CONTENTS

	Page
I. INTRODUCTION	1
II. REVIEW OF LITERATURE	4
III. MATERIALS AND METHODS	37
IV. RESULTS AND DISCUSSION	46
V. SUMMARY	83
VI. LITERATURE CITED	88
ARABIC SUMMARY	_

LIST OF TABLES

No.	Title	Page
(1)	Effect of medium type on explant development parameters of Marjoram	46
(2)	Effect of explant type on growth and explant development parameters of Marjoram	48
(3)	Effect of antioxidant treatment on explant development parameters of Marjoram	50
(4)	Effect of cold pretreatment on explant development parameters of Marjoram	52
(5)	Effect of different additives on explant development parameters of Marjoram	54
(6)	Effect of cytokinin type on growth and proliferation parameters of Marjoram	56
(7)	Effect of BAP concentration on growth and proliferation parameters of Marjoram	58
(8)	Effect of medium strength on shoot elongation and proliferation parameters of Marjoram	60
(9)	Effect of different GA ₃ concentrations on shoot elongation and rooting parameters of Marjoram	62
(10)	Effect of auxin type on growth rooting parameters of Marjoram.	64

No.	Title	Page
(11)	Effect of different IBA concentration on growth and rooting parameters of Marjoram	65
(12)	Effect of medium type on explant development and parameters callus production of Meadow saffron explant	67
(13)	Effect of explant type on callus production of Meadow saffron	69
(14)	Effect of antioxidant treatments on callus production parameters of Meadow saffron	70
(15)	Effect of cold pretreatment on callus production parameters of Meadow saffron	72
(16)	Effect of 2,4-D concentration on callus production parameters of Meadow saffron	74
(17)	Effect of BAP concentration on callus development of Meadow saffron	75
(18)	Effect of organic additives on callus maturation, No. of lopes / callus and No. of somatic embryos / callus of Meadow saffron	77
(19)	Effect of hormonal balance on callus maturation and callus development parameters of Meadow saffron.	79

LIST OF FIGURES

No.	Title	Page
(1)	Effect of antioxidant treatment on explant development and greening parameters of Marjoram	50
(2)	Effect of cold pretreatment on explant development and greening parameters of Marjoram	52
(3)	Effect of different additives on explant development, growth and greening parameters of Marjoram	54
(4)	Effect of cytokinin type on growth, proliferation and greening parameters of Marjoram	56
(5)	Effect of BAP concentration on growth and proliferation parameters of Marjoram	58
(6)	Effect of medium strength on shoot elongation and proliferation parameters of Marjoram	60
(7)	Effect of different GA ₃ concentrations on shoot elongation and rooting parameters of Marjoram	62
(8)	Effect of medium type on explant development and parameters callus production of Meadow saffron explant	68
(9)	Effect of antioxidant treatments on callus production parameters of Meadow saffron	71
(10)	Effect of cold pretreatment on callus production parameters of Meadow saffron	72
(11)	Effect of 2,4-D concentration on callus production parameters of Meadow saffron	74
(12)	Effect of BAP concentration on callus development of Meadow saffron	76
(13)	Effect of interaction between BAP and IBA	81

LIST OF PHOTO

No.	Title	Page
(1)	Effect of medium type on explant development	
	parameters of Marjoram	47
(2)	Effect of explant type on growth and explant	
	development parameters of Marjoram	48
(3)	Effect of different additives on explant development	
	parameters of Marjoram	55
(4)	Effect of cytokinine type on growth and	
	proliferation parameters of Marjoram	57
(5)	Effect of BAP concentration (mg/L) on growth and	
	proliferation parameters of Marjoram	59
(6)	Effect of medium strength on shoot elongation and	
	proliferation parameters of Marjoram	61
(7)	Effect of different GA ₃ concentration (mg/L) on	
	shoot elongation and rooting parameters of	
	Marjoram	63
(8)	Effect of auxin type on growth and rooting	
	parameters of Marjoram	64
(9)	Developmental phases of in vitro propagation of	
	Marjoram	66
(10)	Effect of explant type on callus production of	
	Meadow saffron	69
(11)	Developmental stage of Meadow saffron explant	82