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EFFICACY OF TOLTRAZURIL IN THE TREATMENT OF PARASITES AND ECTOCOMMENSALS OF YABBIES (CHERAX DESTRUCTOR)

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A variety of protozoan, platyhelminth and nematode species have been found as endoparasites or ectocommensals of native freshwater crayfish and some have been associated with mortalities and production losses in commercial aquaculture. At present, few effective methods are available for their treatment or control although recent studies have shown that toltrazuril (sym. triazinone, Bay Vi 9142) was effective against similar organisms affecting fish and insects.

Clinical trials were therefore performed on 300 yabbies (Cherax destructor) exhibiting heavy natural infections/infestations with microsporidian cysts (Thelohania and Pleistophora), peritrichous ciliates (Vaginicola, Cothurnia, Pyxicola, Lagenophrys, Epistylis, Vorticella and Zoothamnium), suctorian ciliates (Acineta and Tokophrya), trematode metacercariae (Microphallus), temnocephalidean platyhelminths (Craspedella and Temnocephala) and free-living nematodes (Gammarinema). Groups of yabbies were treated for 0.5, 1, 2, 4, 12 and 24 hours in aerated aquaria containing 0, 5, 10, 20 and 50 µg toltrazuril/ml. The yabbies were killed 0-14 days later and examined for intact and degenerative organisms by light and electron microscopy.

Infestations by ciliated protozoa, adult temnocephalans and epibiotic nematodes were effectively eradicated by treatment with drug concentrations of 20 and 50 µg/ml for 12 and 24 hours. The ectocommensal organisms lost motility and became highly contracted prior to death. The majority dropped off their hosts except for some ciliates which remained attached via stalks or loricae. Similar treatment times and doses produced degenerative ultrastructural changes to various cells located within microsporidian cysts and trematode metacercariae indicating that at least some stages of the parasites were severely damaged or destroyed.