# EFFECTS OF SALINITY ACCLIMATION ON OSMOREGULATION PROCESS OF RED TILAPIA, *Oreochromis sp.*: PLASMA OSMOLALITY AND CHLORIDE CELLS

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**EFFECTS OF SALINITY ACCLIAMTION ON OSMOREGULATION PROCESS OF RED TILAPIA, *Oreochromis sp*: PLASMA OSMOLALITY AND CHLORIDE CELLS**

The present study elucidates the relationship between survival rate, plasma osmolality and chloride cells with different salinity acclimation in the Red tilapia, *Oreochromis sp.* Red tilapia were exposed to different salinity (0 ppt, 10 ppt, 20 ppt and 30 ppt) in gradual and direct acclimation for 7 days to adapt them to saltwater. The plasma osmolality was examined by osmometer and chloride cell was examined by Advanced Microscope. However, 100 % mortality was occurred in direct acclimation compared with 100% survive in gradual salinity acclimation. While plasma osmolality and choride cell (number and size) were increased significantly in gradual acclimated. In direct acclimation, size of the chloride cells were decreased with increased salinity.

Abstrak tesis yang dikemukakan kepada senat Universiti Malaysia Terengganu sebagai memenuhi keperluan untuk Ijazah Master Sains.

# KESAN PENYESUAIAN SALINITI PADA PROSES OSMOREGULASI DARI TILAPIA MERAH, *Oreochromis sp* : PLASMA OSMOLALITI DAN SEL KLORIDA

Kajian ini menerangkan hubungan diantara kadar hidup, plasma osmolaliti dan sel klorida dengan penyesuaian saliniti yang berbeza dalam Tilapia merah, *Oreochromis sp.* Tilapia merah didedahkan kepada saliniti yang berbeza pada (0 ppt, 10 ppt, 20 ppt dan 30 ppt) samada secara berperingkat atau secara terus selama 7 hari untuk menyesuaikan mereka pada air laut. Plasma osmolaliti dikaji dengan menggunakan osmometer dan sel klorida dikaji menggunakan Advanced Microscope. Bagaimanapun, 100 % kematian berlaku pada penyesuaian saliniti secara langsung berbeza dengan 100 % hidup pada penyesuaian saliniti secara berperingkat. Sementara itu, plasma osmolaliti dan sel klorida (bilangan dan saiz) meningkat secara ketara dalam penyesuaian berperingkat. Dalam penyesuaian saliniti secara terus, saiz sel klorida menurun dengan peningkatan saliniti.