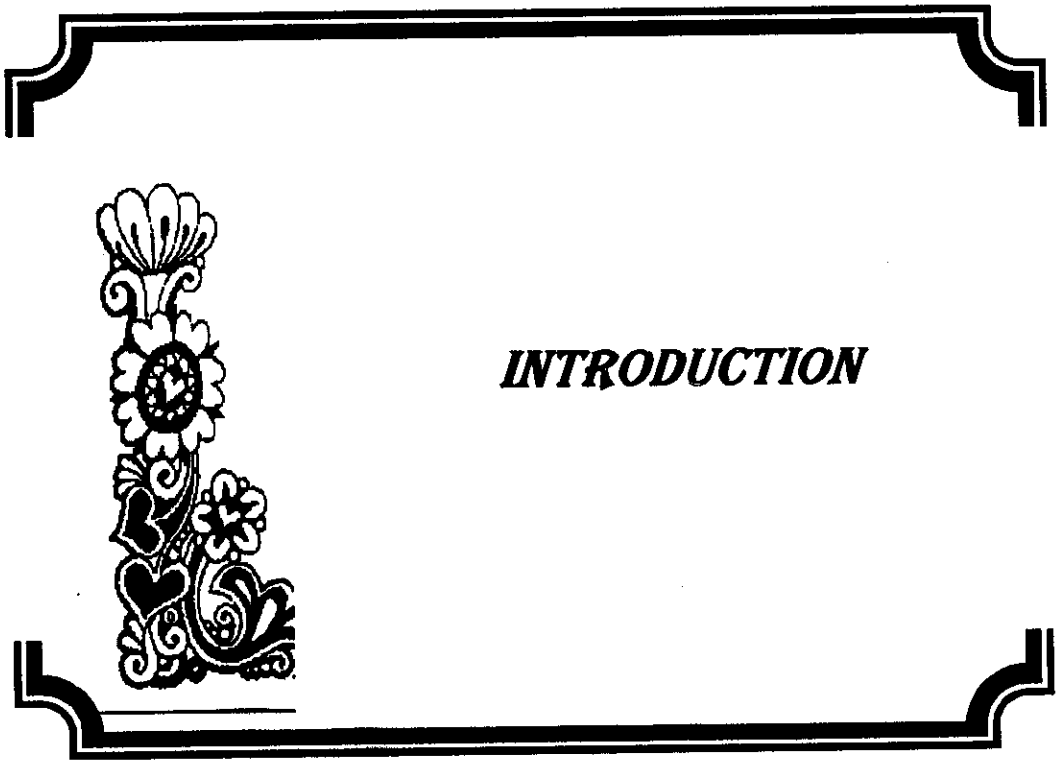

INTRODUCTION

1- INTRODUCTION

Most fruit seedlings are known to be slow growing plants, since they develop few lateral shoots and roots. Such growth habit of these seedlings poses a major problem to nurserymen, since the loss of a large portion of the plant root system in the re-transplanting process coupled with the slow vegetative growth in the first seasons account for the long time required to produce a standard nursery seedlings ***(Brison, 1974).*** Furthermore, a major compensation for the low of soil fertility was the extensive use of chemical fertilizers and gradually it became an expensive item in orchard management. Moreover, fruit growers are faced by the hazards of increased use of chemical in agriculture production which result in environmental polution.

On the other hand, bio-fertilization for fruit crops mainly seedlings called the attention of the nurserymen and it became in the last few decades a good alternative to chemical fertilization. Besides, bio-fertilization has the advantages of avoiding environmental polution and being cheap.

Inoculating the soil with suitable mycorrhizal fungi is considered an item of bio-fertilization where biomyces live between plant roots. In fact, mycorrhizal fungi are beneficial micro-organisms, since they live near the feeder roots of plants and consequently play a vital role in stimulating the various physiological process related to plant growth and development. Moreover, ***Gianinazzi et al. (1989)*** demonstrated abnormal development

of seedlings grown in sterilized soil and suggested a strategy for inoculating soil with vesicular arbuscular mycorrhizae (VAM) fungi.

However, the most important types of mycorrhizae are vesicular arbuscular mycorrhizae and ectotrophic mycorrhizae. The vesicular arbuscular mycorrhizae is caused by an aseptate fungus, which in most cases belong to one of several species of Endogone. They produce a loose weft of hyphae ramifying in the immediate enviroms of the roots. The hyphae penetrate the root tissue mainly the cortex cells, forming there in much branched haustoria called arbuscules (big spores) and vesicles (small spores). Conversely, the ectotrophic mycorrhizae is characterized by dense usually basidiomycetous, hyphal mental which encloses theroot, and the hyphae which penetrate the root cortex between the external cells to form what is called the hearting net.

Furthermore, rock phosphate [$Ca_3(PO_4)_2$] is considered the cheapest source of phosphorus element which is important for plant nutrition. Mycorrhizae fungi are known to play an important role in improving the availability and absorption of phosphorus.

Consequently, this study was initiated to throw some light on the effect of inoculating sterilized and rock phosphate fertilized soil with mycorrhizae fungi (*Glomus macrocarpum and Glomus australe*) on seedling growth of annona cv. cherigmoya guava cv. El-Maamora and mango cv. Hindi. Bissinara.