



شبكة المعلومات الجامعية

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جامعة عين شمس
شبكة المعلومات الجامعية
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634,63

**“STUDIES ON GROWTH AND FRUITING OF
OLIVE TREES UNDER SAND DRIFT
CONDITIONS AT NORTH SINAI”**

By

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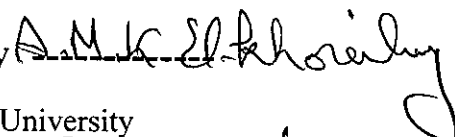
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“STUDIES ON GROWTH AND FRUITING OF OLIVE TREES UNDER SAND DRIFT CONDITIONS AT NORTH SINAI”


By

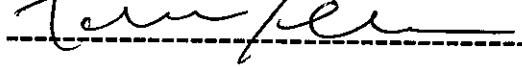
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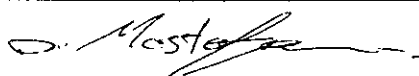

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ABSTRACT

The present study was carried out during the two successive seasons of 2003 and 2004 on 13-years old olive trees cv. Manzanillo grown under El-Maghara, North Sinai conditions. The aims of this investigation were to characterize the sand eroded particles, sand drift potential and sand accumulation around different types of fences, which mainly were constructed to protect olive trees from shifting sand and to study the role of such protection in addition some other treatments i.e. foliar spray of KCl at 1.0 and 2.0 % and soil mulching with polyvinyl acetate diluted with water (1:1 v/v) in enhancing the flowering, fruiting, vegetative growth, yield and yield components. Results obtained indicated that, the prevailing wind directions were from NW and N directions, Thus fences alignment towards ENE-WSW directions. Sand grains were well to moderately well sorted, strongly fine skewed and their diameter ranged between 0.125->0.063 mm. Resultant drift potential was the highest during spring and summer months, while it was the lowest during winter and autumn months. Resultant drift direction was towards SSE direction. The rate of sand accumulation around different types of fences was highest (21.285 kg/ m/ day) during the period extended from 1 January to the end of February, while it was lowest (0.46 kg/m/day) during the period extended from mid of September to the end of December. On the other hand, three parallel fence, foliar spray with KCl at 2.0 % and soil mulching proved to be most effective in enhancing flowering, fruiting, vegetative growth, yield and yield component of olive tree. Generally, the increase of yield due to different fences ranged between 4.02-19.15 %, where it ranged between 2.37-19.62 % due to foliar spray with KCl treatments. However it ranged between 3.49-13.78 % as a result of soil mulching technique. Moreover, different shelter conditions increased N leaf content and decreased P leaf content but it did not affect K leaf content. Foliar spray with KCl increased N, P and K leaf content. However, soil mulching increased N but did not affect P and K leaf contents. In addition, different shelter conditions increased the accumulation of total carbohydrate but they decreased proline content compared with the unsheltered olive trees. Foliar spray of KCl and soil mulching treatments significantly decreased proline content but they increased total carbohydrate compared with the control. Concerning the photosynthetic pigments, soil mulching significantly increased chlorophyll a and total chlorophyll, decreased carotenoids while it did not affect chlorophyll b content. Foliar spray with KCl at 2.0 % decreased chlorophyll a, b and total chlorophyll but it significantly increased the carotenoids leaf content. However, olive trees sheltered by different types of fences exhibited an increase of chlorophyll a, b and total chlorophyll but they significantly decreased carotenoids leaf content. Thus it could be recommended that the treatments of three parallel fence, foliar spray with KCl at 2.0 % and soil mulching with poly vinyl acetate 1:1 v/v were most effective under sand drift conditions of El-Maghara region

 
 'El-Said Hegazi'

Contents	Page No.
List of Tables -----	- i
List of Figures -----	- ii
List of Photos -----	- ii
1. INTRODUCTION -----	- 1
2. REVIEW OF LITERATURE -----	- 3
3. MATERIALS AND METHODS -----	- 44
4. RESULTS AND DISCUSSION -----	- 65
4.1. Sand grains and sand drift characteristics -----	- 65
4.1.1. Sand grains size and texture -----	- 65
4.1.2. Sand drift potential-----	- 69
4.1.2.1. Monthly sand drift potential using wind data-	- 69
4.1.2.2. Seasonal sand drift potential using wind data	- 74
4.1.2.3. Seasonal sand drift potential using sand	
collectors-----	- 75
4.1.3. Sand accumulation around different types of	
fences -----	- 78
4.1.4. Fences Efficiency -----	- 84
4.2. Olive trees Characteristics -----	- 86
4. 2.1. Flowering and fruit set -----	- 86
4.2.1.1. Inflorescence No./meter length -----	- 86
4.2.1.2. Mean flowers No./ inflorescence -----	- 88
4.2.1.3. Perfect flower percentage -----	- 91
4.2.1.4 Initial fruit set -----	- 91
4.2.1.5. Final fruit set-----	- 93
4.2.2. Vegetative growth characteristics -----	- 96
4.2.2.1. Leaf area -----	- 96
4.2.2.2. Specific leaf dry weight -----	- 99
4.2.2.3. Shoot elongation ----	- 101
4.2.3. Leaf water status -----	- 105
4.2.3.1. Relative water content -----	- 105
4.2.3.2. Water loss -----	- 108

Contents

Page No.

4.2.4. Some mineral content of leaves -----	-	110
4.2.4.1. Nitrogen content -----	-	110
4.2.4.2. Phosphorus content -----	-	112
4.2.4.3. Potassium content -----	-	112
4.2.5. Chemical composition of leaves -----	-	116
4.2.5.1. Proline content -----	-	116
4.2.5.2. Total carbohydrate -----	-	118
4.2.6. Photosynthetic pigments -----	-	122
4.2.6.1. Chlorophyll a -----	-	122
4.2.6.2. Chlorophyll b -----	-	124
4.2.6.3. Total chlorophyll -----	-	127
4.2.6.4. Carotenoids -----	-	129
4.2.7. Physical characteristics of fruits -----	-	132
4.2.7.1. Fruit length -----	-	132
4.2.7.2. Fruit diameter -----	-	134
4.2.7.3. Fruit shape index -----	-	136
4.2.7.4. Fresh weight of fruit -----	-	138
4.2.7.5. Fruit volume -----	-	140
4.2.7.6. Fruit density -----	-	142
4.2.7.7. Flesh weight per fruit -----	-	144
4.2.7.8. Flesh/fruit percentage -----	-	146
4.2.7.9. Flesh thickness -----	-	146
4.2.7.10. Flesh dry weight -----	-	149
4.2.8. Pit characteristics -----	-	152
4.2.8.1. Pit fresh weight -----	-	152
4.2.8.2. Pit length -----	-	154
4.2.8.3. Pit diameter -----	-	156
4.2.9. Yield -----	-	158
4.2.10. Oil percentage -----	-	161
5. SUMMARY AND CONCLUSION -----	-	164
6. LITERATURE CITED -----	-	179
7. ARABIC SUMMARY -----	-	-

LIST OF TABLES

Table No.	Page No
1. Meteorological data of El-Maghara region -----	- 46
2. Soil physical analysis of El-Maghara region-----	- 47
3. Soil chemical analysis of El-Maghara region -----	- 47
4. Chemical analysis of irrigation water of El-Maghara region -	47
5. Effect of fences type on sand grain size -----	- 67
6. Effect of fences type on sand grain textures -----	- 67
7. Effect of different directions of sand transition on sand grain size ---	- 68
8. Effect of different directions of sand transition on sand grain texture -----	- 68
9. Monthly calculation of Sand drift potential in El- Maghara region -----	- 70
10. Seasonal sand drift potential using wind data -----	- 76
11. Seasonal sand drift potential using sand collectors -----	- 76
12. Rate of sand accumulation around different types of fences -----	- 79
13. Fences Efficiency -----	- 85
14. Effect of fences type, KCl and soil mulching on Inflorescences No./m. -----	- 87
15. Effect of fences type, KCl and soil mulching on flower No./ Inflorescence -----	- 89
16. Effect of fences type, KCl and soil mulching on perfect flower % -----	- 90
17. Effect of fences type, KCl and soil mulching on initial fruit set % -----	- 92
18. Effect of fences type, KCl and soil mulching on final fruit set %-----	- 94
19. Effect of fences type, KCl and soil mulching on leaf area -	- 98
20. Effect of fences type, KCl and soil mulching on specific leaf dry mater -----	- 100
21. Effect of fences type, KCl and soil mulching on shoot elongation -----	- 102
22. Effect of fences type, KCl and soil mulching on relative water content -----	- 107
23. Effect of fences type, KCl and soil mulching on leaf water loss -----	- 109

CONT.

Table No.	Page No.
24. Effect of fences type, KCl and soil mulching on N leaf content -----	- 111
25. Effect of fences type, KCl and soil mulching on P leaf content -----	- 113
26. Effect of fences type, KCl and soil mulching on K leaf content -----	- 114
27. Effect of fences type, KCl and soil mulching on proline content -----	- 117
28. Effect of fences type, KCl and soil mulching on total carbohydrates-----	- 119
29. Effect of fences type, KCl and soil mulching on chlorophyll a content -----	- 123
30. Effect of fences type, KCl and soil mulching on chlorophyll b content -----	- 125
31. Effect of fences type, KCl and soil mulching on total chlorophyll -----	--- 128
32. Effect of fences type, KCl and soil mulching on caroteniods -----	- 130
33. Effect of fences type, KCl and soil mulching on fruit length -----	- 133
34. Effect of fences type, KCl and soil mulching on fruit diameter -----	- 135
35. Effect of fences type, KCl and soil mulching on fruit shape index -----	- 137
36. Effect of fences type, KCl and soil mulching on fruit weight -----	- 139
37. Effect of fences type, KCl and soil mulching on fruit volume -----	- 141
38. Effect of fences type, KCl and soil mulching on fruit density -----	- 143
39. Effect of fences type, KCl and soil mulching on flesh weight -----	- 145

CONT.

Table No.		Page No.
40.	Effect of fences type, KCl and soil mulching on flesh/fruit percentage -----	- 147
41.	Effect of fences type, KCl and soil mulching on flesh thickness -----	- 148
42.	Effect of fences type, KCl and soil mulching on flesh dry mater -----	- 150
43.	Effect of fences type, KCl and soil mulching on pit fresh weight -----	- 153
45.	Effect of fences type, KCl and soil mulching on pit diameter -----	- 157
46.	Effect of fences type, KCl and soil mulching on olive tree yield -----	- 159
47.	Effect of fences type, KCl and soil mulching on oil percentage -----	- 163

LIST OF FIGURES

No. of Figure		Page	No.
1. Sand rose of El-Maghara region -----	-	71	
2. Resultant sand drift in El-Maghara region -----	-	72	
3. Sand drift potential in El-Maghara region -----	-	72	

LIST OF PHOTOS

No. of Photo		Page	No.
1. The unsheltered olive trees in the studied area -----	-	49	
2. Position of the single fence in the studied region -----	-	49	
3. Parallel fences in El-Maghara Research Station -----	-	50	
4. Sand accumulation around fences -----	-	50	