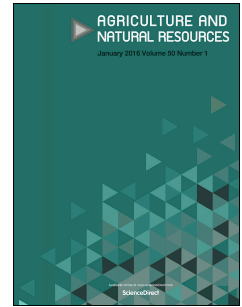


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Title: Phytotoxic effects of biochar-produced from argan shells-on Salad and Barley germination

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Abstract

Biochar produced from argan shells can be contaminated by toxic substances accumulated during pyrolysis process. To determine the potential impact of toxic substances and salt stress, this study focused on the effect argan shells biochar has on germination of salad (0%, 0,5%, 1%, 2%, 4% and 8% biochar dry weight in the mixture sand-biochar) and barley seeds (0%, 1%, 2,5%, 5% and 10% biochar dry weight in the mixture peat-biochar). Concerning the salt stress effect of biochar on germination of salad, no negative effect of argan shells biochar was observed neither on germination rate nor on fresh weight of seedlings. Additionally, biochar application increases the germination rate and the fresh weight of biomass in all of the considered treatments. For barley germination test, no significant difference was observed when comparing the germination rate, fresh /dry weight of barley seedlings, water content and water use efficiency of different mixtures (peat-biochar) with those of control. Thus, on both salad and barley germination test, no negative effect of biochar produced from argan shells has been revealed which provide a preliminary indication that it could be safely used for agriculture.

Keywords: ARGAN SHELLS; BIOCHAR; BARLEY GERMINATION; PHYTOTOXIC TESTS; SALAD GERMINATION

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