INTRODUCTION
The date palm (*Phoenix dactylifera, L.*) is one of the oldest cultivated fruits in the world. Dates are one of the richest source of nutrients mainly sugars, vitamins, proteins, sodium, iron, magnesium, and other minerals. Date fruits may be eaten fresh or utilized industrially in the production of syrup, liquid sugars, vinegar, ethyl alcohol, yeast, pastry and animal feeds. Date fruits are classified according to their moisture content into soft date exceeding 30% moisture, semi-dry dates with moisture content ranging between 20-30%, and dry dates with less than 20% moisture content (Ahmed *et al.*, 1974). Semi-dry dates are concentrated in Sharkia and Giza Governorates, while dry dates dominate in Upper Egypt. Cultivated date palms in Egypt (soft, semi-dry, and dry) reached 6951247 palms which produced 646039 tons annually according to the Latest Agricultural Statistics (1994)*.

Recently, the Ministry of Agriculture has demonstrated great interest in increasing agricultural products as well as to reduce post harvest losses. Reports showed that, developing countries suffer major post harvest losses up to 40% of their agricultural output. Unfortunately, date fruits are easily attacked by different organisms i.e. insects and microbial flora during storage which causes rotting and spoilage of the fruit. Currently dates are preserved by many methods such as low temperature, steam treatment, pasteurization,

*Agricultural Economic Reports (1994), Ministry of Agriculture, Dokki, Giza, Egypt.*
drying, fumigation, low temperature storage and packing in vacuum or inert gas. Higher temperature (more than 55°C) induced an adverse effect on the colour and flavour, while drying gives an uneven rough, fibrous or rubbery texture. Methyl bromide is the main fumigant used for insect disinfestation. However, its application causes serious problems i.e. residue accumulation and in complete kill of some stages of the insect (Vincent and Lingered, 1972). The other used methods of preservation are too expensive and need special facilities. Consequently, new methods of date disinfestation have been developed. The most successful method in this respect is irradiation.

Irradiation treatment is very effective in eradicating insect infestation in packed dried dates, reducing of microbial contamination, and prolonging the shelf life of fresh dates. Different United Nation Agencies mainly World Health Organization (WHO), Food and Agriculture Organization (FAO), and International Atomic Energy Agency (IAEA) have jointly confirmed that irradiation is unconditionally safe for a wide range of foods when the absorbed dose do not exceed 10 K Gy. Meanwhile, heat plus irradiation, greatly reduce the negative effects of irradiation.

Thus, the ultimate goal of this investigation is to find out the best alternative method for maintaining fruit quality and prolonging the marketable period of date fruits. Meanwhile, the selection of the most suitable dose of irradiation and package is valuable in reducing fruit loss and in turn to increase the income of date producers.