

عنوان مقاله:

Effects of Seed Priming on Germination Characteristics of *Achillea millefolium* Seeds under Different Ageing Treatment

محل انتشار:

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تعداد صفحات اصل مقاله: 11

نویسندگان:

Leila Rasoolzadeh - *Natural Resources Gene Bank, Research Institute of Forests and Rangelands, Agricultural Research, Education and Extension Organization, Tehran, Iran*

Parvin Salehi Shanjani - *Natural Resources Gene Bank, Research Institute of Forests and Rangelands, Agricultural Research, Education and Extension Organization, Tehran, Iran*

Ali Ashraf Jafari - *Rangeland Research Division, Research Institute of Forests and Rangelands, Agricultural Research, Education and Extension Organization, Tehran, Iran*

خلاصه مقاله:

The genus *Achillea* L. (Compositae) widely use as medicinal plant possessing several pharmacological effects due to presence of active compounds. In order to study of seed priming effects on seedling growth of yarrow, a factorial experiment, based on randomized complete design with three replications was conducted under greenhouse conditions in Research Institute of Forests and Rangeland (RIFR) for one year. Experimental factors were a) three *Achillea millefolium* L. accessions originated from Kordestan (۱۴۳۰۳), Semnan (۲۱۶۰۲) and Gilan (۲۷۰۲۸), provinces, b) five conservation methods including: medium-term storage (Active Collection at ۴ °C, ۱۰ or ۱۵ years), long-term storage (Base Collection at -۱۸ °C, ۱۰ or ۱۵ years), regenerated seeds in open storage ۲۲ °C for ۲ years (Control) and aged seed under accelerated ageing (۴۰ °C, ۹۸% of relative humidity for ۴۸ and ۷۲h) and c) priming treatments including: non-priming (control), osmo-priming (PEG-۰.۳Mpa), hormonal priming (gibberellic acid at ۲۵۰ and ۵۰۰ppm). Data collected for seed emergence percent, root and shoot length, seedling length, vigor index, seedling weight and three peroxidase, catalase and superoxide dismutase (SOD) enzymatic activities. Result of analysis of variance showed significant effects of all factors and their interactions for all of seedling traits and enzymatic activities except for SOD ($P < 0.01$). Results also suggested significant differentiation among three accessions of *A. millefolium* for all germination traits and enzymes activities. Results showed that responses of accessions to aging and priming treatments were different. The data demonstrated that catalase is a key enzyme for seed repair against ageing ROS-induced damage during priming treatment.

کلمات کلیدی:

Achillea, deterioration, priming, germination, catalase

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