

ABSTRACT

ISOLATION AND TESTING OF LOCAL ISOLATES ANTAGONISME FLUORESCENT PSEUDOMONADS LAMPUNG ORIGIN OF *BLOOD DISEASE BACTERIUM* (BDB), BACTERIAL WILT DISEASE CAUSES OF IN VITRO BANANA

By

SISCA ROFA MAYASARI

Banana (*Musa paradisiaca* L.) plants have been known widely in Indonesia. One major problem in banana cultivation in Lampung, even in Indonesia, is the attack of *Ralstonia* sp. or known as the *Blood Disease Bacterium* (BDB), which causes bacterial wilt disease. Several methods of control have been done but so far there is effective method of control yet. This inspired researchers to find alternative control, one of them is the use of biological agents such as bacteria antagonistic *Pseudomonas* group (*fluorescent Pseudomonads*). This study was aimed to isolate and test the antagonistic effect of *Pseudomonas* fluorescent group to *Blood Disease Bacterium* (BDB) and obtain the best isolates in inhibiting the growth of *Blood Disease Bacterium* (BDB) in vitro. Treatments were arranged in Completely Randomized Design (CRD) with four replications. The study consisted of two steps of the experiment. The first step is the preparation of bacterial isolates of *Ralstonia* sp. and *fluorescent Pseudomonads*. The second step is to test the antagonism between *fluorescent Pseudomonads* with BDB. The treatments consisted of several isolates of *fluorescent Pseudomonas* originating from several locations in Bandar Lampung, South Lampung, and Pesawaran. The results showed that out of 12 isolates of *fluorescent Pseudomonads* isolated from the rhizosphere of banana plants suspected of being antagonists, only eight isolates that proved not to be pathogenic. Eight isolates (Gedong Meneng, Mount Light, Cape Seneng, Way kandis, Natar, Jatimulyo, Way Hui, and Kalianda) of *fluorescent Pseudomonads* significantly inhibit the growth of *Blood Disease Bacterium* in vitro. *Pseudomonas fluorescent* isolates originating from Natar was the best antagonist.