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Effect of Cold Stratification with Different Durations on The Germination of Erect Crab (*Eriolobus trilobatus* (Poiret) Roemer.) Seeds

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Abstract

The aim of this study was to determinate some seed characteristics of Erect crab (*Eriolobus trilobatus* (Poiret) Roemer.). The effects of different sowing time and cold stratification periods on emergence percentage were investigated. 15 different treatments were applied. According to the results of the study, it was found that there were significant differences at 0.001 probability level between treatments. Percentage emergence value was the greatest for “2 months of cold stratification and sowing on March 2”. Direct sowings (without treatment) on April 2 and May 2 had the lowest emergence percentages.

Keywords: Erect crab, *Eriolobus trilobatus*, seed.

1. Introduction

Erect Crab (*Eriolobus trilobatus* (Poiret) Roemer.) is a multi-purpose forest tree species. It is not only used for soil conservation purposes and easthetic reforestations but also wildely used both in medicine and food sectors. In this study, some important seed germination characteristics of Erect Crab, especially effects of some different pretreatments on the emergence percentage were investigated.

2. Materials and Methods

Erect Crab seeds were collected from Egirdir Forest District in autumn of 2004. 1000 seed weight was calculated by using formula given by ISTA (1993) and seed productivity was determined. 15 treatments consisting of 8 combinations of different cold stratification periods with 2 sowing times and 7 different sowing times without any cold stratification were applied (Table 1).

The sowings were arranged in a completely randomized block design with 100 seeds of 4 replications. Before sowing, seeds were immersed into cold water for three days. Sowing lines were mulched with the carpels of Lebanon Cedar (*Cedrus libani* A. Rich.) cones.

$\text{Arcsin}\sqrt{p}$ transformation was performed emergence percentages prior to statistical analysis (Kalıpsız, 1994) and variance components were calculated by using SAS Statistical Programme (SAS, 2005). Analyses were realized separately for the treatments 1-8 and 9-15.

3. Results and Discussion

Each fruit of Erect crab had an average of 5 seeds. 1000 seed weight and seed productivity of 100 kg fruits were 27 g and 1,6 kgs, respectively. The results of the analysis showed that there were significant differences at 0.001 probability level between different treatments (Table 2 and 4). Percent emergence was the highest in 2 months cold stratification and sowing on March 2. Furthermore, direct sowings (without treatment) on April 2 and May 2 showed the poorest percentage emergences (Table 3 and 5).

4. Conclusion

It was found that Erect crab seeds require pretreatment with cold stratification for better germination. Seeds treated with 2-3 months cold stratification should be sowed in early spring (at the beginning of March) or seeds collected in autumn must be sowed as soon as possible in November and December without applying cold stratification. But it should not be cautious that these results can not be generalized and may vary from region to region. More comprehensive and detailed studies are needed to examine the characteristics of Erect crab seed.

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