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The effect of time's exposure and thickness of material on efficacy of microwave energy in some different stages for some storage insects

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Dates artificially infested with eggs and larvae of *Ephestia cautella* and corn seed artificially afflicted with *Sitotroga cerealella* have been exposed to Microwave 1000 W at different exposure time (0, 20, 25, 30, 35, 40, 45 seconds). The results have indicated that the Microwave has high capacity on killing eggs and larvae of *E. cautella* and *S. cerealella*; besides this effect gets increased by increasing the exposure time. Ratio of killing eggs reached to 92% and 100% during time of exposure 40, 45 seconds consequently, in comparison with 23%, 38% at exposure time 20, 25 second. The results have not indicated the spiritual differences in ratios of killing when dates arranged with one layer or two layers when being exposed to ray. In respect to larvae processing, the percentage of killing reached to 93%, 97% during exposure time 40, 45 sec consequently in comparison with 20%, 35% at exposure time 20, 25 sec. In treatment of the larvae, results indicated that mortality was 93%, 97% at 40, 45 sec exposure time compared with 20%, 35% at 20, 25 sec exposure time. In respect to corn seeds, mortality of larvae of *S. cerealella* moths was 97% at 45 sec exposure time compared with 34%-36% at 20 sec exposure time. Results have not indicated to any effects on germination of corn seeds. Results have explained that the efficacy of microwave on controlling fig moth insect that afflicted stored dates played as an alternative method for Methyl Bromide in stored corn seeds.

Biography

Mohammed Z Khalaf completed PhD and is working as a Research Scientist in Integrated Pest Control Research Center, Directorate of Agricultural Research, Ministry of Science and Technology, Baghdad, Iraq.

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