



**EFFECTS OF DIFFERENT PRETREATMENTS ON SEED GERMINATION
IMPROVEMENT OF *PEROVSKIA ABROTANOIDES* KAREL**

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Perovskia L. belongs to Lamiaceae family (subfamily: Nepetoideae) and three species of this genus (*P. atriplicifolia* Benth, *P. abrotanoides* Karel., *P. artemisoides* Boiss.) are grown in Iran [1,2]. The *P. abrotanoides* have various pharmacological properties including anti-bacterial, anti-inflammatory, anticancer, anti-infection, cytotoxic and ameliorating rheumatic pains effects. These biological activities are related to the presence of tanshinones and phenolic acids, especially rosmarinic acid. Because of the low rate of seed germination, the proliferation and micropropagation of this plant may have high importance. The aim of present investigation was to evaluate the effects of different pretreatments in order to reduce dormancy period, and increasing the seed germination rate and percentage. The effects of pretreatments including temperature (-20, -80, and -180 °C), humid and dry pretreatments at 4 °C, as well as some physical and chemical pretreatments (sand paper, H₂SO₄ (1%), running water) on seed germination rate and percentage were evaluated on filter paper or MS and 1/2 MS basal medium. For statistical analysis of data, 100 seeds were cultured in three replicates in each pretreatment. The results showed that the highest values for seed germination percentage were achieved by pretreatments of the cultured seeds on filter paper with sandpaper (95%) and H₂SO₄ (89.66%), as compared to control (50%). The maximum seed germination rates were obtained for the seeds pretreated by sandpaper (7.3 in 10 days) and H₂SO₄ (6.383 in 10 days), while the lowest germination rate (3.42 in 10 days) was measured for the seeds pretreated at -20°C for 24 hr. In conclusion, in this study we presented efficient methods for improvement of seed germination of *P. abrotanoides*, as a useful plant and a rich natural source of active compounds for medicinal and efficient propagation purposes.

References

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