

## عنوان مقاله:

Fumigant toxicity of essential oils from Citrus reticulata Blanco fruit peels against Tribolium castaneum Herbst  
(Coleoptera: Tenebrionidae)

## محل انتشار:

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## خلاصه مقاله:

Certain compounds of plants such as essential oils, with insecticidal properties have been considered as alternatives to chemical pesticides for pest control. This study reports the fumigant toxicity of Citrus reticulata Blanco (Rutaceae) peel essential oils against stored-product insect pest, red flour beetle, Tribolium castaneum Herbst (Tenebrionidae) adults. Experiment was carried out at  $27 \pm 1$  °C and  $60 \pm 5$  % relative humidity in darkness. Experimental concentrations were 15, 22, 31, 45, and 63  $\mu\text{l/l}$  air tested on adult (1-7 days old) insects after 24 and 48 h of exposure. Results indicated that essential oils from C. reticulata had fumigant toxicity effects against this stored pest.  $LC_{50}$  values were 38.2 and 35.6  $\mu\text{l/l}$  air at 24 and 48 h after exposure of T. castaneum adults respectively. The essential oils of Citrus reticulata fruit peels at the highest dose of 63  $\mu\text{l/l}$  air caused 76.6 % and 79 % mortality of insects after 24 and 48 hours of exposure, respectively. Mortality of T. castaneum increased with both increase in concentration of C. reticulata oils as well as exposure time of treated insects. These results suggest the potential of C. reticulata oil as a control agent against T. castaneum.

## کلمات کلیدی:

Citrus reticulata, Essential oil, toxicity, Tribolium castaneum

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