PHYSIOLOGICAL STUDIES ON ADAPTATION OF ZEA MAIZE L.UNDER SALINE CONDITIONS AT SAHL ELTINA NORTH SINAI

By

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B.Sc. (Agronomy), Fac. Agric., Tanta Univ. (2002)
M. Sc. (Agronomy), Fac. Agric., Cairo Univ. (2009)

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ABSTRACT

Hisham Mohamed Ali Ahmed El-Sharkawy: Physiological Studies on Adaptation of Zea Maize L. under Saline Conditions at Sahl El Tina North Sinai. Unpublished Ph.D. thesis, Department of Agricultural Botany, Faculty of Agric, Ain Shams University,2017.

This study was conducted to evaluate the effect of two planting dates and four foliar application treatments as well as five seed hardening methods on acclimation and improving growth, yield and its components, chemical composition as well as the physiological traits of corn plant grown under saline conditions.

Two successive experiments were conducted at Sahl El Tina, North Sinai in 2013 and 2014 summer seasons.

The first of April as a planting date treatment was better than 1st May for all growth traits, yield and its components, Chemical composition as well as the physiological traits of corn plant under saline soil during 2013 and 2014 summer seasons. TDZ at 2ppb as a foliar application produced the highest significant mean values for all growth traits, yield and its components, chemical composition as well as the physiological traits of corn in saline soil during both seasons. Meanwhile, KCl 2% was the second order for increasing growth traits, yield and its components of corn plant during both seasons. Concerning seed hardening treatments tack the same trend for increasing growth traits, yield and its components, chemical composition as well as the physiological parameters of Corn plant, with applied TDZ at 2 ppb and KCl 2% as a seed soaking treatments. Generally, seed hardening of grains by TDZ at 2ppb recorded the highest significant mean values for all growth traits and improved yield in saline soils. The first of April treatment combined with TDZ 2ppb as foliar application and seed soaking treatment were the best treatment in general for all growth traits, yield and its components, chemical composition as well as the physiological traits

under saline conditions. However, boron treatment gave lower values than TDZ at 2ppb and KCl at 2% of all treatments of foliar applications and seed hardening.

Key words: *Zea mays*, adaptation, saline condition, TDZ, boron, KCl.

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CONTENTS

LIST OF TABLES

LIST OF FIGURES