

[P3] Abiotic Stress for Crop Production

2021年9月9日(木) 12:15 ~ 14:00 Room 3 (Poster) (Abiotic Stress for Crop Production)

13:15 ~ 14:00

[P3-16] Absorption and Physiological Treatment Mechanism of Cesium under High NaCl Conditions in Quinoa (*Chenopodium quinoa* Willd.)

*Nominated for Presentation Awards

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Quinoa (*Chenopodium quinoa*) is known a high salt-tolerant plant, and high cesium (Cs) absorption plant, too. One of reason about high salt-tolerant in quinoa was the existence of bladder cells on the leaf surface, and the excess salts were accumulated in bladder cells. Since cesium is a harmful element for plant growth, the absorbed cesium should be excreted from plant, accumulated in the vacuole or be detoxified. Thus, the change of Cs-absorbing ability of quinoa by NaCl application, and the physiological treatment mechanism of absorbed Cs in the plant were clarified in this study.

The growth (particularly, shoot fresh weight, and leaf area) of quinoa were promoted by the application of NaCl in the soil. In addition, the Cs absorption was promoted by the application of NaCl, and the almost of absorbed Cs were accumulated in the leaves. However, the number of bladder cells on the leaf surface did not increased by application of NaCl. In addition, the number of bladder cells decreased with decreasing leaf position. The Cs concentration of leaf was similar to that of removed bladder cells leaf, and there was no significant difference on Cs concentration between the bladder cells and the leaves. These results suggested that the most of Cs absorbed by quinoa plants were accumulated in leaves and were not specifically translocated from the leaves to bladder cells. In the future, it is necessary to clarify how Cs accumulated in leaves is rendered harmless in cells.