

عنوان مقاله:

Structural changes of the halophyte Suaeda maritima as a result of contamination with industrial wastewater

محل انتشار:

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

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نویسندگان:

Narjes Sadat Mohamadi Jahromi - Department of plant biology, Faculty of biology, Kharazmi University

Ahmad Majd - Department of plant biology, Faculty of biology, Kharazmi University

Parissa Jonoubi - Department of plant biology, Faculty of biology, Kharazmi University

Mansoorreh Dehghani - Department of Environmental Health, Faculty of Health, Shiraz University of Medical Sciences

خلاصه مقاله:

Unfortunately, in line with the industrialization of the modern world, living organisms are highly exposed to pollutants that may be hazardous to them and cause irreparable complications. In the present research we study the effects of industrial raw sewage which contained some heavy metals such as Cd (0.06ppm), Cu (0.16ppm), Zn (0.20ppm), Pb (0.02ppm) and Ni (0.02ppm), on the halophyte plant, Suaeda maritima (L.) Dumort. To achieve this purpose, after dividing the plants into the control and treatment groups, irrigated them with tap water and raw sewage every other day for three months, dogged out and separated into shoot and root parts. They were fixed in FAA, and after a month, Preparation process in the method of embedding in paraffin were done according to conventional cell and histology methods. After serial sectioning with rotatory microtome, the sections were died by H&E and methylene blue-Carmen alum staining. Observation and photography were done by light microscope. The results confirm the resistance of the plant under high stress conditions. Despite of the viability and plant growth, treatment plants had less growth and pale color. The epidermal cells of the stem in treatment samples were smaller than the control. The cortex parenchyma cells in both stem and root were deformed, became larger and less in number. The thickness of the cuticle on the leaf was reduced in the treatment. While the xylems were arranged regularly and uniformly in size in the control root, they became irregular and non-uniform in size so that very big and very small xylem elements were outspread inside the stele. As a result, we can definitely state that the pollution of the industrial wastewater can make changes in the structure of all vegetative organs of the plant.

کلمات کلیدی:

Suaeda maritima, Anatomy, Industrial Raw Sewage, Plant

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