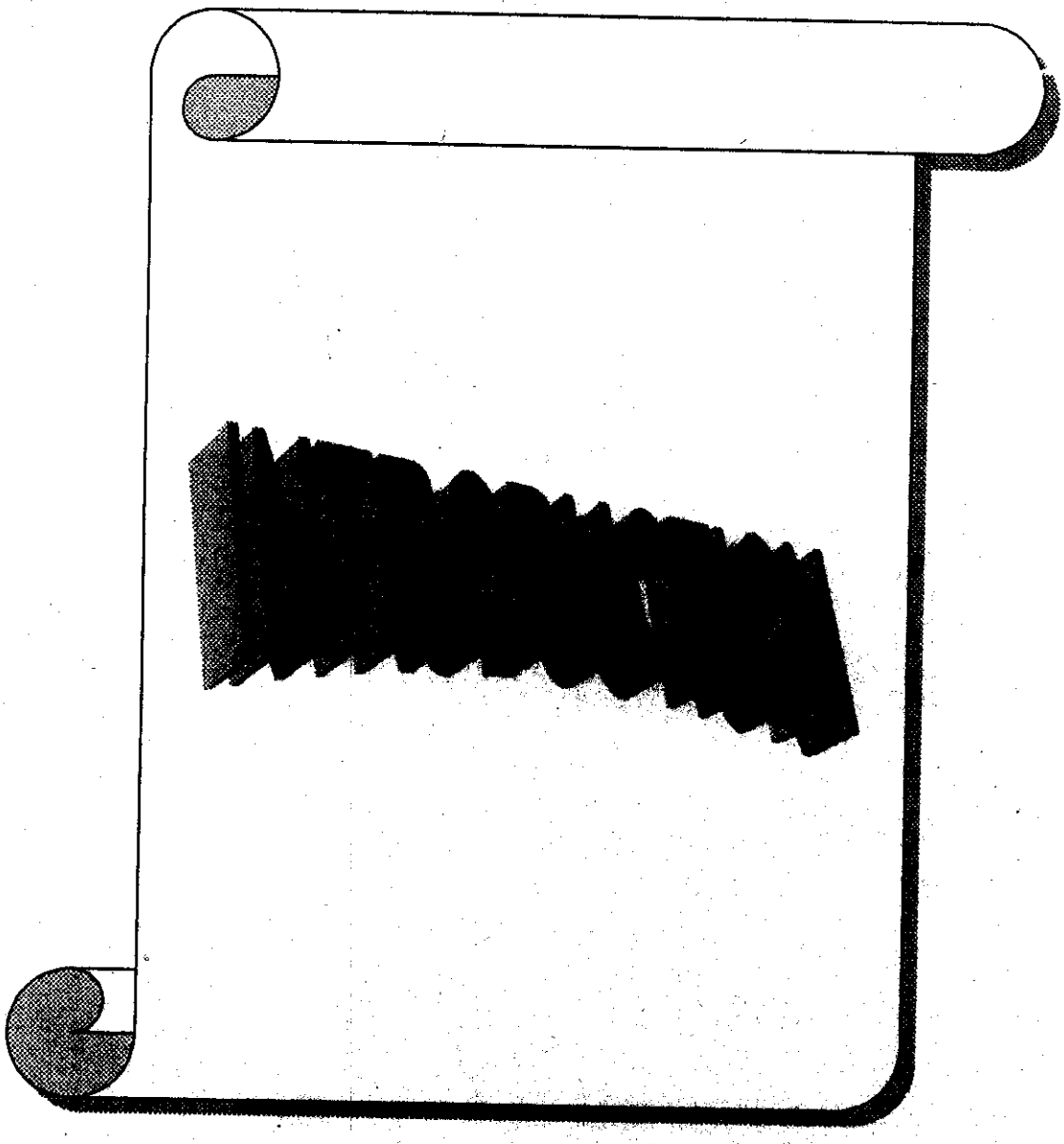

INTRODUCTION

The data of introduction of the Roselle plant in the agricultural system in Egypt is not exactly known, but on 1961 a research program was initiated by the Egyptian Ministry of Agriculture to study the effect of various environmental conditions within the northern regions of Egypt on the growth and production of this important crop (Statistical Report, Egyptian Ministry of Agriculture 1983).

The data were promising and by 1964 Roselle was cultivated at different regions and became a crop of economical importance.

Economically, ***Hibiscus sabdariffa*** has nutritional and medicinal value as well as being used as a fiber crop ***(Askari et al., 1995)***. In this respect, the floral buds of *H. sabdariffa* are used as a refreshing infusions; and medically: in reduction blood pressure, cause relaxation of rat uteri, inhibition of taenia motility and bacterial growth ***(Muller and Franz 1992)***. Also, the seeds are good sources for minerals like phosphorus, magnesium and calcium. Their contents of lysine and tryptophan are also high ***(El- Adawy***

and Khalil, 1994, Rao, 1996). The cultivated area increased from about 399 feddan in 1967 to about 5051 feddan in 1983 *cf. El-Kashlan (1984)*.

Recently, there are many trials and trends for increasing each of fiber, seeds and sepals yield of Hibiscus sabdariffa through enhancement of its growth *(El- Adawy and Khalil, 1994)*.

Of these trials are the use of some plant growth regulators *(Fahmy et al., 1983; Hussin et al., 1989; Hussin et al., 1994 and Omer et al., 1997)*. They concluded that plant growth regulators such as GA_3 may have positive effects regarding different growth and yield parameters of this plant. Also, irradiation with gamma or X-rays were used to induce growth and to improve chimecal composition of *H. sabdariffa (Shome and Hazra 1987 and El-Sherbeny et al., 1997)*.

In addition, the traditional methods have inserted for improving growth and yield of this plant such as using minerals, or organic fertilizers and/or different agricultural managements *(Singh and Ram, 1987; Khalil et al., 1988; Scheffer et al., 1993; Dethier et al., 1993; El-Seoud et al., 1997 and Khattab., 1997)*. In this respect, the available

information on the nutritional requirements and methods of cultivation of Roselle are rather limited. Therefore, the present study was initiated to provide accurate and more detailed information about the cultivation and fertilization of this important economic crop under Egyptian conditions and investigating the role of nitrogen and potassium requirements in relation to different growth and yield parameters of karkade *(**Hibiscus sabdariffa*** **L.** cv Dark Red*)* plant.