Phytoremediation potential of *Arundo donax* in arsenic-contaminated synthetic wastewater

ARTICLE INFO

Article history:
Received 30 November 2009
Received in revised form 26 February 2010
Accepted 3 March 2010
Available online xxxx

Keywords:
Arundo donax
Arsenic pollution
Bioaccumulation
Oxidative stress
Phytoextraction

ABSTRACT

The present study reports the potential of *Arundo donax* for phytoextraction of arsenic from synthetic wastewater. *A. donax* plants were grown under greenhouse conditions in pots containing a nutrient solution amended with increasing doses of As (0, 50, 100, 300, 600 and 1000 $\mu g\ L^{-1}$) for 21 days in a completely randomized design. Shoot and roots dry matter production, growth parameters, arsenic and nutrient tissue concentrations were measured at the end of the experiment. Increasing As concentration in nutrient solution caused an increase in shoot and root biomass without toxicity symptoms in *A. donax* growing under a range of As concentration from 50 to 600 $\mu g\ L^{-1}$. Elevated oxidative stress was observed at As supplied level of 1000 $\mu g\ L^{-1}$. The As doses up to 600 $\mu g\ L^{-1}$ did not affect the growth of *A. donax*. It is suggested that *A. donax* plants may be employed to treat contaminated waters containing arsenic concentrations up to 600 $\mu g\ L^{-1}$.