INTRODUCTION

Egypt has very suitable environmental conditions which give advantages to grow ornamental flowering bulbs for local markets and export purposes. The flowering bulbs are generally cultivated to cover these purposes due to their unique decorative value.

Bird of paradise is considered one of the flowering plants, it is an ever green perennial herbaceous plant grown in the regions having moderate climate. The brilliant colors and unusual structure of the flowers have made it exceptionally popular as cut flower. And they are cultivated in many parts of the world in order to produce inflorescences for both local and export markets. In the other side, according to **Bose (1989),** California, Hawaii, Israel and South Africa are some of the places where bird of paradise is grown for commercial production of cut blooms. Bird of paradise occupies a place of pride for landscaping; in the background of herbaceous border, in front of shrubbery or along the side of a bank or lily pool with a highly delightful effect developed when the plants flower. It can also be grown in pots for the pathways of gardens.

Origin and History of Strelitzia:

Strelitzia is indigenous to South Africa. The species, *S. reginae* is commonly known as bird of paradise, the name comes from remarkably shaped and colored flower clusters, like a bird. The genus is named in honor of Queen Charlott Sophia, the wife of King George III, who was also the Duchess of Mechlinburgh-Strelitz a patron of botany.

Taxonomy and Description of Strelitzia:

According to **Bailey (1976)** and **Perry (1977)** the genus of **Strelitzia** belongs to **Strelitziaceae** family. **Strelitzia** plants are rhizomatous, sometimes with erect woody stem. Leaves are large, long petioled. Scape is terminal or in the upper axis, short-exerted from the sheaths of the leaves. Bracts are large, spathe like, boat-shaped, acuminate, solitary at the end of the scape or 2, slightly distant, perianth long-exerted. Sepals are free, long, carinate, petals are dissimilar. Stamens are 5 ovaries is 3-celled, many seeded. The genus **Strelitzia** includes about 5 species (reginae, augusta, nicoli, parvifolia and kewensis).

Strelitzia reginae plant is a very popular orange purple flowered species and commonly known as bird of paradise, but elsewhere as Crane lily, semi-aquatic perennial herb, **(Coombes, 1985).** It grows up to 90 cm high. Roots are large, strong growing. Leaf stalk is about 45 cm long, leaf blade about the same length. The leaves radiate out in a fan. The flowers are orange and purple and very brilliant, emerging from the purplish spathes on a stem about 90 cm long.

Controlling the height of *Strelitzia reginae* plant would make it possible to grow in pots, and to be used as flowering house plants.

An ideal pot plant is approximately two to two and half times as height its pot. Therefore, height control is of utmost important to the pot plant grower. Height control can be achieved to a certain extent by controlling the photoperiod, but additional control of height is needed and can be done with some growth retardants. Growth retardants are organic chemicals

which retard stem elongation, increase green color of leaves and indirectly affect flowering without causing malformation in the plants. Therefore, treating potted plants with growth retardants will continue to be the most popular technique for regulating height.

Flower formation occurs at the shoot apical meristem and is a complex morphological event. The ability to flower (i.e., to make the transition from Juvenility to maturity stage) is attained when the plant has reached a certain age or size **(Taiz and Zeiger, 1998).** In ***Strelitzia reginae*** plants it occurs when the seedling reached 4 to 7 years old **(Hetman and Poyroszewska, 1983).**

The present investigations were carried out to investigate the following points:

- To study the effect of some growth retardants i.e., paclobutrazol, cycocel and uniconazole on growth, flowering and chemical composition of *Strelitzia reginae* offsets in order to produce it as potted flowering plants for house and garden uses.
- To accelerate the transition of *Strelitzia reginae* seedlings from juvenility to maturity by using stimufol (as a complete fertilizer containing macro and micro nutrients) and foliar application of the amino acid tryptophan (a precursor of indole acetic acid)
- To study the effect of some chemical growth substances i.e., kinetin, GA_3, paclobutrazol and thiourea on growth, flowering and chemical composition of *Strelitzia reginae* plants (three years old, planted in the open field).