

ABSTRACT

Rohmana, Nadia Hidayati, 2015. Potential Test Antibacterial and presence of Endophytic Bacteria Curcumin synthase enzyme Endophytic Bacteria Curcuma rhizome (*Curcuma xanthorrhiza* Roxb.). Thesis. Department of Biology, Faculty of Science and Technology of the State Islamic University of Maulana Malik Ibrahim Malang. Supervisor: Dr. Hj. Ulfah Utami, M.Si and M. Mukhlis Fahrudin, M.SI

Keywords: *Curcuma xanthorrhiza* Roxb., Antibacterial, *Aeromonas hydrophilla*, *Streptococcus agalactiae*, Curcumin synthase

Fish disease caused by the bacteria *Aeromonas hydrophilla* is septicemia. Streptococcosis disease is caused by *Streptococcus agalactiae*. Both the high virulence of pathogenic bacteria and thus require antibacterial that can hinder. Wild Ginger has a compound curcumin, alkaloids, flavonoids, saponins, triterpenoids. The compounds can be used as antibacterial so, allegedly the endophytic bacteria also have these compounds; especially, curcumin which is only found in *Curcuma*. So, it needs to be examined whether there is curcumin to see the enzyme producer curcumin with bioinformatics, using BLAST.

This study is experimental research and exploration. Testing of endophytic bacteria isolates ginger rhizome against bacteria *Aeromonas hydrophilla* and *Streptococcus agalactiae* with paper diffusion method in vitro. Analysis of the data is done by measuring the inhibitor zone. Assessing the endophytic bacteria isolates ginger rhizome as a producer of enzymes curcumin with bioinformatics. Analysis of the data by looking at the percentage of query cover $\geq 80\%$ and $\geq 30\%$ identity.

Antibacterial test results, ginger rhizome endophytic bacteria can inhibit pathogenic bacteria causing fish diseases. The largest inhibition zone is isolate of *Pseudomonas stutzeri*, 5.5 mm against the bacteria *Streptococcus agalactiae* and 5.6 mm against *Aeromonas hydrophilla*. BLAST results show that the sequence of endophytic bacteria and enzymes are not the same. Therefore, otherwise endophytic bacteria do not have a curcumin sintase enzym.