INTRODUCTION

The genus vicia is one of the most important genera belonging to the family leguminosae, with a wide distribution over the temprature zones of both hemispheres. It comprises approximatly 166 species Allkin et al., (1986) and is centered mainly in the Mediterraneon regian, western Asia and western south america.

According to the flora europea, it was split into four sections : Cracca, Ervum, Euvicia and Faba Ball (1968), although contradicting with other taxonomic systems Fedchenko (1948), Stankevich (1982) and Cubero (1984).

Vicia faba L. is known as broad beans, field beans or faba beans. It is considered an important legume grain in much of the north temperature zone and at higher altitudes in the cool seasn of some subtropical regions Bond (1976).

Faba been is one of the major field crops grown in Egypt as it provides a substantial part of the protein in human diet. Its acreage reached 129.000 hectars, yielding 2.4 ton/ha (1989-1993) *.

Cultivar identification by biochemical fingerprinting of protein and isozyme electrophoresis is becoming an important task in order to verify cultvar purity. However, such cultivar identification in faba beans has been executed only on a very limited scale on quite a few number of cultivars Stegemann et al., (1980). The developments of a network of biochemical

* Nile Valley Regional Program on Cool Seson Food legumes and Cerals, Six Annual coordination Meeting, Cairo 11-15 September 1994 Field Legumes crop program, Field crop Research Inst., ARC, Giza Egypt.

genetic markers to identify and charactrize each and every cultivar would certainly provide valuble tool for the fast checking of cultiver purity.

Salinity in soils and irrigation water is a proplem that restrict yield in 40.000.000 hectars of irrigated land, which is approximatly one-third of the irrigated land on earth, Bernstein (1975).

Development of salt tolerant crops may allow increased production in soils plagued by salt. Although ample sources of genetic diversity exist for most of the major crops, adequate screening methods for isolating salt-tolerant genotypes have not yet bean developed, Kingsbury and Epstein (1984).

Application of tissues culture teqniques to field crops improvment can enhance the production of faba bean, genotypes which could tolerate the levels of salinity

The objective of this investigation were to study :

1- To assess the biochemical genetic identification and charactrization of faba bean cutivars.

2- To assess salt tolerance for the faba bean cultivars in screan house to find out the best tolerant cultivars and warest tolernat cultivars with different levels of salinity compared with the control according to their morphological measurments.

3- To develope some biochemical genetic markers as SDS-PAGE electrophoresis and some isozymes (estarase, peroxidase,LAP and GOT) to compare between the control and salinity treatments in order to detect the charcteristic protein band (SSP) which is associated with salinity.

4- To detect salt-tolerance genotype and identified molecular markers (RAPDs) for salt tolerance in faba bean.

5- Study the initiation and induction of callus cultures of faba bean tissues for different faba bean cultivars and determination of proline content in callus tissues which associated with salinity.