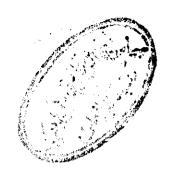


# CONTENTS

# ACKNOWLEDGEMENT PREFACE



### INTRODUCTION

What are Actinomycetes	1
Isolation From Natural Habitats	1
TAXONOMY OF ACTINOMYCETES	3
CLASSICAL CRITERIA OF DIFFERENTIATION OF GENERA	4
AND SPECIES OF AACTINOMYCETES:	
Morphological Criteria	4
Morphological Features to be Recorded	5
Morphology of Spores	5
Cultural Properties	5
Colour of Aerial Mycelim	5
Colour of Subtrate Mycelium and Soluble Pigments	6
Production of Melanin Pigments	7
Physiological Test	8
Utilization of Different Compounds as Sole	9
Source of Carbon	
Utilization of Different Compounds as Sole	9
Nitrogen Source	
Antibiotic Activity	10
Senstivity to Antibiotics	11
RECENT TAXONOMY OF AACTINOMYCETES	11

CHEMOTAXONOMY	11
Peptidoglycans of Actinomycetes	12
DNA Base Composition	13
Lipids of Actinomycetes	14
Numerical Taxonomy	15
RECENT SYSTEMS OF CLASSIFICATION OF ACTINOMYCETES	17
Nocardioform Actinomycetes	17
Actinoplanetes	17
Actinomycetes with Multilocular Sporangia	17
Streptomycetes and Related Genera	17
Maduromycetes	17
Thermomonospora and Related Genera	18
Thermoactinomycetes	18
Other Genera	18
GENERIC IDENTIFICATION OF ACTINOMYCETES	18
STREPTOMYCETE OF EGYPTIAN SOIL SERIES	19
RED STREPTOMYCES	19
MATERIALS AND METHODS	
MEDIA	21
BIOLOGICAL CHARACTERISTICS	26
Morphological Characteristics	26
Cultural Characteristics and Pigmentation	26
PHYSIOLOGICAL CHARACTERISTICS	27
ENZYMATIC ACTIVITIES	28
ANTIMICROBIAL CHARACTERISTICS	31

SENSITIVITY TO SOME ANTIBIOTICS	31
CHEMOTAXONOMICAL CHARACTERISTICS CELL WALL CHEMISTRY	32
DETERMINATION OF AMINO ACIDS	33
FATTY ACIDS DETERMINATION	34
DETECTION OF SUGARS OF CELL WALL	35
EXPERIMENTAL RESULTS	
GENERIC IDENTIFICATION OF EXPERIMENTED ACTINOMYCETE ISOLATES	36
DIFFERENTIATION OF THE EXPERIMENTED STREPTOMYCETE	37
ISOLATES INTO SECTIONS	,
•	
CINNAMON SECTION	
DIFFERENTIATION OF CINNAMON STREPTOMYCES ISOLATES	38
INTO GROUPS	
Group One	
Morphological Characteristics	40
Cultural Characteristics	44
Growth Characteristics	45
Antimicrobial Potentialities	<b>4</b> 9
Sensitivity to Different antibiotics	50
Some Enzymatic Activities	51
Degradative Potentialities of Some Complex	52
compounds	

Taxonomic Identification of Isolates of	53
Group One	
Group Two	
Morphological Characteristics	54
Cultural Characteristics	58
Growth Characteristics	59
Antimicrobial Potentialities	63
Sensitivity to Different antibiotics	64
Some Enzymatic Activities	65
Degradative Potentialities of Some Complex	66
compounds	
Taxonomic Identification of Isolates of	67
Group Two	
Group Three	
Morphological Characteristics	68
Cultural Characteristics	72
Growth Characteristics	73
Antimicrobial Potentialities	77
Sensitivity to Different antibiotics	78
Some Enzymatic Activities	79
Degradative Potentialities of Some Complex	80
compounds	
Taxonomic Identification of Isolates of	81
Group Three	



# LAVENDER SECTION

Group Four	
Morphological Characteristics	82
Cultural Characteristics	85
Growth Characteristics	86
Antimicrobial Potentialities	90
Sensitivity to Different antibiotics	91
Some Enzymatic Activities	92
Degradative Potentialities of Some Complex	93
compounds	
Taxonomic Identification of Isolates of	94
Group Four	
Group Five	
Morphological Characteristics	95
Cultural Characteristics	99
Growth Characteristics	100
Antimicrobial Potentialities	104
Sensitivity to Different antibiotics	105
Some Enzymatic Activities	106
Degradative Potentialities of Some Complex	107
compounds	
Taxonomic Identification of Isolates of	108
Group Five	

### Group six

Morphological Characteristics	109
Cultural Characteristics	112
Growth Characteristics	113
Antimicrobial Potentialities	117
Sensitivity to Different antibiotics	118
Some Enzymatic Activities	119
Degradative Potentialities of Some Complex	120
compounds	
Taxonomic Identification of Isolates of	121
Group Six	

#### ROSE SECTION

# Group Seven

Morphological Characteristics	122
Cultural Characteristics	125
Growth Characteristics	126
Antimicrobial Potentialities	130
Sensitivity to Different antibiotics	131
Some Enzymatic Activities	132
Degradative Potentialities of Some Complex	133
compounds	
Taxonomic Identification of Isolates of	134
Group Seven	

Group Eight	
Morphological Characteristics	135
Cultural Characteristics	138
Growth Characteristics	139
Antimicrobial Potentialities	143
Sensitivity to Different antibiotics	144
Some Enzymatic Activities	145
Degradative Potentialities of Some Complex	146
compounds	
Taxonomic Identification of Isolates of	147
Group Eight	
Group Nine	
Morphological Characteristics	148
Cultural Characteristics	151
Growth Characteristics	152
Antimicrobial Potentialities	156
Sensitivity to Different antibiotics	157
Some Enzymatic Activities	158
Degradative Potentialities of Some Complex	159
compounds	
Taxonomic Identification of Isolates of	160
Group Nine	
Group Ten	
Morphological Characteristics	16:
Cultural Characteristics	16

a Oh	165
Growth Characteristics	169
Antimicrobial Potentialities	
Sensitivity to Different antibiotics	170
Some Enzymatic Activities	171
Degradative Potentialities of Some Complex	172
compounds	
Taxonomic Identification of Isolates of	173
Group Ten	
Group Eleven	
Morphological Characteristics	174
· Cultural Characteristics	177
Growth Characteristics	178
Antimicrobial Potentialities	182
Sensitivity to Different antibiotics	183
Some Enzymatic Activities	184
Degradative Potentialities of Some Complex	185
compounds	
Taxonomic Identification of Isolates of	186
Group Eleven	
Fatty Acid Composition of the Cell Wall of the	187
Studied Streptomycetes and its Significance as	
a Taxonomic Criterion	
DISCUSSION	192
SUMMARY	200
REFERENCES	209
ARABIC SUMMARY	