

INTRODUCTION

I- INTRODUCTION

Potato (*Solanum tuberosum* L.) is one of the most important economical vegetable crops in Egypt for local market and export, especially to some European countries. In Egypt, area devoted for potato plantation in 1996 reached 309328^(*) fad. from which 132183, 96113 and 81032 fad. were grown in the summer, Nili and winter plantings with average production of the unit area reached (8.57), (8.39) and (8.48) tons/fad. respectively, with total yeild production of about 2626021 tons.

Egypt in 1996 imported about 87180 tons of certified potato seeds (tubers) from some Western European countries for the summer planting, where as more than 250000 tons of local potato seeds (taken from the summer season yield) were used for cultivating the fall and winter seasons plantations.

The problem in Egypt during Nili and early winter plantations return to using big tubers, which obligatory increase the quantity of seed tubers needed that may lead to the increase of the production costs, it will reduce the introduced tubers amounts from the local market. For increasing the yield productivity of potatoes either for local consumption or the production of seed tubers needed for the planting of fall season in Egypt, mainly two ways may be followed. The first one is increasing plant density in the same area which will lead to increasing the number and the yield of seed sized tubers and the

(*) Cited from the Economic and statistical Dept. Ministry of Agric., Egypt.

second one is modifying the agriculture practices by using some plant retardation substances such as, CCC or PP₃₃₃.

Potassium fertilization applied in the suitable quantity and method of application is one of the most factors regulating the plant productivity. Moreover, using different plant densities with some plant growth regulators may lead to increasing potato tubers production in seed size and increasing its storagability after harvest.

This study will present the effect of variable levels and methods of potassium fertilization application on the potato productivity as well as it will demonstrate the effect of the reaction between the plant density and some of the plant growth regulators on plant growth, yield components, quality and storageability of potato tubers. Moreover, studying the effect of plant spacings and growth regulators application on the production of seed sized tubers which will be used as whole tubers for Nili season plantation will be considered.