

عنوان مقاله:

Evaluation of varieties effect on plant osmolytes in 5 quinoa (*Chenopodium quinoa*) varieties under environmental stress condition

محل انتشار:

بیستمین کنگره ملی و هشتمین کنگره بین‌المللی زیست‌شناسی ایران (سال: 1397)

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خلاصه مقاله:

Drought is one of the major environmental factors limiting growth of crop plants worldwide. Many plant species such as quinoa naturally accumulate proline as major osmolyte when subjected to different abiotic stresses. Proline has an effective role to save water in leaves. In the present study, varieties effect was investigated to analyze plant osmolytes in five quinoa cultivars (named Q29, Q22, Q18, Red Carina and Titicaca) under environmental stress condition. Proline content determination in leaves proceeded according to Bates et al (1973) and total soluble protein determined by Bradford method (1979). Experiments were performed in triplicates and the data were analyzed with ANOVA using SPSS 16 software. Duncan s multiple range test was performed to test the significance of difference between the treatments. The analysis results showed the highest proline content in Titicaca ($23.28 \pm 0.74 \mu\text{g/gFW}$) and the lowest in Q29 ($11.83 \pm 1.55 \mu\text{g/gFW}$). Considering the protective role of proline in cell membrane damage during drought stress, the most tolerant variety was Titicaca. Q18, Q29 and Q22 had significantly higher levels of total soluble protein and statistically were the same. The highest content of soluble protein was determined in Q18 ($2.62 \pm 0.31 \text{ mg/gFW}$) and the lowest was determined in Red Carina ($0.43 \pm 0.09 \text{ mg/gFW}$). This results were significantly different

کلمات کلیدی:

Varieties, Quinoa, Proline and Soluble protein

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