

CONTENTS		Page
1. INTRODUCTION		1
2. REVIEW OF LITERATURE		3
2.1. Origin and nature of salt affected soils		3
2.2. Classification of salt affected soils		4
2.3. Effect of salinity and/or sodicity on some soil properties		6
2.3.1. Soil physical properties		6
2.3.2. Soil chemical properties		7
2.3.3. Soil fertility		8
2.4. Effect of salinity and/or sodicity on growth and yield of plants		10
2.5. Reclamation of salt affected soil by soil amendments		13
2.6. Effect of soil amendments on some soil physical properties of saline alkaline soils		16
2.6.1. Soil bulk density and total porosity		16
2.6.2. Pore size distribution		18
2.6.3. Hydraulic conductivity (HC)		20
2.6.4. Soil infiltration rate (IR)		22
2.6.5. Soil aggregates		23
2.7. Effect of soil amendments on some chemical properties of saline-alkaline soils		24
2.8. Effect of soil amendments on macronutrients availability of saline-alkaline soils		28
2.8.1. Nitrogen		28
2.8.2. Phosphorus		29
2.8.3. Potassium		30
2.9. Effect of soil amendments on growth and yield of plants grown on saline-alkaline soils		30
3. MATERIALS AND METHODS		33
3.1. Methods of analysis:		40
3.1.1. Soil physical analysis:		40
3.1.2. Soil chemical analysis:-		41
4. RESULTS AND DISCUSSIONS		43
4.1. Reclamation of saline sodic soil with different soil amendments		43
4.1.1. Chemical properties		43

CONTENTS	Page
4.1.2. Available macronutrients	62
4.1.2.1. Nitrogen	62
4.1.2.2. Phosphorus	67
4.1.2.3. Potassium	70
4.1.3. Physical properties	74
4.1.3.1. Hydraulic conductivity (HC)	74
4.1.3.2. Bulk density (Bd)	78
4.1.3.3. Total porosity (TP)	83
4.1.3.4. Field capacity (FC) and wilting point (WP)	87
4.1.3.5. Available water (AW)	96
4.1.3.6. Soil aggregates	97
4.1.4. Yield and yield components	106
5. SUMMARY	119
6. REFERENCES	122
ARABIC SUMMARY	