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PROGRAM





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Effects of the essential oils of *Lavandula angustifolia* Mill and *Zataria multiflora* Boiss on reproduction and F1 population of *Callosobruchus maculatus* (F.)

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Inhibitory effects of *L. angustifolia* and *Z. multiflora* essential oils were evaluated on reproduction and F1 progeny production of *C. maculatus*. Insects culture and bioassays were conducted at $30 \pm 1^\circ\text{C}$, $60 \pm 5\%$ RH and dark condition. Essential oils were taken by hydrodistillation. The results indicated that there was a negative and significant linear relationship between reproduction of beetles and oil concentration. Similar relationships was found between F1 progeny and oil concentration. Comparison of regression slopes showed that *L. angustifolia* oil was more effective than *Z. multiflora* oil on reproduction and F1 progeny population. The essential oils analysis by GC-MS showed that the main compounds of *L. angustifolia* oil were linalool, 1,8-cineol, rosefuran epoxide, menthone, isomenthol and dihydro carvone (trans) and those of *Z. multiflora* oil were thymol, linalool and p-cymene. The results indicated that these two essential oils especially *L. angustifolia* oil might be suitable alternatives for stored products protection against *C. maculatus*.

Keywords: Essential oils, F1 progeny reduction *L. angustifolia*, reproduction inhibitory, *Z. multiflora*.

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