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ASSESSMENT OF SOIL SEED BANK CHARACTERISTICS IN A MOUNTAIN GRASSLAND OF IRAN

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Abstract

Soil seed bank is an important reservoir for restoration of degraded rangeland ecosystems. The study was conducted to assess the ability of soil seed bank to restore the aboveground vegetation in a mountain grassland, north-west of Iran. We studied characteristics of the soil seed bank and similarity between seed bank and ground flora at two soil depths of 0-5 and 5-10 cm. In order to predict persistent seeds, the relationship between seed weight and variance of seed dimensions were calculated. The results showed that Poaceae in ground flora and soil seed bank was the dominant family. Cryptophytes and hemicryptophytes had higher abundance in both depths. The seed bank composition did not differ significantly ($p > 0.5$) between the two burial depths, however, the total seed bank density was significantly ($p < 0.01$) higher in the 0-5cm depth (134 seedlings) relative to 5-10 cm (81 seedlings). Species composition of the seed bank and aboveground flora was similar (Sorensen's similarity index = 76%). The relationship between seed mass and variance of seed dimension showed that seed size and shape were not related to persistence of the soil seed bank of the selected species. Our results suggest that the soil seed bank can play an important role in the rehabilitation of aboveground vegetation in the mountain grasslands of Iran, if they are threatened.

Keywords: mountain grassland, restore, seed bank, seed density

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