

CONTENTS

	Page
1. INTRODUCTION	1
2. REVIEW OF LITERATURE	4
3. MATERIALS AND METHODS	33
4. RESULTS AND DISCUSSION	39
4.1. The first experiment: Effect of different citrus rootstock on:.....	39
4.1. Some vegetative growth measurements	39
4.1.1. Percentage of success	39
4.1.2- Scion length (cm)	40
4.1.3- Scion diameter (cm)	41
4.1.4- Number of leaves.....	43
4.1.5- Leaf area (cm ²).....	44
4.1.6- Root length (cm).....	44
4.1.7- Fresh and dry weight of root and shoot systems	46
4.2- Leaf mineral contents (nutritional status)	48
4.2.1- Leaf nitrogen content.....	48
4.2.2- Leaf phosphorus content.....	49
4.2.3- Leaf potassium content.....	50
4.2.4- Leaf calcium content.....	51
4.2.5- Leaf magnesium content.....	51
4.2.6- Leaf iron content.....	53
4.2.7- Leaf zinc content.....	53
4.2.8- Leaf manganese content.....	54
4.3- Response of some photosynthetic pigments.....	56
4.3.1- Total Chlorophyll.....	56
4.3.2- Carotenoids.....	57
4.4. Some chemical constituents	59
4.4.1- Total carbohydrates.....	59
4.4.2- Total starch.....	59
4.4.3- Total indoles.....	60
4.4.4- Total phenols.....	60
4.5- Anatomical study of citrus union zone.....	62

	Page
4.2. The second experiment: Effect of the different dates on Kalamata olive Cv.....	70
4.2. Some vegetative growth measurements	70
4.2.1. Percentage of success	70
4.2.2- Scion length (cm)	70
4.2.3- Scion diameter (cm)	71
4.2.4- Number of leaves.....	71
4.2.5- Leaf area (cm ²).....	71
4.2.6- Root length (cm).....	74
4.2.7- Fresh and dry weights of both root and shoot systems.....	74
4.2- Leaf mineral composition	77
4.2.1- Leaf nitrogen content.....	77
4.2.2- Leaf phosphorus content.....	77
4.2.3- Leaf potassium content.....	77
4.2.4- Leaf calcium content.....	78
4.2.5- Leaf magnesium content.....	78
4.2.6- Leaf iron content.....	78
4.2.7- Leaf zinc content.....	81
4.2.8- Leaf manganese content.....	81
4.3- Photosynthetic pigments (foliar pigments).....	81
4.3.1- Total Chlorophyll.....	81
4.3.2- Carotenoids.....	82
4.4. Some chemical constituents.....	84
4.4.1- Total carbohydrates.....	84
4.4.2- Total starch.....	84
4.4.3- Total indoles.....	85
4.4.4- Total phenols.....	85
4.5- Anatomical study of olive.....	87
V. SUMMARY AND CONCLUSIONS.....	90
VI. LITERATURE CITED.....	98
VII. SUMMARY IN ARABIC	-