu kontrol dengan masing-masing dilakukan 3 ulangan. Ekstrak air daun Kemangi konsentrasi 20 mg/ml memiliki kemampuan penghambat pembentukan biofilm paling tinggi sebesar 56,1%. Ekstrak air daun jambu biji dengan konsentrasi 21 mg/ml menghambat pembentukan biofilm sebesar 41,2%. Ekstrak air daun pegagan pada konsentrasi 40 mg/ml memiliki tingkat penghambatan sebesar 27,1%. Ekstrak air daun pegagan dan daun pepaya tidak memiliki kemampuan penghambatan biofilm. Pada ekstrak air daun pepaya konsentrasi 10 mg/ml tidak ada aktivitas penghambatan biofilm. Ekstrak air daun pepaya, daun pegagan, daun kemangi, daun jambu biji memiliki aktivitas antibakteri.

Kata kunci : bakteri, biofilm, *quorum sensing*, *A. hydrophila*, ekstrak air

### *Abstract*

The aims of this research were to determine water extract of herbal leaves that have activity in bacterial growth inhibition and activity of quorum sensing inhibitor on biofilm formation of bacteria. Papaya leaves (*Carica papaya L*), Gotu kola leaves (*Centella asiatica L*), basil leaves (*Ocimum sanctum L*), and Guava leaves (*Psidium guava L*) were examined in this study. The *quorum sensing inhibitor* activity of leaves water extract was tested on *A. hydrophila* which is a pathogenic bacteria of fish. The experiment was carried out by growing *A. hydrophila* on a microplate flat-bottom with herbal leaves plant extract treatment. This study used a completely randomized design (CRD) consisting of 16 treatments and one control with three replications each. Basil water extract with a concentration of 20 mg/ml has the highest inhibition of biofilm formation by 56,1%. Guava leaves water extract inhibited biofilm formation by 41,2% at the concentration of 10 mg/ml. Gatu kola leaves water extract at 40 mg/ml demonstrated 27,1% of inhibition. *Carica papaya* leaves water extract at a concentration of 10 mg/ml did not have inhibitory ability. Water extract of gotu kola leaves and papaya leaves do not have the ability of biofilm formation inhibition. Water extract of papaya leaves, gotu kola leaves, basil leaves, guava leaves has antibacterial activity.

Keywords : bacteria, biofilm, *quorum sensing*, *A. hydrophila*, water extract