

CHRONIC BIOASSAY OF WATER SOLUBLE FRACTION (WSF)  
OIL ON TILAPIA (*Oreochromis sp.*)

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FACULTY OF APPLIED SCIENCE AND TECHNOLOGY  
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TERENGGANU

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**CHRONIC BIOASSAY OF WATER SOLUBLE FRACTION (WSF)  
OIL ON TILAPIA (*Oreochromis sp.*)**

**BY**

**TING JEN NEE**

**This project report is submitted in partial fulfillment  
of the requirements for the Degree of  
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**FACULTY OF APPLIED SCIENCE AND TECHNOLOGY  
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**Special dedicated to:**

**Dad:**

*Ting Tong Ming*

**Mom:**

*Yeap Mee Hwa*

**Sisters:**

*Ting Jing Nee*

*Ting Yun Nee*

*Ting Lan Nee*

**Brothers:**

*Ting King Leong*

*Ting King Siang*

**Cousin:**

*Tan Chin Soon*

**Boyfriend:**

*Tang Wooi Khuang*

**Jen Nee, March, 1998.**

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## Abstract

Chronic test of water soluble fraction (WSF) Petronas Tapis A crude oil of on *Oreochromis sp.*, tilapia juveniles was conducted by using a flow-through bioassay system for six weeks. Cadmium toxicity test was used as the positive control for the chronic test. The growth rate of tilapia in the first run at 0 ppm (control), 0.505 ppm (1% of 96hLC50), 5.053 ppm (10% of 96hLC50) and 10.106 ppm (20% of 96hLC50) were 0.0495 g/day, 0.0448 g/day, 0.0397 g/day and 0.0397 g/day respectively. In the second run, the growth rate of tilapia at 0 ppm (control), 0.253 ppm (0.5% of 96hLC50), 2.527 ppm (5% of 96hLC50) and 7.580 ppm (15% of 96hLC50) were 0.0587 g/day, 0.0558 g/day, 0.0533 g/day and 0.0477 g/day respectively. Statistical analysis of the results showed that there was no significant different of weight gained among different concentration of WSF oil and the control ( $p > 0.05$ ). These results showed that there was no significant effect of sublethal concentration WSF oil up to 10.106 ppm on the growth of tilapia juvenile. The recommended safety level of WSF oil on tilapia in seawater is 1.0 ppm.

## Abstrak

Ujian kronik minyak mentah terlarut (WSF) Tapis A pada juvenil tilapia, *Oreochromis sp.* telah dijalankan dengan menggunakan kaedah jangkamasa panjang secara mengalir selama enam minggu. Ujian ketoksikan kadmium digunakan sebagai kawalan kepada ujian kronik. Kadar tumbesaran tilapia dalam ujian pertama pada kepekatan 0 ppm (kawalan), 0.505 ppm (1% 96hLC50), 5.053 ppm (10% 96hLC50) and 10.106 ppm (20% 96hLC50) adalah 0.0495 g/hari, 0.0448 g/hari, 0.0397 g/hari and 0.0397 g/hari. Dalam ujian kedua, kadar tumbesaran tilapia pada 0 ppm (kawalan), 0.253 ppm (0.5% 96hLC50), 2.527 ppm (5% 96hLC50) and 7.580 ppm (15% 96hLC50) adalah 0.0587 g/hari, 0.0558 g/hari, 0.0533 g/hari and 0.0477 g/hari. Ujian statistik menunjukkan tiada perbezaan pertambahan berat yang nyata di antara kepekatan minyak WSF dengan kawalan. Keputusan menunjukkan minyak WSF tidak mempunyai kesan yang nyata terhadap tumbesaran juvenil tilapia. Tahap keselamatan bagi minyak WSF untuk tilapia dalam air laut yang dicadangkan ialah 1.0 ppm.