

The Seed of *Valeriana Officinalis* L. Grows and Develops in Modification to the Climate

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Abstract: *Valeriana officinalis* L. in the condition of Tashkent region in modification to the climate, bioecological peculiarities and agrotechnics hasn't investigated fully in scientific yet. Investigation carried in little experiment field of Tashkent state of agricultural university. Dates of conducting of seedlings on the bases of scientific results, morphological signs, germinating of seed, growing of plant, developing and ripen seed was done at the first time.

Keywords: modification, *Valeriana officinalis*, morphology, stalk, leaf, flower

1. Introduction

Medicinal valeriana plant is popular plant in old medicine and traditional medicine. *Valeriana officinalis* (old grass). The group of Valerianas – belong to the family of Valerianaceae, widely spread in Russian, Moldavia and Belorussia. All of the FIK's countries (Central Asia and out of north part of Siberia) it grows on damp lands, territories of forest, brook's borders, with in bushes and pastures. It takes out some of short stem of root, steep growing, it reaches 10-20 cm brown or yellow, brown color roots. It's leaves are similar odd feather, opposed settled, naked or covered with furs. Low leaves is handle, upper leaves aren't handle. It's flowers are small, aromatic white pink color, fruits are light brown or brown color, naked [3].

2. Object of Investigation

Valeriana officinalis L. belongs to many year *valeriana officinalis* the family of Valerianaceae part of valeriana.

3. Method of Experiment

In learning the biochemic characteristics of a plant there is used T.A. Rabotnov (1950) method, while P.K. Krasilnikov (1983) method is used to learn the root system of a plant.

4. Results

There is used some ways in order to check the germination of a seed in a field: first investigation was held on the basis of period for planting (spring, summer). It is found out that, the growth speed of seeds consists of 25 – 30 % in March, April, and May while, this percentage is equal to 56,6% in July and August. In the second investigation the depth of planting, the surface of soil 0,2 and 0,5 sm was taken into consideration. The growth of the seeds that are planted on the surface of soil 28,8%, if it is planted in the depth of 0,2 sm the percentage consists of 46,6% and in the depth of 0,5 sm it shows 29,4%. The third investigation was held in sunny and shady fields. The growth of the seeds which are planted in shady condition 56-60% .But there wasn't any growth of the seeds that are planted in sunny condition.

When the growth of a seed becomes much and fast, the development and the growth of a plant in vegetation period undergoes rapidly. It was found out that, the growth and the development of *V. officinalis* depends on whether it is planted from a seed or seedling. (table 1). The percentages of a planted from a seed were less than the seeds that are planted from a seedling during the whole vegetation. It means that, the average length of this kind of plants was 17 sm in June 1, 2016. It was noted that, after one year this percentage was equal to 37 sm, after 2 years it was 40 sm, and finally, after 3 years the length of a plant was 45 sm.

Table 1: The growth and the development of *V. officinalis*

Version №	The length of main stem (sm)			The number of total leaves (sheet)			The branches of crop
	Date (2016)						
	1.06	1.07	1.08	1.06	1.07	1.08	
1	17	53	67	2	4	5	2
2	37	68	85	4	6	8	5
3	40	94	118	6	8	10	6
4	45	98	128	6	10	12	7

Selecting the ripen period of the *V. officinalis*'s seeds is considered one of the significant factors. Collecting the seeds before it is not ripen totally can lead to negative effects. For example, the germination of seeds can decrease rapidly.

Delaying the ripen period of a seed can lead to be fallen the leaves by the effect of wind. And also it causes spreading during the harvest. As a result, the crop can be lessened.

In order to find out the ripen period of *V. officinalis*'s seeds there is held 2 and 3 versions in the field of investigation. The condition of a seed (the size and color of a seed, the degree of attaching to the bunches, the degree of humidity of a seed) found out by observing one time in every 4 and 5 days from July 28 till August 15, 2016.

In the initial period of the investigation (June 28, 2016), the seed was small and unripe (in the length of 0,6-0,6 mm), light green, the seeds were tightly stuck to the branches, dry and no elements of dampness.

The color of seeds was dark grey and solid, the most part of seeds were fallen from the branches when the ripen degree of a seed was observed in August 15, 2016.

In general, all the investigation that is carried on the ripeness of *V. officinalis* shows that, the seeds can ripe after 14- 16 days after it is appeared.

In this period the colour of seeds becomes gray, and the diameter of a seed is 1,0-1,2 mm. They are adhered to the bunches lightly and they are not squeezed when they are pressed. It is possible to collect all the seeds in this period. If the term of picking seeds is delayed, the possibility of falling 30%- 40% seeds can be observed.

In the experiment of the seed culturing ability of *officinalis* according to different variants in the plant completely

blossom period, the number of flowers in branch, amount of mature seeds and these new formed seeds comparing to flower (in the percentage %), the weight of seeds in one plant and the weight of 1000 seed have been determined (2-table). The received results review of *V. officinalis* seed illustrates that in the phase of plant changed to flower the number of blossom in a branch is from 80 to 258. In the variants of experiment baskets which have the least flowers are in 1 variant or in the form of valerian seed planted, the most number of flowers are presented in 3 and 4 variants (in 2-3 year plants).

Table 2: *V. officinalis* seed results

Variant №	The number of flower in one basket (piece)	The number of seeds in one basket (piece)	Seeds relativity to flower %	The weight of seeds in a plant (gm)	Weight of 1000 seeds (gm)
1	80	20,2	25,0	1,0	0,45
2	140	54,1	38,6	2,5	0,47
3	244	124,0	50,8	3,8	0,50
4	258	128,0	49,6	4,0	0,50

The reason for increasing flower in 3 and 4 variants is the large size of 2- 3 year plants and the existence of sufficient condition for developing rapidly. In the 1 variant in which growing of plant that is planted from their seeds in this spring is related to the slightly change of development and the root system of plant.

It can be observed that the amount of grown seeds in the baskets are also different according to the variants of experiment. The least seeds in the baskets of 1 variant are 20,2 pieces, the most, 124,0-128,0 pieces are formed in 3-4 variants. In comparison ripe seeds to the number of flowers in seed, a bit less of seeds than the amount of flowers have been noticed. For instance, in the experiment of 1 variant 25 % of total number of flowers changed to seeds and in the 3-4 variants it shows 49,6-50,8% respectively in these forms. The seeds in the 2 nd variant experiment are 38, 6%.

V. officinalis begins to enter blooming phase in the hottest months such as at the end of June and at the beginning of August as the high temperature can be caused to the weakness of photosynthesis and transparency action and it leads to flower incompletely dusted. As the result, it may cause to minimize the birth of seeds rapidly. When in the globe of experiment according to variants the mass of seeds is observed, this result also can be differentiated looking to variants. The largest mass of one plant in the 3-4 variants of experiment is marked as 3,8-4,0 gm, the least shows 1,0 gm. in the 1st variant.

Considering variants we can state that when the weight of 1000 pieces of seeds is analyzed in the experiment of 1 variant, it shows a bit little mass 45, while in 3-4 variants it constitutes 0,50 gm.

5. Summary

For increasing *officinalis* valeriane plant in the climate of Uzbekistan and for satisfying the demand of pharm-inustry, developing plant pollination is conceived as one of the

significant problem in front us. From *V. officinalis* plant every year 2,1-2,4 sr seeds can be taken.

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