

CONTENTS

CONTENTS

Title	Page No.
I <u>INTRODUCTION</u>	1
1. Soil Salinity.	4
2. Salinity and plant growth.	8
3. <u>Metabolism</u>	
a) Salinity and Nitrogen metabolism.	10
b) Salinity and Carbohydrate metabolism.	9
c) Salinity and Mineral nutrition.	12
II <u>REVIEW OF LITERATURE</u>	
1. Introduction.	16
2. History.	16
3. Chemical composition.	17
4. <u>Morphological characters</u>	19
i) Vegetative growth parameters.	19
ii) Rhizome Characters.	22
5. Nutrition.	25
6. Curcumin content.	25
III <u>MATERIAL AND METHODS</u>	
1. Material.	28
2. Methods.	29
A. Growth	29
B. Photosynthetic pigments.	29
C. Titratable acid number (TAN).	30
D. Carbohydrates.	30
E. Polyphenols.	32
F. Proline.	33



G. Nitrogen metabolism.	34
H. Mineral nutrition.	35
i) Na^+	
ii) K^+	
iii) Ca^{2+}	
iv) Mg^{2+}	
v) Cl^{-1}	
vi) P^{5+}	
vii) Micronutrients	35
1. Fe^{3+}	
2. Cu^{2+}	
3. Zn^{2+}	
4. Mn^{2+}	
I. Curcumin content	38
IV RESULTS AND DISCUSSION	
1. Growth.	40
2. Photosynthetic pigments.	44
A. Chlorophyll.	
3. Titratable acid number (TAN).	54
4. Polyphenols.	58
5. Nitrogen metabolism.	68
a. Total nitrogen.	
6. Carbohydrates	74
7. Proline	63

7. Mineral nutrition	83
A. Introduction.	
B. Salinity and mineral nutrition	86
i. Na^+ and Cl^-	86
ii. K^+	97
iii. Ca^{2+}	101
iv. P^{5+}	105
v. Mg^{2+}	109
vi. <u>Micronutrients</u>	
1. Fe^{3+}	113
2. Mn^{2+}	117
3. Cu^{2+}	120
4. Zn^{2+}	124
B. Curcumin content.	128
V SUMMARY AND CONCLUSION	132
VI BIBLIOGRAPHY.	140