

INTRODUCTION

Since the end of the second world war, agriculture witnessed rapid advances in the field of chemicals for crop protection. The field of insecticides alone witnessed the appearance of different groups of chemicals in addition to smaller groups of compounds with hormonal effect. This proliferation in materials evoked an equal amount of concern about the side effects of introducing such biologically active compounds and its ecological impact. This controversy lead to the allegation that the pesticides industry has over stated the significance of pests in order to create a market which it can then supply. This error is unlikely to be made by any practical farmer, to whom pest activity can be disastrous and who represents the market.

It is regrettable that it is necessary to use pesticides on crops, but it is a necessity arising from the fact that mankind is always looking for better living conditions, which generally speaking, disrupts the usual constraints placed upon species equilibrium.

As a consequence of this progress in the field of chemical pest control the subject has become multidisciplinary including synthetic chemistry and

formulation for the producing organisation; for the user, an understanding of analytical methods for either quality control of the products on the market or residue analysis for the safe use of agricultural produce, previously protected by pesticides, in addition to knowledge of metabolism and mode of action, are needed. It is noteworthy that the same informations are required for poisons and drugs of importance in medical toxicology.

Tomatoes (Lycopersicon esculentum) is a widely grown crop in Egypt, it is grown in three different dates so as to have fresh tomato fruits available throughout the year. Tomatoes are attacked by numerous pests. Insect pests are mainly aphids, white flies and in summer and autumn the Egyptian cotton leaf worm Spodoptera littoralis (Boisd.). Accordingly tomatoes receive a number of pesticidal treatments for the control of the insect pests and other fungal diseases: The most common of the insecticides used is malathion for the control of aphids, and to a lesser extent white flies: Pirimiphos methyl was introduced as a substitute for malathion with an additional advantage of lower mammalian toxicity. Profenofos is a relatively new insecticide, reported to be particularly effective against white flies,

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"recommended by Ministry of Agriculture" which are, by far, the major pest of tomatoes, because of its role in transmission of viral diseases.

The purpose of the present work is to investigate the residues of the above mentioned three organic phosphorus insecticides; malathion, pirimiphos methyl and profenofos applied to tomatoes grown in two seasons; summer crop and winter crop in order to determine the residues and their deterioration in relation to the seasons of year, with the ultimate aim of recommending a period post spraying after which it becomes safe to put the crop on the market.