

CONTENTS

Title	Page
1. INTRODUCTION	1
2. REVIEW OF LITERATURE	7
I- Effect of mulch colors on vegetative growth	10
II- Effect of mulch colors on flowering	14
III- Effect of mulch colors on photosynthates distribution	16
IV- Effect of mulch colors on early and total yield	19
V- Effect of light on endogenous phytohormones	22
1- Cytokinins	22
2- Gibberellins	25
3- Auxins	27
4- Absciscic acid	28
VI- Effect of light on histological feature	30
3- MATERIALS AND METHODS	33
4- RESULTS AND DISCUSSION	64
I- Vegetative growth at 45 days after transplanting	64
I.1. Tomato plants	64
I.1.1. Vegetative characteristics	64
I.1.2. Branches and leaves characteristics	67
I.1.3. Dry matter distribution	71
I.1.4. Photosynthetic pigments	74
I.2. Sweet pepper plants	77
I.2.1. Vegetative characteristics	7
I.2.2. Branches and leaves characteristics	80
I.2.3. Dry matter distribution	78
I.2.4. Photosynthetic pigments	91
II- Vegetative growth at 60 days after transplanting	94
II.1. Tomato plants	94

II.1.1. Vegetative characteristics	94
II.1.2. Branches and leaves characteristics	97
II.1.3. Dry matter distribution	101
II.1.4. Photosynthetic pigments	104
II.1.5. Effect of mulch surface colors on absolute growth rate	104
II.2. Sweet pepper plants	110
II.2.1. Vegetative characteristics	110
II.2.2. Branches and leaves characteristics	113
II.2.3. Dry matter distribution	118
II.2.4. Photosynthetic pigments	121
II.2.5. Effect of mulch surface colors on absolute growth rate	121
III- Chemical composition	127
III.1. Tomato plants	127
III.1.1. Minerals and crude protein concentrations.....	127
III.1.1.1. At 45 days after transplanting	127
III.1.1.2. At 60 days after transplanting	130
III.1.2. Sugars and carbohydrates at 45 and 60 days after transplanting	135
III.2. Sweet pepper plants	140
III.2.1. Minerals and crude protein concentrations	140
III.2.1.1. At 45 days after transplanting	140
III.2.1.2. At 60 days after transplanting	143
III.2.2. Sugars and carbohydrates at 45 and 60 days after transplanting	148
IV- Reproductive growth	153
IV.1. Tomato plants	154
IV.1.1. Flower characteristics	154
IV.1.2. Number of flowers	159
IV.1.3. Pollen grain fertility	161

IV.1.4. Early fruits and early yield	164
IV.1.5. Total fruit yield	167
IV.1.6. Biological and economical yields	171
IV.1.7. Fruit quality	175
IV.2. Sweet pepper plants	187
IV.2.1. Flower characteristics	187
IV.2.2. Number of flowers	187
IV.2.3. Pollen grain fertility	190
IV.2.4. Early fruits and early yield	193
IV.2.5. Total fruit yield	193
IV.2.6. Biological and economical yields	199
IV.2.7. Fruit quality	202
V- Endogenous phytohormones	213
V.1. Effect of color mulches on phytohormones profile in tomato shoots at 60 days after transplanting	213
V.2. Effect of color mulches on phytohormones profile in sweet pepper shoots at 60 days after transplanting	219
VI- Anatomical study	226
VI.1. Effect of color mulches on tomato leaf anatomy	226
VI.1.1. Leaf blade anatomy	226
VI.1.2. Medvein anatomy	231
VI.2 Effect of color mulches on sweet pepper leaf anatomy	237
VI.2.1. Leaf blade anatomy	237
VI.2.2. Medvein anatomy	242
VII- Pioneer findings	250
5- SUMMARY AND CONCLUSION	263
6- REFERENCES	273
7- ARABIC SUMMARY	-