INTRODUCTION

The ornamental or aromatic plants offer a good economic income for the Egyptian planter. In the last few years there was an interest of their production especially those which extracted for its oils, drugs or pigments. Nowadays using natural pigment and flavors in food industries is very important owing to the mistrust of synthetic food additives and their carcinogenic effects. The production of these plants had been considered as an important part of the agricultural economy for both local consumption or for exportation.

Tt Tagetes sp(Marigold) Fam. Compositae of several classes are valued for the profuse display of their golden flowers which bloom in later summer months Sutton & Sons (1948).

The most two famous species of Tagetes are T. Patula and T. erecta (French and African Marigolds) in spite of their names they came from Mixico and were introduced to Britain over 300 years ago. Both have been greatly improved and flower freely and continuously throughout the summer. French Marigolds are the more dwarf-bushy plants 12-15 inc,tall. They range from lemon tc orange and mahogany red, both single and double. The African marigolds now mostly grown are the carnation-flowered such as Guinea gold and Primrore", and chrysanthemum flowered with shaggy lead. They are about 2½ ft. tall.

Nicholson (1973) mentioned that the bedding section represented the dwarf varieties of Tagetes patula, or dwarf french Marigolds, also by Tagetes signata, a very neat plant with fine foliage and rather small orange coloured flowers produced in great abundance. The foliage of some marigolds has an odour objectionable to some. There are varietal differences in this respect, and nearly oderless varieties may be selected (christopher (1958) .

Tagetes thrives well in hard conditions such it bears drought, the shade of trees and poor soil with patience Sutton & Sons (1948).

It is grown from seeds sown in late April or May.

Although many strains of Tagetes were well known in Egypt as ornamental plants for planting in beds and borders and also as cut flower, for long time ago, but recently many investigations were carried out for deeping the uses of these plants as an aromatic, drug and colourante plants. Agina (1980) Pointed that the concrete oil from Tagetes flower reaching 0. 124 to 0. 323% .

The importance of Tagetes essential oil extracted from either green organs or flower was recorded by Chandra et al . (1963) ,Kapplev (1971,1973and 1975),Arinshtein and Radchenko(1972). Ickes et al. (1973) reported that the whole plant extract of T. minuta has antitumour effects, while Chan et al. (1975) isolated thiophene compounds which has an antibiotic activity from the root of T. patula.

Miller (1971), Doo (1972), Ohbayashi and Chikaoka (1973) and Kanter (1977) identified the pigments of African marigold (Tagetes erecta L.) petals as xanthophyll in an amount of 3.6 to 6 gm/pound of dry petals, Juin (1977) isolated the two rare glycosides patuletrin and quercetagetin and iso-pyrithrins from callus culture of T. minuta.

Furthermore one of the most important effect of marigold plants is their uses as a very valuable intercrop for controlling plant parasitic nematodes as recorded by Basu and Ray (1975), Alam et al. (1977) and Miller (1977). Also Jacobson et al. (1975) observed that plant extract of T. minuta showed high insecticidal activity.

This work was carried out to study the effect of two growth regulator substances kinetin (6-furfuryl aminopurine) and B-nine (Alar) (N-Dimethylamine succinamic acid) on the growth flowering, oil percent and pigment content of petals of Tagetes patula. The study also included the effect of different fertilization levels of nitrogen, phosphorous and potassium on the same characters.