

CONTENTS

	Page
LIST OF TABLES.	i
LIST OF FIGURES.	v
INTRODUCTION.	1
REVIEW OF LITERATURE.	3
MATERIALS AND METHODS.	31
RESULTS AND DISCUSSION.	42
1 Rooting studies:	42
1.1 Rooting and survival percentages and growth of peach cuttings.	42
1.1.1 Effect of IBA.	42
1.1.2 Effect of NAA.	49
1.1.3 Effect of IBA+NAA combinations.	57
1.2 Rooting, survival and growth of pear cuttings.	63
1.2.1 Effect of IBA.	63
1.2.2 Effect of NAA.	71
1.2.3 Effect of IBA+NAA combinations.	78
1.3 Effect of preparing time of cuttings on:	86
1.3.1 Total nitrogen and total carbohydrate contents.	86
1.3.2 Total indoles and total phenols contents.	89
1.4 Effect of storage of treated and untreated cuttings on their contents of total indoles and phenols.	91
1.5 Anatomical studies:	97
1.5.1 Anatomy of peach cuttings.	97
1.5.1.1 Root development in peach cuttings.	100
1.5.2 Anatomy of pear cuttings.	100
1.5.2.1 Root development in pear cuttings.	105
2 Budding studies:	109
2.1 Effect of different rootstocks on "Take" percent and "Brittleness moment" at the bud union.	109

	Page
2.1.1 Take percent.	109
2.1.2 "Brittleness moment" of the bud union.	110
2.2.1 Growth of different rootstocks.	110
2.2.2 Effect of different rootstocks on scion growth.	113
2.3 Number of stomata and transpiration rate of budded and unbudded plants:	115
2.3.1 Budded plants.	115
2.3.2 Unbudded plants.	116
2.4 Stem total carbohydrates content:	118
2.4.1 Stem total carbohydrates of different rootstocks in June and December.	118
2.4.2 Effect of different rootstocks on scion content of stem carbohydrates.	118
2.5 Leaf minerals content:	120
2.5.1 Leaf minerals content of different rootstocks.	120
2.5.2 Effect of different rootstocks on leaf minerals content of "Bircher" apple scion.	123
2.6 Stem minerals content:	127
2.6.1 Stem minerals content of different rootstocks.	127
2.6.2 Effect of different rootstocks on stem minerals content of budded plants	130
2.7 Anatomical studies.	137
CONCLUSIONS.	146
SUMMARY.	147
LITERATURE CITED.	156
ARABIC SUMMARY.	