

Title : IMPACT OF EXTRACTED SUBSTANCE FROM NEEM SEED  
( *Azadirachta indica* ) ON HATCHING RATE AND SURVIVAL  
OF TILAPIA FRY ( *Oreochromis niloticus* )  
Author : Mr.Akkarapon Vongkanghae  
Adviser : Assoc.Prof.Dr.Sumalee Suthipradit  
Type of Work : Thesis ( M.Sc. in Environmental Science ) Naresuan University,1999.

At the present, many agricultural governmental sectors have recommended and urged farmers to use plant extracted substances to control pests in replacement of synthetic chemicals. As the formers substances are less hazardous to human beings and less impact on environment than the synthetic ones. However, information of the plant extracted substances particularly crude neem ( *Azadirachta indica* ) seed extracted substances on equa - ecology and environment is rather limited. Therefore, it is essential to find out whether these natural pesticides would be phytotoxic to hatching rate and survival of Tilapia fry ( *Oreochromis niloticus* ) variety Jitladda No. 3 ; this fish is reported to be tolerant to environmental constraints. The results obtained from the studies under controlled laboratory conditions showed large effects of the crude neem seed extracted substances on hatching rates , hatched fry and fry survivals. The hatching rates were 93.3, 55.0, 23.3 and 7.5 % at 0, 2.5, 5.0 and 7.5 ppm, respectively, at the tested period of 374 hours. The fry obtained from the hatching were then raised for a period of 14 days in the absence of the extracted substances. It was found that the survivals of the fry were markedly decreased with increasing extracted substance concentrations. No survival fry were observed at 7.5 ppm. Only 6.5 and 2.5 % were found at 2.5 and 5.0 ppm. Interestingly, the eggs hatched in the present of the extracted substances were abnormal fry i.e. banded backbone.  $LC_{50}$  levels of the substances for the fry at the age of 2 days and 4 weeks old were also investigated. The results showed a variation of tolerance between ages of the fry and duration tested. The  $LC_{50}$  for the 2 days -fry were 23.0, 20.0, 12.0 and 8.0 ppm at 24, 48, 72 and 96 hours respectively, while the  $LC_{50}$  for 4 weeks – fry with corresponding with the above times were 30.0, 26.0, 22.0 and 19.0 ppm. The impacts of substances extracted from plants must be carefully studies before they are recommended to be used as they might have impact on other useful as living organisms and environment.