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USE OF SOME PLANT OIL EXTRACTS AS SURFACE PROTECTANT AGAINSTSTORAGE INSECT PEST, *Dermestes maculates Degeer,* ON SMOKED FISH

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ABSTRACT

Crude oil extracts obtained form the seeds and leaves of some plants which are commonly used as spices and food condiments in the tropics; *Pipe guineese, Monodora myristica, Aframomum melegueta, Tithonia diversfolia and Nicotiana tabacum* were evaluated as protectants against different stages (adults, pupae, larvae and eggs) of fish beetle (*Dermestes maculates* Degeer). The oil extracts were applied to disinfected muscle of smoked fish at 10% (w/v). Newly emerged (0-24hour old) adults, pupae, larvae, and eggs of *D.maculatus* were introduced into kilner jar each containing treated and untreated fish samples. Insect infected fish without any crude oil treatment served as control. All the treatments were in triplicates. Evaluation of the potency of the oil extracts was based on the insect mortality, pupae formation and percentage egg hatchability. The weight losses in fish muscle in the treated and untreated samples were compared as index of fish damage during storage. The results showed that oil extracts from P.*guineense*, *M. myristical* and *A.melegueta* were significantly ($P \leq 0.05$) effective in killing all the adults, pupae and eggs of *D.maculatus* while the effect of oil extracts from *N.tabacum* and *T. diversifolia* were not significantly different ($P \geq 0.05$) form the untreated (control) smoked fish infected with the storage insect pest. The percentage weight loss in fish during storage was significantly reduced ($P \leq 0.05$) in fish treated with the plant oil extracts from *P.guineese*, *M.myristical* and *A.melegueta* compared with fish treated with oil extracts and the control fish. This study showed that oil extractives from *P.guineense*, *M.myristical* and *A.melegueta* were capable of controlling different stages of *D.maculatus* in smoked fish during storage. However, further studies are needed to evaluate the active ingredients, toxicity and concentrations of these oil extracts for effective use in controlling insect pests of fish during storage.

Keywords: Oil extracts, plant materials, protectant, smoked catfish, storage.