INTRODUCTION

The production of the aromatic and medicinal plants has been extensively focused in the recent years and the trend is to return back to use herbs in the folk medicine in most countries.

The cultivation of these plants may extend to the new reclaimated land in order to face the extending demand of the local market and exportation.

Fam. Poaceae (Gramineae) includes several of grasses used as aromatic plants, among these grasses, genus *Cymbopogen,* which includes several species such as *C. citratus, C. nardus* and C. *winterianus,* the herb of these species is usually used in the folk medicine as diveritic, emenagogue, diaphoretic, stomachic, carminative, tonic, antirheumatic, refrigerant and against diarrhea. The extract of the herb is also used in manufacturing soap and cosmotics ***(Bailey, 1914)*** and ***(Guenther, 1970).***

Cymbopogon citratus "lemon grass" is a perennial tender herbacious plants cultivated in Egypt. It has an odour resemble the combine of ginger and lemon odours. It is also an important crop with high production and manifold applications, the plant is a good crop minimizing soil erosion. The oil of lemon grass is used in many purposes, such as perfumes, cosmetic industry, scenting soaps and in the manufacture of synthetic vitamin A ***(Guenther, 1970).***

The plant has narrow leaves, stunted stem and rhizomatous roots, leaf reaches 50-100 cm long and 1.5 cm wide, with scabrid margine, ligule truncate, 0.2 – 0.28 cm long. The fresh leaves contain 0.2-0.4 % oil constitute of 65-86% of aldehydes consisting citral as the main active substance ***(Ping, 1961 and Guenther, 1970).***

Chemical fertilization with macro and micro nutrients is necessary for plant growth and oil content of most aromatic plants. Also growth regulators is one of the limiting horticultural managements in the production of the aromatic plants. So, the aim of this work was to study the effect of different levels of nitrogen, phosphorus and potassium fertilizers either alone or together as a complete fertilizer and also the effect of foliar spray with the micronutrients such as Fe, Zn and Mn. As well as, the effect of foliar spray of Gibberellic acid (GA3) and Naphthalin acetic acid (NAA) on the vegetative growth, oil percentage, oil yield and oil composition as well as total carbohydrates and minerals content of plant leaves.