

## RINGKASAN

**Farichatin.** Dilakukan penelitian mengenai pengaruh ekstrak daun Sambiloto (*Andrographis paniculata, Ness*) terhadap jumlah bakteri pada ikan Lele (*Clarias batrachus*) yang telah diinfeksi bakteri *Aeromonas hydrophila* dibawah bimbingan Bapak Didik Handijatno, M. S., Drh sebagai pembimbing pertama dan Bapak Ir. Yudi Cahyoko, M.Si sebagai pembimbing kedua.

Penelitian ini bertujuan untuk mengetahui apakah ekstrak daun Sambiloto (*Andrographis paniculata, Ness*) sebagai antibakterial memiliki kemampuan untuk membunuh atau menghambat pertumbuhan *Aeromonas hydrophila* pada ikan Lele (*Clarias batrachus*).

Dosis ekstrak daun Sambiloto (*Andrographis paniculata, Ness*) yang digunakan yaitu 0 ppm, 100 ppm, 200 ppm dan 300 ppm. Ikan direndam terlebih dahulu pada masing-masing aquarium yang telah ditambahkan 2 ml suspensi bakteri yang telah disesuaikan dengan *Standard McFarland* no. 0,5 sampai timbul gejala klinis. Perlakuan perendaman menggunakan ekstrak daun Sambiloto (*Andrographis paniculata, Ness*) dilakukan selama satu hari setelah itu ikan dipelihara dulu selama 4 hari, kemudian ikan pada masing-masing perlakuan dibedah untuk diambil insangnya, digerus dan diencerkan dengan konsentrasi  $10^{-1}$  sampai  $10^{-9}$  untuk kemudian ditanam pada media *McConkey Agar*, diinkubasi selama sehari lalu dihitung jumlah bakteri yang masih hidup dengan metode *Total Plate Count*. Penelitian ini menggunakan Rancangan Acak Lengkap dengan empat perlakuan dan lima ulangan, untuk pengolahan data

menggunakan uji *One Way Anova*, uji *Duncan Multiple Rate Test (DMRT)* (*SPSS for Windows*).

Pada penghitungan jumlah bakteri, diperoleh hasil bahwa terdapat perbedaan yang sangat nyata diantara hasil perlakuan, perlakuan dengan dosis 300 ppm menunjukkan hasil perlakuan terbaik dengan menunjukkan jumlah bakteri yang paling sedikit, sedangkan perlakuan kontrol menunjukkan hasil perlakuan paling rendah karena menunjukkan jumlah bakteri yang terbanyak.

Berdasarkan hasil penelitian, dapat disimpulkan bahwa ekstrak daun Sambiloto (*Andrographis paniculata, Ness*) sebagai antibakterial mampu menurunkan jumlah bakteri *Aeromonas hydrophila* pada ikan Lele (*Clarias batrachus*).

Peneliti menyarankan perlunya dilakukan penelitian lebih lanjut tentang histopatologi dari ikan yang terinfeksi *Aeromonas hydrophila* dengan dosis yang digunakan sebaiknya dibawah 300 ppm, serta pengaruh ekstrak daun Sambiloto (*Andrographis paniculata, Ness*) terhadap pengendalian jenis bakteri yang lain.

## SUMMARY

**Farichatin.** The effect of extract of Sambiloto leaves (*Andrographis paniculata*, Ness) against *Aeromonas hydrophila* infecting catfish (*Clarias batrachus*) was advised by Drh. Didik Handijatno, M.S., as the first advisor and Ir. Yudi Cahyoko, M.Si., as the second advisor.

The purpose of this research was to find out whether the extract of Sambiloto leaves (*Andrographis paniculata*, Ness) as an antibacterial had ability to kill or to inhibit amount *Aeromonas hydrophila* on the catfish (*Clarias batrachus*).

Dosages of Sambiloto leaves (*Andrographis paniculata*, Ness) extract used in this experiment were 0 ppm, 100 ppm, 200 ppm and 300 ppm respectively. Four aquariums were added 2 ml of liquid bacteria culture each until the water containing *Aeromonas hydrophila*,  $10^8$  CFU/ml. The liquid bacteria culture adjusted with standard of MacFarland No. 0,5. After that the catfishes (*Clarias batrachus*) were infected with *Aeromonas hydrophila* by culturing in each aquarium till clinical symptoms appeared. Then infected catfishes (*Clarias batrachus*) were soaked a day in Sambiloto (*Andrographis paniculata*, Ness) extract each. And then the catfishes (*Clarias batrachus*) cultured in fresh water for four days. Afterward, all catfishes (*Clarias batrachus*) on first, second, third and fourth treatment were dissected to take their gills each. The gills were ground and diluted to be  $10^{-1}$  to  $10^{-9}$  concentration and then cultured on McConkey agar media for a day incubation. Calculation of living bacteria was used Total Plate Count Method.

The experiment used Fully Randomize Design (FRD) consisted of four treatments and five repetitions. To know the effect of treatment using One Way Anova Test, for knowing differences among the treatments were used Duncan Multiple Range Test (DMRT) (SPSS for Windows).

Results of experiment indicated that there were differences among the treatments ( $p < 0,05$ ). The dosage of Sambiloto (*Andrographis paniculata*, Ness) extract, 300 ppm was to show the best treatment for killing or inhibiting bacteria, whereas the dosage of Sambiloto (*Andrographis paniculata*, Ness) extract, 0 ppm had lowest ability for killing bacteria ( $p < 0,05$ ). On the dosage of Sambiloto (*Andrographis paniculata*, Ness) extract, 300 ppm was gained lowest total of bacteria compared among the other treatments.

It was concluded that the extract of Sambiloto leaves (*Andrographis paniculata*, Ness) could inhibit or kill *Aeromonas hydrophila* on the catfishes (*Clarias batrachus*). The best treatment was obtained on the dosage of 300 ppm.

Base on the research result, it was suggested that future research about histopathology of the catfishes (*Clarias batrachus*) infected by *Aeromonas hydrophila* was highly required. And also, effect of Sambiloto leaves (*Andrographis paniculata*, Ness) extract on the other bacteria was important to try.