I-INTRODUCTION

Cabbage (*Brassica oleracea* var. *capitata* L.) is one of the most important vegetable crops that belongs to Brassicaceae family. It is commonly grown in Egypt. The cultivated area of cabbage reached 39371 feddan with total production of 462645 tons with an average of 11.75 tons per feddan in 1996* season. Cabbage plant is a gross feeder especially for nitrogen. So, the growth, yield and quality of cabbage will be better by proper amount of N-fertilization.

There is an increasing interest in the use of organic N-sources as fertilizers for the production of vegetables and in particular for the production of “organic growth” vegetables. Many claims have been made concerning the advantages of organic N-fertilization over inorganic N-salts e.g., it is claimed that the organic fertilizers release nutrients slowly and contribute to the residual pool of organic N in the soil. The loss of N especially NO$_3$-N can be reduced, it improves the soil structure properties and can also be a sources of trace elements (Haworth, 1961). The release of organic nitrogen from organic fertilizers is mainly dependent on the degrading action of proteolytic micro-organisms in the soil and to the environmental and edaphic factors such as soil temperature, moisture content and soil types as well as N-mineralization characteristics of the materials (Loll and Bollag, 1982).

The process of biogas generation via the anaerobic digestion of organic waste such as human and animal wastes, crop residues
and weeds, saves local fuel for domestic use and maintains the fermented materials as a nutritionally rich manure (Sathianathan, 1975). Since the biogas manures could be produced by different biogas configuration systems and from different kinds of organic wastes varied in their nutritional value. Therefore, it would be expected that the biogas manures could differently affect the quantity and quality of crops production, the microbial populations and the enzymatic activity i.e., biogas manure is considered as a good source of organic manure rich in macro and micro plant nutrients.

It is worthy to mention that the recent interest now is using organic fertilizers and minimizing if possible the use of inorganic ones, due to its harmful effect on human health. So, the aim of this study is to elucidate the effect of organic and inorganic N-fertilizers on the growth, yield and quality of cabbage plants through using two sources of organic manures i.e., biogas and farmyard manure in combination with ammonium nitrate as a mineral fertilizer to reach the standard used level in fertilizing cabbage i.e., 80 kg N/fed.