

Lilla Hongkanarat 2011: Acute Toxicity of Tea Seed Cake on Creeper Shell (*Cerithidea cingulata*), Nile Tilapia (*Oreochromis niloticus*), Giant Seaperch (*Lates calcarifer*) and Pacific White Shrimp Postlarvae (*Litopenaeus vannamei*). Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Chalor Limsuwan, Ph.D. 150 pages.

Acute toxicity of tea seed cake on creeper shell (*Cerithidea cingulata*), Nile tilapia (*Oreochromis niloticus*), and giant seaperch (*Lates calcarifer*) were studied by using static bioassays. The median lethal concentration of tea seed cake needed to kill creeper shell in 96 hours (96-hr LC₅₀) at salinity of 10, 20 and 30 ppt the 96-hr LC₅₀ was 65.96, 54.73 and 44.18 ppm, respectively. In water with pH 7.5, 8.0 and 8.5 the 96-hr LC₅₀ was 42.39, 44.66 and 46.93 ppm, respectively. The 72-hr LC₅₀ of tea seed cake for Nile at salinity of 0, 5 and 10 ppt was 26.69, 17.99 and 9.4 ppm, respectively. In water with pH 7.5, 8.0 and 8.5 the 72-hr LC₅₀ was 14.26, 14.62 and 16.88 ppm, respectively. The 72-hr LC₅₀ of tea seed cake on giant seaperch at salinity of 0, 10, 20 and 30 ppt was 9.32, 8.28, 5.3 and 3.02 ppm, respectively. In water pH 7.5, 8.0 and 8.5 the 72-hr LC₅₀ was 4.12, 4.65 and 4.92 ppm, respectively. The acute toxicity of tea seed cake to Pacific white shrimp postlarvae 10 (PL10) was also tested with static bioassays. In water with salinity of 5, 15 and 30 ppt the 48-hr LC₅₀ was 270.14, 423.99 and 416.14 ppm, respectively. In water with pH 7.5, 8.0 and 8.5 the 48-hr LC₅₀ was 343.82, 347.53 and 366.2 ppm, respectively.

Results from this study indicated that at higher salinity the toxicity of tea seed cake to creeper shell, Nile tilapia, giant seaperch and Pacific white shrimp (PL10) increased except at salinity of 5 ppt toxicity of tea seed cake PL10 is lowest because at low salinity shrimp is weaker than in normal salinity. Toxicity of tea seed cake to creeper shell, Nile tilapia, giant seaperch and PL10 at lower pH increased.

Appropriate concentration of tea seed cake for eradicating creeper shell and fish species at the salinity 20-30 ppt were ranged from 80-100 ppm (ie.128-160 kg/1600m² (rai)), while at lower salinity from 0 to 5 ppt tea seed cake of 100-120 ppm (ie.160-192 kg/rai) should be used. These dosages of tea seed cake have been proved safe for *L. vannamei* postlarvae. Therefore, Tea seed cake is one of the suitable choice to eradicate the creeper shell and fish species for pond preparation before stocking PLs into the ponds because as it is effective and safe to shrimp.

Student's signature

Thesis Advisor's signature