Thesis Title Application of Neem Seed Extracts on the Reduction of Housefly Worm on Dried Salted Fish

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ABSTRACT

Studies were carried out to determine the optimal concentrations and application methods of neem seed extracts on the reduction of housefly worms on dried salted fish and to evaluate their growth regulating properties on housefly worms. In the first experiment sliced salted fish were dipped in 5, 8, 10, 20, 25 percent water extract of neem seed. And sliced fish were salted in 1, 2, 3, 6.74, 10.38, 15, 20 percent of brine (10 % w/v NaCl) extract of neem seed during salting process in the second experiment. Then they were each introduced into separated cages containing 15 pairs of houseflies for one day. Flies' worms were examined at 48 hour and 72 hour until they transformed to be pupae. The results showed that the number of emergent larvae, prepupae and flies were inversely proportional to the concentrations of the water extract as well as of the brine extract applied to the sliced salted fish. No concentration of neem seed extracts either water extract or brine extract was effective enough in obtaining worm-free salted fish. However the emergent larvae of brine extract treated sliced salted fish had poor development with high mortality

observed in the period between prepupae and pupae. The sliced fish salted in 3%, 6.74%, 10.38%, 15% and 20% of brine extract of neem seed had small number of larvae failing to molt to the next instar stage. In addition, to investigate the synergistic effect of sesame seed oil on the brine extract of neem seed, sesame seed oil was added to the extract. The addition of sesame seed oil to the brine extract of neem seed did not synergized the effect of the brine extract of neem seed on the progeny development of housefly. The sliced fish salted in brine containing 0.5% and 1% sesame seed oil reduced the number of emergent larvae and prepupae.

Salted fish dipped in 5, 10, 30, 40, 50 water extract of neem seed were sun-dried for two or three days. The number of insect arrival and the number of larvae were inversely proportional to the concentrations of water extract applied on sun-dried salted fish. Control fish became heavily infested with larvae during drying process while larval infestation was less on treated dried-salted fish. Application of the water extract of neem seed (10 % or higher) to the salted fish seemed to be effective to decrease larval infestation.