

AGRIBALKAN 2022

IV. BALKAN AGRICULTURAL CONGRESS



**31 AUGUST – 02 SEPTEMBER 2022,
EDİRNE, TURKEY**

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In Trakya University Balkan Congress Center, Edirne, Turkey

Organized by Trakya University

with

Trakya Universities' Union, Balkan Universities' Union, Namik Kemal University, Onsekizmart University - Turkey, Uludag University, Turkey, Agriculture University of Plovdiv, Trakia University-Stara Zagora - Bulgaria, Democritus University of Thrace – Greece and with contribution of other Balkan Institutions...



Dear Colleagues,

You are welcome to our congress which will be organized by Trakya University supporting with Trakya Universities Union, Balkan Universities Association and together with other Balkan Universities and Institutions.

The aim of our international congress is to present the newest research results and research goals, analyze current conditions and perspectives in agriculture.

Conference activities;

Plenary sessions with oral and poster presentations are on 31 August – 02 September 2022.

You are welcome to our congress and Edirne,
TURKEY,

Yours sincerely,

Prof. Dr. Erhan TABAKOĞLU

Rector of Trakya University
Honorary Chair of Congress

Prof Dr Yalcin KAYA

Head of Organizing Committee

ASSESSMENT OF SALT AND WATER STRESS TOLERANCE OF TUNISIAN SQUASH (*CUCURBITA MAXIMA* DUCHESNE) GERMPLASM DURING THE GERMINATION AND EARLY SEEDLING GROWTH

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ABSTRACT

High salinity in soil or irrigation water and drought are considered as the most common abiotic stresses affecting seed germination and seedling growth especially in arid and semi-arid regions. Seed germination is the most sensitive stage during the life-cycle of many species. Local squash landraces are the important vegetable crops in Tunisia cultivated in open field and under greenhouse. The present study was carried out to assess the salt and water tolerance of four local squash (*Cucurbita maxima* Duchesne) landraces (Batati, Galaoui, Karkoubi and Bejaoui). Different salt (NaCl) and D-Mannitol concentrations of 0, 100, 200 and 300 mM were selected in order to evaluate the response of the study germplasm based on germination potential and agro-morphological traits of seedlings. A varied effect of the salt and water stress level was observed among the studied landraces. Results showed that all landraces were drastically affected at high stress NaCl and D-Mannitol level with a significant variation in their stress response, indicating the existence of considerable genetic variability. Under salt stress, landraces NGB746 (Batai) and 747 (Galaoui) were the best performing cultivars across stress levels, while under drought stress NGB751 (Bejaoui) proved as the most capable to germinate under the high water deficit. The seedling traits (shoot and root length, shoot and root fresh weight...) were more sensitive under drought stress than NaCl stress, nevertheless, root elongation was more affected under both stress than shoot growth. These findings can be extrapolated into efforts to develop more salt and water tolerant squash landraces and exhaust the possibilities of using saline water or soils under changing climate conditions.

Keywords: Cucurbita sp; landraces; salinity and water stress; seed germination; seedling growth

