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INSECTICIDAL EFFECTS OF ESSENTIAL OIL OF *ROSMARINUS OFFICINALIS* ON LARVAE OF *PRISTIPHORA ABIETINA*

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Abstract

Today, Pristiphora abietina is known worldwide as an essential forest pest damaging spruce needles. Essential oils are of increasing interest because of the increased risk of chemical contamination with synthetic pesticides to control pests. The chemical constituents of essential oils of flowers and leaves of Rosmarinus officinalis were produced with steam distillation in Clevenger apparatus in the study. Gas Chromatography-Mass Spectrometry (GC-MS) were used to analyse the oil and to identify 38 components that represent 99.80 % of the total oil, with α-Pinene (27.02%), 1.8-Cineole (25.1%), Camphor (13.11%), Borneol (6.43%), and Linalool (4.27%). The essential oil of R. officinalis was applied with as 10, 15, and 20 µL/petri to determine the larvicidal efficacy and Lethal Dose (LD) toxicity of R. officinalis essential oil on P. abietina larvae in the laboratory. Deaths were observed at different proportions at R. officinalis essential oil applications at 10, 15, and 20 µL/Petri doses at 24th, 48th, 72nd and 96th hours on four instar larvae of P. abietina (38.3-100%). According to LD50 and LD90 values, the highest toxicity was found as L1 (0.63 µl / larvae), and the lowest toxicity was found as L4 (10.94 µl / larvae). As a result, rosemary essential oil showed high toxicity against L1 and L2 instar larvae of P. abietina.

Key words: biochemical components, larvicidal activity, little spruce sawfly, rosemary oil

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