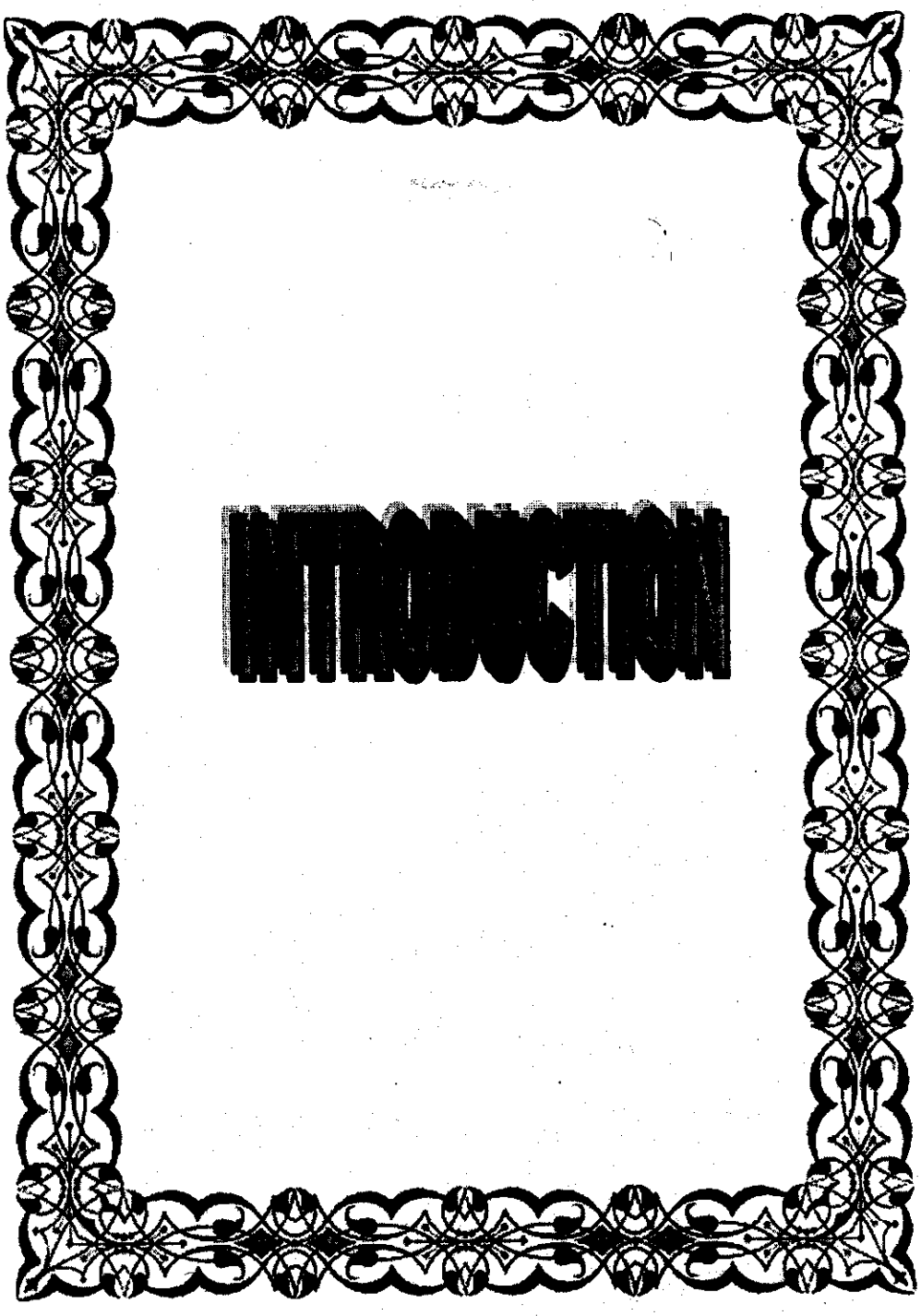
INTRODUCTION

1- INTRODUCTION

Cordyline plant (*Cordyline terminalis L.*, Family: Liliaceae) is the most popular species, and is grown in immense quantities. The foliage on well-matured plants is of an intense rich crimson marked with lighter shadings. Culturing for the ornamental foliage plant can be used as indoor and outdoor attractive plants. It tolerates different climatic conditions; *i.e.* wet and dry weather, high and relatively low temperature.

Spathiphyllum (*Spathiphyllum wallisii* L.: Family: Araceae) is the most finest and popular of all related indoor plants used as a warm house foliage plant . It is of trailing species and varies in size, from small trailing plants to large tub-sized plants Gardeners recommended as soil for culturing a mixture of leaf-mold, peat and fibrous loam, together with some sand and charcoal.

In vitro propagation can produce large numbers of healthy, homogenous, and identical to their mother plants in short and exact time. Also, reduces losses in plant materials with the lowest expenses which maximize the profitability of the propagation techniques. Mean time, *in vitro* propagation encouraged many researchers to study the behavior of the plant and finding out solutions to the problems facing the plants in open climate, *i.e.* diseases and different stresses.

In addition, attracted the attention of cytologists and breeders to induce genetical changes which resulted in new phenotypes

Plant breeders consider genetic variation as an important tool in breeding , mutations can produce a wide range of genetic variation which may result in desirable or undesirable traits. Mutations may be occurred naturally or induced either physically or chemically by chemical mutagens.

Colchicine is a highly poisonous alkaloid, originally extracted from plants of the genus Colchicum(specially *C. autumnale* ,Meadow Saffron)and corms of Gloriosa *spp.* It has a medicinal use in the treatment of gout and as anticancer drug. It is also used for inducing polyploids in plant cells by inhibiting chromosome segregation during meiosis .It was affirmed that subjecting several plant species to various concentrations of colchicine for different durations exhibited a pronounced fluctuation in the morphogenetic parameters and in the endogenous constituents. In this regard, **Wang *et al* (1989)** indicated that proliferated plantlets on scales of *Lilium davlodii* were decreased by colchicine(1-4 mg/l). Also, variations in leaf thickness, leaf colour and bulb size were appeared. **Endo *et al* (1997)** found that treated shoot tips of chrysanthemum with colchicine(0.2%)for 24 or 48 h resulted doubled chromosome plants ,which were obviously dwarfed with less number of branches, leaves and flower buds. **Youssef (2008)** on *Epipremnum aureum* plants reported that colchicine induced changes in the sequence of total bands of protein, while the total bands of protein were 13 in control and colchicine treated plants.

The ultimate goal of this study is to determine the most suitable balanced medium for *in vitro* propagation of both *Cordyline* and *Spathiphylum* plants. Also, evaluating different mutagens by using colchicine application.