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# Efficacy of Some Essential Oils against Silverfish (*Lepisma saccharina*)

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## ABSTRACT

*Silverfish is well known insect pest of houses, libraries, museums and feed on variety of food such as fabrics, paper products, paste or glue as well as books, and damage. Silverfish also carries some allergens but no major harm for human health. Synthetic Chemical used to control is not only harmful to human health but also destroy various biotic components in the environment. To safety in mind we use an alternative option for controlling the silverfish. In present study two essential oils were screened against Silverfish. The study was carried out to evaluate the toxicity and fumigant activity of two essential oils that is, Menthe and Neem against silverfish under laboratory conditions. Both tested oils, Mentha showed the maximum toxicity as compare to Neem. The toxicity increased with increasing the oil concentration, and maximum toxicity at higher concentration in both oil. In fumigation after 24 h exposure, Neem oil was found to have least fumigant activity. Percentage survivability decreased with increasing the concentration of both fumigant oils.*

**Key word:** Silverfish, Oils , Oil concentration, Contact and fumigant toxicity.

## INTRODUCTION

Insect pests were always major problem of agriculture land, houses, museums and libraries. In all over world, Common silverfish (*Lepisma saccharina*) is a common household post usually found in damp, cool places (Ebeling, 1975). They are belonging to the order Thysanura and feed high rich protein, sugar, and starch material such as paper, the glue on wallpaper and bound books, cereals, and dried meats. They also damage some natural and synthetic fibers and may leave yellow stains, especially on linen (Sloderbeck, 2004; Selatolo, 2012). Some entomologists don't advise that the pesticide use for control silverfish and instead advocate controlling numbers by focusing on reducing humidity and on heating or freezing infested articles (Slater and Kastanis, 1997). However, for many places it is impossible to keep the whole environment under low humidity, especially in museum house and library. It is therefore imperative

that alternative methods are employed to control these pests. The alternative method should be cast effective, easily available, eco friendly, and harmless to beneficial animal. In India, thousand year age various plant product used as a traditional medicine for controlling the insect pest and they are not only healthy but also cost effective and eco friendly. Essential oils from plants are valuable secondary metabolites already used as raw materials in many fields, including perfumes, cosmetics, phytotherapy, and nutrition (Lahlou, 2004) As such they are potentially a god source of environmentally friendly insecticides.

Recently many researchers have focused on using essential oils as anti insect reagents (Morita and Yatagae 1994; Liu and Ho, 1999; Cheng et al., 2005; Jang, et al., 2005). The essential oils have high insecticidal activity against field crop, stored grain and household insect pests (Isman et al., 2001, Tripathi et al., 2000; Verma et al., 2000, Singh et al.,

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