

Chemical Composition and Insecticidal Activity against *Sitophilus zeamais* of the Essential Oils of *Artemisia capillaris* and *Artemisia mongolica*

Abstract

Artemisia capillaris is a famous traditional Chinese medicinal herb used mainly as a choleraetic, anti-inflammatory, and diuretic agent in the treatment of epidemic hepatitis. The essential oils of *A. mongolica* and *A. Capillaris* showed contact toxicity against *S. zeama* is adults with LD50 values of 87.9two and 10.9two $\mu\text{g}/\text{adult}$, respectively. Compared with the famous botanical insecticide, pyrethrum extract, the two essential oils were two0 times less active against the maize weevils because pyrethrum extract displayed a LD50 value of 4.two9 g/adult. The essential oils of *A. mongolica* and *A. capillaris* also possess strong fumigant activity against *S.*

Keywords: *artemisia mongolica* • essential oil • *artemisia capillaris* • *aulacophora femoralis*

Introduction

Essential oils derived from over seventy five plant species are evaluated for chemical toxicity against keep product insects to this point. Botanical pesticides have the advantage of providing novel modes of action against insects which will reduce the danger of cross-resistance moreover as providing new leads for style of target-specific molecules. throughout our screening program for brand new agrochemicals from native wild plants and Chinese medicinal herbs, the essential oils from aerial components of shrub *capillaris* Thunb. *A. mongolica* (Fish. ET Bess.) Nakai (Family: Compositae) are found to possess insecticidal activity towards the maize beetle, *Sitophilus zeamais* (Motsch) [1]. The bottom powder of *A. Capillaris* and *A. mongolica* were subjected to hydro-distillation employing modified Clevenger-type equipment for six h and extracted with n-hexane. Anhydrous sulphate was accustomed take away water when extraction. Essential oils were kept in airtight containers in a icebox at four °C. The oil yields were zero.87% v/w and zero.75% v/w for *A. capillaris* and *A. mongolica*, severally. Gas activity Associate in nursing analysis was performed on an Agilent 6890N instrument equipped with a flame ionization detector and HP-5MS (30m \times 0.25mm \times 0.25 μm) capillary column, while the essential oil parts were known on Associate in Nursing Agilent Technologies 5973N spectroscope [2]. The GC settings were as follows: the initial kitchen appliance temperature was command at sixty °C for one min and ramped at 10 °C min⁻¹ to one hundred eighty °C for one min, so ramped at twenty °C min⁻¹ to two80 °C for fifteen min. The gizmo temperature was maintained at two70 °C. The samples (1 μL) were injected neat, with a split quantitative relation of 1:10. The carrier gas was atomic number two at rate of flow of one.0 mL min⁻¹. Spectra were scanned from twenty to 550 m/z at two scans s⁻¹. Most constituents were known by gas action by comparison of their retention indices with those of the literature or with those of authentic compounds out there in our laboratories. The retention indices were determined in respect to a homologous series of n-alkanes (C8–C24) beneath equivalent operative conditions. Additional identification was created by comparison of their mass spectra on each column with those keep in office 05 and Wiley two75 libraries or with mass spectra

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from literature. Part relative percentages were calculated supported rate peak areas without victimization correction factors. The chemical activity of the two essential oils against *S. zeamais* adults was tested as delineated by Liu and metallic element. A serial dilution of the two essential oils (six concentrations) was ready in n-hexane. A Whatmann filter paper (diameter two.0 cm) were every fertilized with twenty twenty dilution, and then placed on the side of the screw cap of a glass ampoule (diameter two.5 cm, height 5.5 cm, volume two5 mL) [3].

Description

The solvent was allowed to evaporate for thirty s before the cap was placed tightly on the glass vial, every of that contained ten insects within to make a sealed chamber. Preliminary experiments demonstrated that thirty s was decent for the evaporation of solvents. n-Hexane was used as an impact. Five replicates were dole out for all treatments and controls, and that they were incubated for twenty-four h. The insects were

then transferred to wash vials with some culture media and came back to the setup and observed daily for determination of end-point mortality, that was reached when one week. The experiments were perennial in 3 times. The LC50 values were calculated by victimisation Probit analysis [4].

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None

Conflict of Interests

None

References

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