



6- Salwa S. Pasha, (2022). Activity of Some Essential Oils as Adulticides for The Control of The Red Flour Beetle Adults, *Tribolium castaneum* (Herbst). Egyptian Academic Journal of Biological Sciences F. Toxicology & Pest Control, 14(2): 49-59. DOI: 10.21608/EAJBSF.2022.253784.

ABSTRACT: Three EOs from the Lamiaceae family were tested for toxicity and repellence (basil, *Ocimum basilium* L; thyme, *Thymus vulgaris* L and sage, *Salvia officinalis* L) were evaluated against to adults of the red flour beetles, *Tribolium castaneum* (Herbst) in this research. The results showed that basil oil was the most toxic among the oils tested when its effectiveness was tested using the thin film layer and treating grain, where the values of LC50 were 0.549% and 2. 831%, in comparison to 0.729% and 5.075 % for thyme oil and 0.711% and 6.319% for sage oil in both toxic methods, respectively. It also had the highest slope = (5.72) in the thin layer treatment, while sage oil had the highest slope = (7.81) in the treating grains method. As a result, basil had the highest relative potency for both toxicity treatments, reaching more than twice the relative effectiveness of sage oil in the thin layer treatment. All the concentrations of the tested oils, (basil, thyme and sage) were recorded with a maximum percentage of repellence for *T. castaneum* adult during the tested exposure intervals from one hour to 24 hours of exposure so that the lowest percentage of repellence was recorded at 2% concentration with 92.32, 80 and 60 for oils of basil, thyme and sage, respectively after 1 h, it up to 76.67 and 93.33 and 93.33%, respectively after 24hrs from exposure. While the concentrations of 8 & 4% of the three tested oils maintained the highest repellence class V during the different exposure intervals from 1 to 24 hours, with repellence percentages ranging between 86.49 - 100%. It is worth noting that the repellence percentages increased with the increase in concentration, as well as with the increase in the exposure interval.

Keywords: *Tribolium castaneum*, EOs, Basil, Sage, Thyme, Toxicant, Repellence.