

INTRODUCTION

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In Egypt, apricot (*Prunus armeniaca* L.) can be considered as one of the most important economic fruit crops. Its economic importance comes from the fact that large quantities of its fruits are eaten in a fresh state in addition to their uses in food industries. The juice may be extracted and used in food manufactured products such as cordials drinks, mixed with sugar to make Sherbet, Jams, Jellies, Canned, or may be preserved as semi-dried sheath.... etc.. The edible fruit portion may be dried as a whole with or without seeds . In addition, segments of the edible fruit portion may be used in ice-and soft creams as well as cakes.

The total cultivated area from apricot in Egypt is about 7000 feddan (mainly in Fayoum and Kalubia governorates) . Their yielded fruits are still under the level of our consumption, yet a lot of manufactured apricot products are imported yearly.

Many problems in the field of apricot husbandry are still without clear solve such as its proper propagation. Till now apricot is propagated mainly by seeds under Egyptian conditions. Seeds fail to germinate directly after harvesting time as a specific type of dormancy is present .

Much empirical work has been done since the beginning of the last half of the present century in attempt to find suitable substances for improving the germination and the growth of the resulted seedlings of many fruit crops. The substances which proved most successful seemed to be GA or IAA and some times many other substances . However, very little is known about the response of apricot seeds and seedlings under the artificial applications of such growth regulators and the mechanism of their actions .

The physiological responses of plants to the applications of growth regulators were found to vary according to many factors, such as the chemical nature of the

used growth regulator , its concentration, method of application, the species and varieties of plants, the age of the plant at the time of application, the physiological stage of the treated plants, the environmental conditions at the time of application and growth conditions prior to, and after treatments . All the above are few factors which play a part in determining the results measured by investigators.

According to the above mentioned information it was suggested that careful, investigation might be carried out in an attempt to add more information on the response of apricot during seedling stage to the application of some growth regulators and to elucidate their mechanism of action .

It is known that micro-nutrients play an important role in plant metabolism leading to healthy growth of the resulted seedlings . Such nutrients are stored in seeds, however, in many cases such stored elements are not sufficient for maintaining good seedling growth . Therefore, it was thought advisable to carry out a study on the presence or absence of some micro-nutrients, i.e. Zn, Mn or Fe on the germination process and the growth behaviour of the yielded seedlings of apricot.

In trying to approach these aims, a series of studies were carried out which included the following :

Experiment I :

Effect of gibberellic acid (GA_3) or Indole acetic acid (IAA) applied as seed soaking at the rate of 10 ppm of El-Hamawy cv. apricot seeds .

Experiment II :

Effect of GA_3 , IAA, CCC and MH applied as seed soaking at different rates separately or in some combinations with each others using seeds of El-Amar cv. .

Experiment III :

Effect of the presence or absence of Zn, Mn and Fe in the germination media on germination and seedling growth behaviour of El-Amar cv. .

The various studies included the effects on germination percentage, the rate of seedlings emergency index, and the changes in some organic components and nutrients uptake in an attempt to elucidate the mechanism of action of the variable tested substances and micro-nutrients deficiencies on the seedling growth behaviour.