

## Considering the Significant Factors, Affecting Seed Germination of the Cranberry (*Vaccinium Orctostaphylos L*) Herb.

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**Abstract:** Cranberry (*Vaccinium orctostaphylos l.*) due to very valuable medicinal properties of its fruit and leaves and also economically is one of the important medicinal plants, which unfortunately due to uncontrolled harvesting and the impossibility of its revitalization from seed in the nature, Now is going to be extinct. This study in order to its seed germination to provide a suitable method for its reproduction and conservation of the genetic germplasm with applying 10 different treatments over 10 fruit and seed in the laboratory of Islamic Azad University of Ardabil was performed. The results showed, firstly, that substances in the fruits (even dried) prevent of the seed germination of this plant, secondly the cold factor (12-) ° C is an effective factor in its seed germination. Thus, to maintain this plant, although the natural cold treatment is provided but the advice is that the substances in the fruit are washed through acid and distributed its seed in the nature and location of habitat.

**Key words:**

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### INTRODUCTION

Cranberry (*Vaccinium orctostaphylos l.*) with a perennial botanical profile is a plant (bush) with long roots and creeping stems, oval, evergreen, intermittent and sharp leaves with the bag from flowers in the green or pink color, fully isolated and with the berry fruit (Khezri, 2004; Zamani, 2004).

This plant has a different species in the world that according to Mozaffarian's report, the orctostaphylos is the only plant species in iran (Mozaffarian, 2004). This plant grows in the high forest lands with acidic and moist soils and rich of the organic matters (Zamani, 2004). The distribution of this plant was reported in Azerbaijan, north of Iran, and sometimes in Arsbalan (Mozaffarian, 2004; <http://www.eazfrw.org>).

The most important medicinal part of the plant is the fruit (Zamani, 2004). which has the ingredients such as acid Tanic, Rebutin, insulin, tannins, organic acids, gloconin, robust oxidants and anthocyanin (Zamani, 2004; Dirr., 1987) Of this plant widely in the traditional medicine for lowering the blood pressure and also diabetes are used (Khezri, 2004).

Now as a modern drug to reduce blood pressure and in the capillaries of eyes and rupture of the eye is formulated. Although, this plant in the traditional medicine for anti-aging, reducing blood density and ultimately reducing myocardial infarction (heart failure) is also used (<http://www.iran-newspaper.com>) and what was caused to the high importance of this plant is the existence of and different types of anthocyanins and antioxidants.

That can be represented as an Anti mutagene and anti canceration and also in some references as an antiviral.

This plant in the areas of Distribution due to the severe erosion of plant sources on one side and the coarseness of fruit and its seed supposedly due to the high Economic justification on the other hand, it is without the germination and very weak and hard to be reproduced through scion or vegetative organs (Due to the hormone urgency) that make this plant be on the endangered list.

Wees (in 2007) reported an increase from 40% to 80% in the cold effect for having buds of the Sarkhargoldor of the purpurea species. Lohengrin *et al.* (2000) reported that germination of *Phacelia secunda* plants under the cold treatment will be increased.

Kenneth, (1991) In 1991 reported the effect of the ester etikiasion as an effective factor in increasing germination. In 2003, Mohammad and Moosa (2003) in an article, the Effect of sulfuric acid on the germination *Tamarindus indica* Tamarynd and they treated 49% acid in 61 minutes and reported it as an effective treatment.

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So far, the various methods for the revitalization of this plant have been used, but their success has been quite low in this experiment to evaluate various treatments on the germination of seeds of this plant to maintain its economic production as an extensive farming, have been conducted.

### MATERIALS AND METHODS

The Cranberry Fruits were collected in the region of firoozkooch toward mianeh (khalkhal), after drying and maintaining them for 8 months to spend as the sleep period as the herbal plant materials were used. The following treatments were applied in testing:

1. Fruit without applying cold.
2. Seeds without applying cold.
3. Applying the cold before planting the fruit.
4. Applying the cold before planting the seeds.
5. Moistening the fruit after applying the cold and then planting the fruits.
6. Moistening the seeds after applying the cold and then planting the seeds.
7. Scratching the fruit after moistening it, and then chilling and then planting the fruit.
8. Scratching the fruits after chilling and before planting.
9. Acid sulfuric treatment on the fruit after moistening, then chilling, and then planting fruits.
10. Applying the sulfuric acid treatment on the fruit and applying the cold before planting the fruit, the design frame was performed as a randomized complete block design (RB) in three replications in the Petri dishes after the disinfection in the laboratory of Islamic Azad University of Ardabil. In each treatment, every day until the day twelfth after planting, the number of germinated seeds was counted.

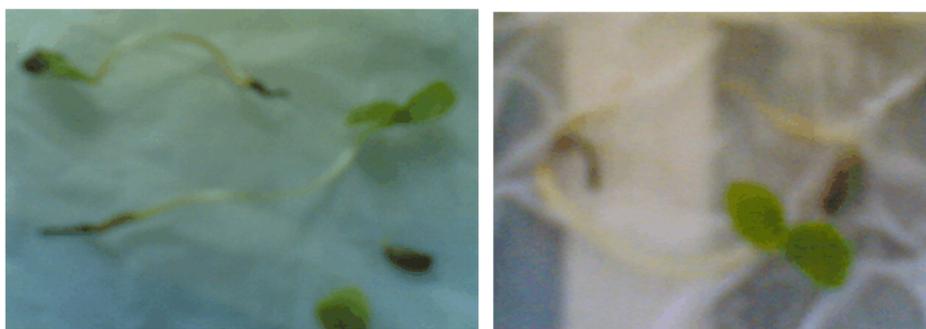
#### Conclusion:

Between treatments in the fruit planting treatments in any conditions other than applying the sulfuric acid on the fruit did not answer. However, the treatments were effective on seeds that the results of germinated seeds in the Table 1 have been shown.

**Table 1:** Average number of the germinated seeds in Petri dishes (in percent).

Day	8	6	7	8	9	10	11	12
Cold week before planting seeds	16-Jun	25	66/41	50	60	66/91	66/91	66/91
Soak seed after seed sowing and after chilling	-	-	33/8	25	66/41	50	66/66	33/83
Sulfuric acid treatments on the fruit after fruit wetting Week and then cold and then planting fruits	-	-	-	-	-	-	11-Nov	66/66
Sulfuric acid treatments on fruit and cold week before planting fruits	-	-	-	-	-	22/22	66/66	88/88

According to the table, the highest number of the germinated seeds which was related to the cold treatment before sowing the seeds that the applied treatment was the sulfuric acid treatment on the fruit and applying the cold before planting fruit has no significant difference. And the lowest germinated seed was significantly related to the applied treatment of sulfuric acid on the fruit after moistening it and cold and then planting fruit.



**Fig. 1:** The samples of germinated seeds in the petri dish.

Dipping down the fruit to 15 minutes in the sulfuric acid was caused to damage the fruit of this plant and practically applying the cold treatment on the seeds is done and that's why this treatment hasn't so many differences with applying the treatments on the seed.

Most significant factor to seed germination is the cold about (-12) ° C for 10 days, such that in the treatment without applying the cold having seed germination of the seed was not possible. Dirr and Heuser (1987) also have developed the soaking and chilling the seeds.

These results, although not found another study in this area but with significant results related to a number of germinated seeds of the medicinal plants was similar (Wees., 2007; Lohengrin., 2000; Kenneth., 1991).

#### **Discussion:**

According to the test data and its replication, it seems to be the ingredients (compounds) of the fruit. Itself is a factor to reduce seed germination in a normal way.

So for making this plant as an agricultural crop and also reducing the extinction of this plant through its seed germination can be significant in nature by collecting fruit and eventually rinsing acidic compounds of fruit on the seed, it can be gemmated with applying the cold to it.

Therefore, the independent experiments on the direct seed cultivation with applying the cold were carried out that the results of reviews were very satisfying and this approach seems practical in the nature and is recommended.



**Fig. 2:** A sample of seeds was germinated in the soil.

#### **REFRANCES**

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