INTRODUCTION

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Pineapple (*Ananas comnosus* cv.) smooth cayenne is one of the most economically important tropical fruits **(Duval *et al.*, 2001).** The flesh of the fruits are eaten fresh, dessert in salads, compotes or cooked in pies, cakes, puddings or as garnish on ham or made into sauces or preserves. Also, proteolytic enzyme, bromelin derived from pineapple juice used for tenderizing meat, stabilizing latex paint and in leather-tanning process. In addition, all parts of the plants were utilized i.e. leaves yield (strong white silky fiber) and other plant parts were used as food for animals.

Bananas (*Musa sp.*) are widespread in poor tropical countries for its nutritive and economical values. Banana contain a moderate amounts of potassium utilized in regulating blood pressure. In addition, leaves and stems used as mulch system in orchards, livestock feed or in paper industry. Meanwhile, banana puree is made as baby food and ice cream as well as baked desserts. Moreover, flour derived from dried fruits may be used for pastries, mixed with other flour or made chips. Many medicinal uses of banana are recorded from these ailments of skin, back, and blood, headaches, fever, flu, both diarrhea and constipation.

Pineapple and banana plants mainly are grown in well drained loomy soils which available in the narrow valley of Delta. Horizontal extension of either pineapple or banana plants required to raise new cultivars tolerant to different stresses in new reclaimed soils. New cultivars were appeared from banana i.e. Williams and

Grand Naine which can be planted successfully in new reclaimed soils. In the meantime, new cultivars of pineapple are needed to overcome unsuitable climate conditions in Egypt for pineapple plantation. Also, high yielding ability and excellent fruit quality are required. A protocol for breeding program either for pineapple or banana plants should be designed. Biotechnology studies include protoplast isolation and fusion (somatic hybridization) are the backbone of the breeding program.

Protoplast technology has a potential application in the genetic improvement of either pineapple or banana. Plant protoplast means plant cells without cell walls. Protoplasts are particularly valuable for methods of plant improvement since the cell wall is not present for interfering during fusion and injection or uptake of foreign DNA.

The ultimate goal of this study is establishing a protocol for protoplast isolation and culture of both pineapple and banana plants by using different techniques.