

Improvement of squash plants growth growing under cold stress conditions by using calcium and phosphorus forms

Abeer. M. Abd AlRaof, Faten H. M. Ismaeil, Amira .A.E.Elnabarway and Heba. S.A. Eldesouky
Agric, Botany Department. Faculty. of Agric. Moshtohor-Benha University
E-Mail: abeer.mahany@fagr.bu.edu.eg

Abstract

Two pots experiments were carried out at Experimental Station of Agricultural Botany Department, Faculty of Agriculture, Moshtohor during 2020 and 2021 seasons on squash plant cv. Eskandarani. Seeds of squash were soaked and foliar spray with calcium at 250 & 500mg/l, nano calcium at 50 & 100mg/l, phosphorus at 250 & 500 mg/l, nano phosphorus at 50&100 mg/l and distilled water (control) to evaluate the effect of treatments on vegetative growth, photosynthetic pigments, anatomical characteristics (out-doors pot experiment) of squash plants (*Cucurbita pepo L.*) grown under natural cold stress conditions. Foliar application of squash plants with the previous treatments gave the highest values of vegetative growth of roots (size, length, diameter, fresh and dry weights), stems (length, diameter, fresh and dry weights) and leaves (number, total leaves area, fresh and dry weights), photosynthetic pigments compared with the control especially, nano phosphorus at 50 mg/l followed by nano calcium at 100 mg/l. For the anatomical characteristics, results revealed that different anatomical characteristics of squash roots and stems were improved positively. Also, the most traits of squash anatomical features were increased with different applied treatments. Generally using nanoparticles can be applied to increase squash growth and productivity under cold stress conditions.

Key words: Squash plants , cold stress, calcium, phosphorus, vegetative growth, photosynthetic pigments and anatomical characteristics.