INTRODUCTION

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The Arab Republic of Egypt has one of the worlds favorite climate for growing many crops. Besides a favorable geographic situation, Egypt has also extensive possibilities to share the cut flower market in Europe and the near Arab countries. But this would require substantial modifications and improving of the present local practices in time and quality of production, and handling of the major cut flower crops, of which roses represents an important issue.

The Rose plant belongs to the family Rosaceae. It was well known in Egypt since the Ancient Egyptians. There are two major groups of roses, the first is shrub roses, and the second is climbing ones. The shrub roses are only used for cut flower purposes on the commercial scale. The flower rose has many shapes and colors, some varieties have an aromatic scent. Furthermore, rose plants could be used in landscape gardening and design purposes, for the importance of rose plants there are many societies which have the interest for the production and selecting new varieties. Among of these societies are the well known; the National Rose Soc. in England and the American Rose Soc. in the U.S.A.

The local flower production of roses in Egypt is almost allover the whole year. In winter season, the production plays an important role for both exportation of flowers and for the local market.

The experimental work herein includes two parts, the first part includes spraying some of growth regulators on rose plants using some known materials as GA_3, kinetin, ethrel, besides the new substance paclobutrazol (PP_{333}).

The paclobutrazol "$C_{15}\ H_{20}\ CL\ N_3O$" was used in large scale in the last few years, frequently on some members of Rosaceae such as, apple,

pear, peach and apricot trees, (it is the first in Egypt to use the paclobautrazal in roses according to the literature reviewed). So, the present investigation aims to give more light on the plant response to this material besides the other materials used and their physiological effect on the yield and quality of rose (to find their mode of action on rose on both the growth and flower productions).

The second part-using different plant density because the limitation of cultivated area in Egypt created a noticeable attention of increasing the usage of area planted with roses and improving its production for local and export purposes. Furthermore, the present work aimed to study some means for improving the yield and quality of rose flowers of Mercedes rose during the export season, mainly winter and spring.