STUDIES ON CHEMOTHERAPY OF ECTOPARASITIC INFECTION ON SEABASS (*Lates calcarifer* Bloch) FINGERLINGS

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SERDANG, SELANGOR

To mother

To sisters and brother

Thank you for your continuing patience and understanding

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By

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ABSTRACT

A static 96-h acute toxicity test was conducted on Seabass (*Lates calcarifer*) fingerlings (Total Length: 9.31 ± 0.79cm ;Body weight: 8.49 ± 2.12g) exposed to concentrations ranging from 0 to 400ppm formalin. The 96-h Median Lethal Concentration value was 174ppm formalin. Histological studies of sublethal concentration for 100ppm and 200ppm formalin at 48h and 96h revealed some pathological changes. It caused mild hyperplasia, hypertrophy and oedema in gills; vacuolation, hemorrhagic, and hydrophic degeneration in spleen, and oedema of the glomerulus and degeneration of the renal tubules of kidney. No significant pathological changes were exhibited in the liver.

Chemotherapy studies using formalin, acriflavine and freshwater were also conducted on gill ectoparasites of seabass fingerlings. One hundred ppm and 150ppm of formalin were found to be effective in reducing the numbers of monogenea ($p<0.05$) under low level and initial stages of its infestation. No significant differences were observed for acriflavine against both monogenea and *Cryptocaryon irritans*. Statistically, 100% freshwater was not effective against heavy infection of *C. irritans*. However, longer exposure time for 2 hours seem to decrease the mean numbers of monogenea dramatically.

ABSTRAK

Kajian akut ketoksikan formalin keatas anak ikan Siakap (Lates calcarifer) (Jumlah panjang:9.31 ± 0.79sm; Berat badan:8.49 ± 2.12g) telah dijalankan dengan menggunakan sistem bioassai statik 96jam pada kepekatan berjulat dari 0 hingga 400ppm. Nilai LC50 yang diperolehi adalah pada 174ppm formalin. Kajian histologi daripada kepekatan submaut untuk 100ppm dan 200ppm formalin pada 48j dan 96j menunjukkan sedikit perubahan patologi. Ia menyebabkan hiperplasia ringan, hipertrofi dan edema dalam insang-insang; vakuolasi, hemoraj, dan hydrofik degenerasi dalam limpa, dan edema dalam glomelurus dan degenerasi tubul renal dalam ginjal. Tiada perubahan penting ternyata dalam hati.

Kajian kemoterapi dengan menggunakan formalin, acriflavin dan air tawar juga telah dijalankan terhadap ektoparasit insang anak ikan siakap. Seratus ppm dan 150ppm formalin adalah didapati berkesan dalam menurunkan bilangan monogenea ($p<0.05$) dibawah tahap infeksi rendah dan peringkat juvana infestasinya. Tiada perbezaan bererti tertunjuk pada acriflavin terhadap kedua-dua monogenea dan Cryptocaryon irritans. 100% air tawar tidak berkesan secara statistik terhadap tahap tinggi infestasi C. irritans. Bagaimanapun, masa pendedahan yang lebih panjang selama 2 jam dapat menurunkan bilangan monogenea.