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Genetic Variation and Agro-morphological Criteria of Ten Egyptian Barley Under Salt Stress

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Abstract : The present investigation was conducted to studied the effect of different concentrations of NaCl (control, 9000, 12000 and 15000 PPm) on agro-morphological traits (branch number/plant, shoot length, root length, node number/plant, spike length, spike weight, grain number/spike, grain weight/spike and grain yield/plant) and protein banding patterns electrophoresis (SDS-PAGE) at three sampling time points (sampling after 24 hour, 1st week and 2nd week salt treatments). This work was carried out on seven Egyptian cultivars (Giza 123, Giza 126, Giza 127, Giza 128, Giza 129, Giza 130 and Giza 2000) and three landraces (El-Kheroba and El-Sheikh Zuwaid) from Sinai, El-Aresh and (Wadi Sedr) from Sinai, Ras Sedr. The results shown that, the more tolerance varieties to salt stress were Giza 2000 cultivar and Wadi Sedr landrace while the sensitive variety was Giza 129 depending on agro-morphological traits. The electrophoretic pattern of soluble proteins shown that a maximum polymorphism was observed after 2nd week from salt treatments and show the lowest variation, while after 24 hour and 1st week from salt treatments show a maximum variation. The protein of Mw 28 KDa and Mw 49KDa disappeared in sensitive varieties (Giza 129) and appeared in tolerant varieties after 24 hour and 1st week from salt treatments respectively.

Key words: Barley, Salt Stress, Agro-morphological Criteria, SDS-PAGE Electrophoresis.

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