I- INTRODUCTION

Marjoram (*Majorana hortensis* M.) Family Lamiaceae is a perennial herb. It is consider as one of the most important plants that contains a lot of secondary metabolities which extracted to produce many pharmaceuticals, perfumes, and cosmetics. It is actions include analgestic, anaphrodisinic antiseptic, antispasmodic, cephalic, cordial, hypotensive nerve, restorative, sedative, tonic and vulnerary. Also, it used in culinary recipes.

Meadow saffron (*Colchicum autumnale L.*) family Liliaceae is a tender perennial herb. The scientific name of this plant consists from two parts, the first one is Colchicum which refers to colchis place on Black river while the second part is autumnale refers to the time of flowering (autumn). Colchicum are most charming and interesting plants of easy culture. They can be grown in rockwork, in beds, or in grass which is not too thick nor too often mown. They thrive in partial shade but succeed in an open sunny border. They remain in good conditions for many years and should not be disturbed unless they showed signs of deterioration, fewer flowers and poor foliage their flowers appear from seedling after 3-5 years with much larger size, better shape, and much delicate flower colour. Also, it is used in production of medicinal components used mainly in goat, anti-Rheumatismic and other problems. Also, it is considered the main source of colchicines and other alkaloids. In addition, it's used as growth retardants through retarding cell division.

Despite advances in the field of organic chemistry, plants are still an important commercial source of chemical and medicinal compounds. The chief industrial applications of secondary metabolites have been as pharmaceuticals (e.g. sterols and alkaloids) and as agents in food flavoring and perfumery. In most cases, these plants have not been subjected to intensive genetic programs for the optimum production of the compound. In-addition, there have been technical and economic problems in the cultivation of these plants. Unfortunately, many third world countries producing medicinal plants are politically unstable and the supply of crude plant materials for processing cannot be guaranteed.

Most of medicinal and aromatic plants appeared naturally in far places difficult to reach. Cultivation of these plants is necessary nowadays to cover the increasing demand of the products derived from these plants. Recently, traditional agriculture for the medicinal and aromatic plants faces a lot of problems mainly undesirable impact of surplass mineral fertilizers and herbicides on the environment as well as the potentially dangerous effect of chemical residues in plant tissues on the human and animal health. In the same time, the detected residual effect of these chemicals restrict the exportation of these plants or their products to several foreign countries. Thus, safe agriculture is the main alternative for traditional agriculture to produce medicinal and aromatic plants free from the residual effect of the dangerous chemicals used.

It has been proposed that many of these secondary metabolites produced by intact plants could be synthesized by cell

culture **(Klein, 1960 and Puhan and Martin, 1970).** Tissue culture produced previously undescribed and cultures of higher plant cells may be considered as an important source of new economically important compounds **(Butcher, 1977).** Although the production of secondary metabolites by cell culture may be impractical in some cases, the techniques of plant tissue culture can be used to improve cultivation of these plants.

The main goal of this study is to find out the best procedures for *in vitro* establishing of both margoram and meadow saffron either through direct or indirect propagation. Also, studying the effect of cytokinin type and 6-benzylaminopurine concentration on proliferation as well as the effect of medium strength and GA_3 on shoot elongation of marjoram explants. In addition, rooting of marjoram is involved.