

ABSTRACT

THE RESISTANCE STUDY OF *Aeromonas hydrophila* (Holt *et al.*, 1994) TO THREE TYPES OF ANTIBIOTICS FROM AQUACULTURE LOCATIONS IN BANTEN PROVINCE

By

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Motile aeromonas septicaemia (MAS) is a disease that has the potential to become an epidemic in freshwater cultured fish and is caused by the bacterium *Aeromonas hydrophila*. The use of antibiotics as a treatment is considered the most effective countermeasures. The use of antibiotics that are not as recommended can cause bacteria to become resistant. The purpose of this study was to evaluate the resistance of *A. hydrophila* bacteria to three antibiotics namely oxytetracycline, tetracycline, and enrofloxacin. The research was conducted by explorative method. *A. hydrophila* was isolated from samples of pond water, inlet water, outlet water, pond sediment, catfish (*Clarias* sp.), and tilapia (*Oreochromis niloticus*). The samples were taken from fish farm in Banten Province. *A. hydrophila* isolates were identified by biochemical tests using vitek 2compact, then *A. hydrophila* susceptibility test to three antibiotics was carried out in vitro using the disc diffusion method. *A. hydrophila* which was known to be resistant to certain antibiotics was continued with the minimum inhibitory concentration (MIC) test. The results of this study, 31 *A. hydrophila* isolates were obtained, where the percentage of oxytetracycline was 6.4%, tetracycline was 3.2% and enrofloxacin did not experience resistance. The MIC value of tetracycline and oxytetracycline in the *A. hydrophila* isolates was 16 µg/ml.

Keywords : *Aeromonas hydrophila*, antibiotics, oxytetracycline, resistance, tetracyclines.

ABSTRAK

STUDI RESISTANSI *Aeromonas hydrophila* (Holt *et al.*, 1994) PADA TIGA JENIS ANTIBIOTIK DARI LOKASI AKUAKULTUR DI WILAYAH PROVINSI BANTEN

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Motile aeromonas septicaemia (MAS) merupakan penyakit yang berpotensi menjadi wabah pada ikan budi daya air tawar dan disebabkan oleh bakteri *Aeromonas hydrophila*. Penggunaan antibiotik sebagai pengobatan dianggap sebagai penanggulangan yang paling efektif. Penggunaan antibiotik yang tidak sesuai anjuran dapat mengakibatkan bakteri menjadi resistan. Tujuan dari penelitian ini untuk mengevaluasi resistansi bakteri *A. hydrophila* terhadap tiga antibiotik, yaitu oksitetrasiklin, tetrasiklin, dan enrofloksasin. Penelitian dilakukan dengan metode eksploratif. *A. hydrophila* diisolasi dari sampel air kolam, air *inlet*, air *outlet*, sedimen kolam, lele (*Clarias* sp.), dan nila (*Oreochromis niloticus*). Sampel tersebut diambil dari pembudi daya ikan di Provinsi Banten. Isolat *A. hydrophila* diidentifikasi dengan uji biokimia menggunakan *vitek 2compact*, kemudian uji kepekaan *A. hydrophila* terhadap tiga antibiotik dilakukan secara *in vitro* menggunakan metode difusi cakram. *A. hydrophila* yang diketahui resistan terhadap antibiotik tertentu dilanjutkan dengan uji *minimum inhibitory concentration* (MIC). Hasil penelitian menghasilkan 31 isolat *A. hydrophila*, persentase oksitetrasiklin sebesar 6,4%, tetrasiklin sebesar 3,2% dan enrofloksasin tidak ada yang resistan. Nilai MIC dari tetrasiklin dan oksitetrasiklin pada isolat *A. hydrophila* sebesar 16 µg/ml.

Kata kunci : *Aeromonas hydrophila*, antibiotik, oksitetrasiklin, resistansi, tetrasiklin.