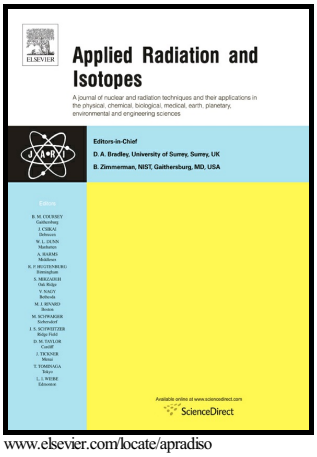

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Feasibility of using the radiation-based sterile insect technique (SIT) to control the olive fruit fly, *Bactrocera oleae* Gmelin (Diptera: Tephritidae) in Iran

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Abstract

Bactrocera oleae is one of the most hazardous pests threatening olive orchards in Iran. SIT is an environment-friendly system of pest control based on releasing sterile males able to compete with wild males to mate with wild females. To determine sterile doses of radiation, pupae were irradiated to the doses of 0 - 160 Gy. Doses of 90 – 100 Gy were found optimal providing the necessary sterilization without severely impairing the competitiveness of the irradiated males in mating.

Key words: Insect control, sterility, irradiation, fruit fly

1. Introduction

The olive plantations of Iran take 29,700 hectares, and their average production from 2007 to 2010 amounted to 40816.5 tons per year (FAO, 2012). The olive fruit fly, *Bactrocera oleae* Gmelin (Diptera: Tephritidae), is one of the most harmful pests in olive plantations in a