



KASTAMONU UNIVERSITY
Faculty of Engineering and Architecture



KASTAMONU 2018
TÜRK DÜNYASI KÜLTÜR BAŞKENTİ



International

Ecology

2018

Symposium



SYMPOSIUM PROGRAM

19-23 JUNE

KASTAMONU/TURKEY

14:15-14:30	A Sustainable Campus Strategy-Ege University	<u>S. Tuğçe Dağlıoğlu</u> , Nuri Azbar
14:30-14:45	COFFEE BREAK	
SESSION A.6	Ecological Growth and Development	
	Session Chair: Prof. Dr. İbrahim ATALAY	
14:45-15:00	A Research on the Vegetation Structures of the Mountain Pastures in District Adana	<u>Selahattin ÇINAR</u> , Rüştü HATİPOĞLU, Mustafa AVCI, İlker İNAL, Celal YÜCEL
15:00-15:15	The Effect of Different NaCl Doses on Germination and Plant Growth of Buckwheat (<i>Fagopyrum esculentum</i> Moench)	<u>Sema Leblebici</u> , Erdem Gülümser, Zeki ACAR
15:30-15:45	Physiological Alterations of Strawberry Plant Under PhotoSelective Nets	<u>Servet ARAS</u> and Ahmet EŞİTKEN
15:45-16:00	Estimation of Growth of Pedunculate Oak (<i>Quercus robur</i> L.) Individuals by Using Ecological Based Models	Tuğrul VAROL, Halil Barış ÖZEL, <u>Sezgin AYAN</u> , Nebi BİLİR and Uğur ÇAKMAKLI
16:15-16:30	COFFEE BREAK	
SESSION A.7	Ecological Growth and Development	
	Session Chair: Prof. Dr. Sezgin AYAN	
16:30-16:45	Effects of Some Stand Parameters and Physiographic Factors on Above-Ground Biomass of Calabrian Pine Stands	Aydın Kahrıman, Turan Sönmez, Abdurrahman Şahin, <u>Mehmet Yavuz</u>
16:45-17:00	Garlic (<i>Allium sativa</i>) Cultivators of Applications in Ecological Context	<u>Nevin AKARSU</u> , Sefa PEKOL
17:15-17:30	The Ecology of Forest Vegetation in the Western Part of Black Sea Region	İbrahim ATALAY
17:30-17:45	Benthic Habitat Mapping With Multi Beam Echo Sounder System	Mustafa Ümit Gümüşay, <u>Tolga Bakırman</u> , Nedim Onur Aykut and İnci Tüney Kızılkaya

Thursday, 21 June 2018 (HALL H)

SESSION A.8	Ecological Growth and Development / Ecogeography / Environmental Biology	
	Session Chair: Prof. Dr. Ömer KÜÇÜK	
9:00-9:15	Eco-physiological Responses of Drought Tolerant Woody Species to Desert Conditions in Karapınar/Konya	<u>Bülent Akgün</u> , Emre Yazar and Ferit Kocaçınar
9:15-9:30	Comparison of Fatty Acids and Amino Acids Profiles of Whiting (<i>Merlangius merlangus euxinus</i> Nordman 1840) Meat and Roe During Fishing Season	<u>Demet Kocatepe</u> , Can Okan ALTAN, Hülya TURAN
9:30-9:45	Post-Fire Regeneration Strategies of Mediterranean Region Pines	<u>Nursema Aktepe</u> , Ömer Küçük, Özkan Evcin
9:45-10:00	We Know About the Level of Microplastic Pollution, the Methods of Treatment and Impacts	<u>Nejdet DEĞERMENÇİ</u> and Gökçe Didar DEĞERMENÇİ
10:00-10:15	COFFEE BREAK	
SESSION A.9	Environmental Biology	
	Session Chair: Assoc. Prof. Dr. Tolga ULUSOY	
10:15-10:30	Suitable Site Conditions for the Distribution of Black Pine in Gölhisar District, Turkey	<u>Özdemir ŞENTÜRK</u> , Serkan GÜLSOY and M. Güvenç NEGİZ
10:30-10:45	The Effects of Vermicompost Tea on the Root Growth and Mitosis of Onion (<i>Allium cepa</i>)	<u>Salih Dikilitaş</u> , Sibel Sütüoğlu and Özlem Aksoy
10:45-11:00	Scots Pine Pollen in the Areas of the Technogenic Pollution of Ural	<u>Svetlana Makhniova</u> , Pavel Mohnachev and Sezgin Ayan
11:15-11:30	Physiological Determination of Reactions Formed by Different Boric Acid Applications in Some Safflower (<i>Carthamus tinctorius</i> L.) Types	<u>Şifanur Sülüş</u> and <u>Sema Leblebici</u>

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19-23 June 2018, Kastamonu University, Kastamonu - TURKEY

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ORAL PRESENTATION

Determination of DNA Damage Caused by Different Salt Concentrations in Safflower Types with ISSR-PCR

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Introduction: Salinity is a major abiotic stress factor affecting plant growth. Safflower is one of the plants with high resistance to stress factors. Safflower is one of the plants with high resistance to stress factors. This taxon is cultivated in Eskişehir, Burdur and Isparta. Parts of safflower are used the treatment of various diseases, and the flowers of the crop are used in the food, cosmetics, paint and pharmaceutical industries. Especially high tolerance against cold and hot temperature makes safflower an alternative plant for dry agricultural areas. In this study, DNA damage was detected in three different types of Safflower grown in different concentrations of KCl by ISSR-PCR

Material and Methods: In this study, seeds of three varieties of safflower, Balcı, Dinçer and Remzi Bey were used as experimental materials. The seeds of each varieties were germinated in seed beds which contains 100 seeds in vials. Distilled water used as control group and 50, 100, 150 mM KCl solutions were applied. The condition was 16 hours light/8 hours dark photoperiod and 25±1°C in growth chamber. DNA isolation was carried out by the method developed by Dellaporta et al. (1983). Also, the obtained DNAs were screened by ISSR-PCR technique using 6 different universal primers. According to the results of the screening, the DNA damage that occurred between the concentrations and cultivars was compared.

Results: According to the ISSR-PCR results obtained in the study, it was determined that changes occurred in each type of Safflower. It has been determined that the salt (KCl) at different concentrations causes different band profiles on the varieties. It has been determined that the applied 100 and 150 mM KCl solution is highly effective in Balcı varieties. Furthermore, When the aspir types were compared, it was determined that there are differences in the ISSR profile depending on the concentration applied.

Discussion: Salt stress causes changes in osmotic stress and ion balance in plants. In addition, it damages DNA, protein, chlorophyll and membrane function, thus exhibiting secondary effects with photosynthesis inhibition and metabolic toxicity. This study has shown that high concentrations of KCl salt cause damage to the DNA of Safflower varieties. While Remzibey variety is resistant to high salt concentration, Balcı is sensitive. Remzibey variety is parallel to the literature. In addition, as salt concentration increased, there was a difference in ISSR-PCR profiles. These profile differences were also observed with different primers.

Keywords: *Carthamus tinctorius*, salt, ISSR-PCR