



4- Salwa S. Pasha, (2022). Activity of alkaloid compounds extract of tobacco on adults of the red flour beetles, *Tribolium castaneum*. International Journal of Entomology Research, 7 (5): 57-64.

**ABSTRACT:** The aim of this study was to see how effective natural extracts of tobacco (*Nicotiana tabacum*) were as botanical insecticides in controlling red flour beetles, *Tribolium castaneum*, as a safe alternative to synthetic insecticides. Blended tobacco leaves were extracted with ethyl alcohol (99%) solvent, as well as alkaloid compounds were extracted from ethanolic tobacco extract, and then bioassay experiments were conducted for both ethanolic and alkaloid compounds tobacco extracts on adults of *T. castaneum* as a contact poison using thin film residue and as a repellent agent, at concentrations of 20, 15, 10, & 5% for ethanolic extract and 6, 3, 1.5, and 0.75% for alkaloids extract. The mortality Adults and repellency percentage were calculated 24 hours after exposure. The LC<sub>50</sub> values indicated that tobacco alkaloids extract exhibited the highest toxicity on adults of *T. castaneum* was 1.29%, while it was 13.24% for ethanolic extract. The toxicity index also indicated that the relative potency of the alkaloid extract was ten times that of the ethanolic extract. With regard to repellency activity, the two extracts of tobacco were strongly repellent to *T. castaneum* where the high concentrations of both of them maintained the highest class (V) of repellency over a period of 24 hours, with an advantage for the alkaloids extract, which is to obtain the highest repellency with lower concentrations than the ethanolic extract. In addition to the appearance of a nervous effect on insects during the experiment for alkaloid extract. Finally, tobacco extracts, especially alkaloids extract, are a good alternative synthetic insecticide for controlling flour beetles.

**Keywords:** tobacco, *Nicotiana tabacum*, leaf extract, alkaloids extract, *Tribolium castaneum*, botanical insecticides.