بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

STUDIES ON BOTANICAL COMPOSITION OF SOME PLANT ASSOCIATIONS OF DEVELOPED AREAS IN THE NORTH WESTERN COAST OF EGYPT

By
KARAM MAHMOUD AHMED IBRAHIM
B.Sc., Agric., (Agronomy), Ain Shams University, 1982
M.Sc., Agric., (Agronomy), Ain Shams University, 1995.

A Thesis Submitted in Partial Fulfillment
of The requirements for the degree of
Doctor of Philosophy
in
Agricultural Science
(Agronomy)

Department of Agronomy
Faculty of Agriculture
Ain Shams University

2000

APPROVAL SHEET

STUDIES ON BOTANICAL COMPOSITION OF SOME PLANT ASSOCIATIONS OF DEVELOPED AREAS IN THE NORTH WESTERN COAST OF EGYPT

By

KARAM MAHMOUD AHMED IBRAHIM

B.Sc., Agric., (Agronomy), Ain Shams University, 1982

M.Sc., Agric., (Agronomy), Ain Shams University, 1995.

This thesis for Ph.D. degree has been approved by:

Prof. Dr. H. M. Abd El-Rahim H.M.Abd el Rahim

Prof. of Agronomy, Faculty of Agriculture,
Assuit University.

Prof. Dr . M. Sh. Reiad M.Sh. Reiad

Prof of Agronomy, Faculty of Agriculture,
Ain Shams University.

Prof. Dr. M.A. Ashoub ..... M.A. Ashoub

Prof. of Agronomy, Faculty of Agriculture,
Ain Shams University.

Date of Examination : / /2000

STUDIES ON BOTANICAL COMPOSITION OF SOME PLANT ASSOCIATIONS OF DEVELOPED AREAS IN THE NORTH WESTERN COAST OF EGYPT

By

KARAM MAHMOUD AHMED IBRAHIM

B.Sc., Agric., (Agronomy), Ain Shams University, 1982

M.Sc., Agric., (Agronomy), Ain Shams University, 1995.

UNDER THE SUPERVISION OF :

Prof. Dr. M. Abd El-Rahman Ashoub

Professor of Agronomy, Faculty of Agricultrue

Ain Shams University.

Prof. Dr. Moustafa Sabry El-Hakeem

Professor of Range Management,

Desert Research Center.

ABSTRACT

Karam Mahmoud Ahmed Ibrahim, Studies on botanical composition of some plant associations of developed areas in the North Western Coast of Egypt, Unpublished Doctorate of Philosophy dissertation, Agronomy Department, Faculty of Agriculture, Ain Shams Unviersity (2000).

An ivnestigation was carried out during the period extended from winter season of 1996 to autumn season of 1997 in Sidi-Barrani, West of Mersa Matruh, at the North Western Coast of Egypt, to study the effect of afforestation with *Acacia saligna* shrubs and four different sites (site 1, site 2, near the sea and site 3, site 4 disnear the sea) on the growth characters, fresh and dry productivity and chemical contents of Acacia shrubs as well as plant composition, distribution and measurements of natural vegetation i.e. plant density, coverage, abundance, frequency, fresh and dry yield and chemical composition of native plant species.

The main results obtained were as follows:

1. The growth characters of Acacia shrubs i.e., shrub height, trunk diameter, branch length, crown radius, compact circumference, non- compact circumference, crown cover and crown volume, carbohydrate percentage and yield ash yield, were increased in
site 2, site 4 as a mean average.
2. Site 2 and site 3 had higher values as a mean average for fresh and dry productivity, crude protein percentage and yield, ash percentage, potassium percentage and yield, while site1, site 2 were

superior in fiber and sodium percentage, also, site 1, site 4 in ether extract percentage, fiber and ether extract yield, site1, site 3 in sodium yield.

3. Growth characteristics were increased in spring season, except trunk diameter, compact circumference, followed by winter, summer and autumn seasons respectively.
4. Crude protein, carbohydrate (%) as a mean average were increased in spring season, while fiber, ash, sodium (%), cp, carbohydrate , fiber, ash, sodium and potassium yield exceeded in summer season.
5. Native plant measurements, i.e., plant density, coverage percentage, abundance, fresh and dry productivity were increased under afforestation, but frequency was higher in the area under non afforestation as a mean average.
6. Under afforestation had the highest fiber, ash, ether extract, sodium percentage and ash, ether extract, sodium, potassium yield as a mean but, under non afforestation had the highest in crude protein, carbohydrate, potassium percentage and crude protein, carbohydrate, fiber yield.
7. The highest plant density (m^2), caverage(%), abundance (%) under afforestation were occurred in spring season while highest fresh and dry productivity were appeared under afforestation in winter season.
8. The maximum fiber , ash , sodium (%), ash, sodiun and potassium yield were obtained in summer season under afforestation while Higher total carbohyderate (%), Ether extract(%) and yield surpassed in antumm under afferstation.

9. Total fresh and dry yield for *Acacia saligna* shrubs and natural plant species were higher at site1 and site 3 than that in site 2 and site 4.

Key words: *Acacia saligna,* afforestation, shrubs, climatic factors, edaphic factors, natural vegetation, native plants, measurements, botanical composition, plant density, coverage, abundance, frequency, fresh yield, dry yield, chemical contents, distribution.

ACKNOWLEDGEMENT

I wish to express my greatest appreciation and deepest gratitude to my advisors, Prof. Dr. M. Abd El-Rahman Ashoub, Prof. of Agronomy, Fac. Of Agric., Ain Shams Univ. and Prof. Dr. M.Sabry. El-Hakeem, Prof. of Range Management, Desert Research Center, for suggesting the problem of study, invaluable scientific supervision, constructive criticism and encouragement during the stage of writing this manuscript.

Thanks are extended to Prof. Dr. M. Sh. Reiad, Prof. of Agronomy, Fac. Of Agric., Ain Shams Univ., for his sharing in the work plan.

Extended thanks to Desert Research Center Staff and colleagues of Range management Unit, for their extended encouragement and valuable help.