1. INTRODUCTION

In recent years, great efforts have been made in Egypt to increase the cultivated area and its productivity particularly for forage and legumenous crops. Egyptian clover is the most important forage crop for livestock feeding. Many attempts were made to increase its foliage yield and quality.

On the other hand, legumes have played a major role in human being food. Consequently, man has been making to use the capacity of legumes for symbiotic nitrogen fixation as a source of enrichment the soil fertility for growth of other crops.

Many investigators studied the effect of some growth regulators on plant growth and yield. The results reported by various workers on the effect of exogenously applied regulators have been rather conflicting. Growth regulators have a function in the regulation of source and sink activities to direct crop growth and development. On the other hand, these substances can interfere with the biosynthesis, translocation and metabolism of plant hormons. However, they can replace or supplement phytohormones when the level of the later is sub-optimal.

The gibberellins are particularly interesting as plant hormones. One of the famous gibberellins (GA_3) used by the farmers is gibberellic acid. It was applied to some cultivated plants in order to

increase fruit setting, fruit size and total yield. GA_3 may be also benefit in increasing forage green yield and improving its feeding value. It possessing higher physiological activity. Many authors have established that the most dramatic effect of GA_3 is its ability to stimulate the growth of stem, plant branching and dry weight of shoot. In addition, under the influence of GA_3, there were changes not only in growth development, but also in the intensity of the physiological and biochemical process as well as in the uptake of nutrient elements.

The role of indole acetic acid (IAA) in stem elongation seems well established and it is probably also necessary for growth of fruits. IAA is essential for growth of leaves and flowers. In spite of that, gibberellic acid and indole acetic acid have been classified as growth promoters, however, their effects may be completely changed according to the concentration and time of application.

This investigation was carried out to study the effect of gibberellic acid and indole acetic acid treatments on growth of berseem as a fodder crop and soybean as legumenous seed crop, with aim of finding out the standard levels of GA_3 and IAA required for optimum growth, yield and biochemical constituents, as well as the most suitable time of foliar application.