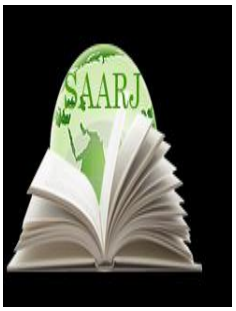
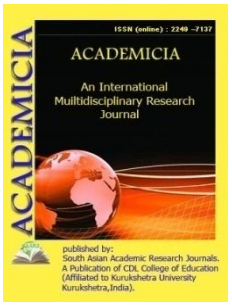


ACADEMICIA
An International Multidisciplinary Research Journal
(Double Blind Refereed & Peer Reviewed Journal)



DOI: 10.5958/2249-7137.2021.00610.8

SCUTELLARIA COMOSA JUZ LATENT PERIOD IN ONTO GENESIS

Zhamolov Akbarova Mukhayyo Xusanovna*; Yusupova Zokhidakhon Abdumalikovna; Juraev Zukhuridin Najmidin oglu*****

*senior Teacher,
Ferghana State University,
UZBEKISTAN

**Teacher,
Ferghana State University,
UZBEKISTAN

***Student,
Ferghana State University,
UZBEKISTAN

ABSTRACT

This article provides information on the stages of the ontogenetic period of the medicinal plant Scutellaria comosa Juz. In the course of laboratory observations, the features of the latent period of the plant were studied. Such features include the formation or loss of individual organs, the growth of the branch, the nature of branching, the degree of development of the surface mass, the number of vegetative and generative branches, the proportions between the height and diameter of the plant.

KEYWORDS: *Ontogeny, Vegetation, Latent, Virginyl, Juvenile, Generative, Subsenile, Ecological, Coenotic, Ontogenetic.*

INTRODUCTION

Due to the sharp increase in demand for natural medicinal plant products, their reserves in nature are decreasing. Therefore, it is an important urgent task to study the biological foundations of the process of their restoration in nature, the use of their reserves on a scientific basis. An important indicator is the study of the formation of the place of plant cover, especially in populations scattered in their various ecological environments. Because the main indicator that determines the position of the plant in the plant cover is their senopopulation state, that is, the property of

pressing the periods and stages of ontogenetic development. Therefore, without analyzing the plant species from a senopopulatory point of view, it is impossible to draw a fully scientifically based conclusion about its role in the plant cover, the state of recovery and the use of their reserve.

Natural resources are declining due to a sharp increase in demand for natural medicine products. To do this, it is possible to study the biological basis of regeneration in nature, the scientific basis for the use of their sources. Special conditions have been created to implement the accelerated operation of populations living in different ecological environments. Because the main indicators of the role of operations in the vegetation were the state of senopopulation, the transition to the main ontogenetic treatment processes and processes. On this basis, without analyzing the types of work in terms of senopopulation, it is impossible to draw complete scientific conclusions about its role in the overall movement, the state of recovery and the use of their reserves.

OBJECTS AND METHODS OF RESEARCH

One such plant is Scutellaria L., a source of new drugs. Propagation is the reproduction of a plant from seed. Seed propagation techniques are widely used in world practice to propagate perennials and restore their natural aging. The biology of seed germination includes many factors, the main components of which are exogenous (temperature, humidity, light, storage conditions) and endogenous (structure of the seed coat, physiological state during germination). Based on these components, exogenous, endogenous, and mixed sleep patterns are distinguished in seeds.

From this point of view, the study of the biomorphological properties of *Scutellaria comosa* in nature has an important scientific and practical significance.

Scutellaria comosa Juz.- Scutellaria is a small shrub of the Lamiaceae family and is a promising medicinal plant. Valuable medicinal flavonoids, glycosides were isolated from species belonging to the genus Scutellaria L. (3: 110). In Uzbekistan, a number of scientific studies have been conducted to study the biomorphological properties of perennial grasses, shrubs and shrubs living in nature and in cultivated conditions [4,7]. However, research on *Scutellaria comosa* is insufficient [8].

Ontogenetic groups were identified taking into account the additions of A.A. Uranov (1975) and his students (Plant senopopulation, 1976, 1988). The type of ontogeny has been established based on the classification approaches of ontogeny of perennial plants (Zhukova, 1987, 1995). Ontogeny has been described in a variety of ecological and cenotic conditions. More than 1000 herbarium specimens were analyzed and 100 plants were obtained for quantitative description of ontogenetic conditions.

The data were processed statistically: arithmetic mean, its error, minimum and maximum values of functions, calculated using a computer program. When comparing the values of biometric parameters of plants in different habitats, values with significant differences on the Student's t-test (95% significance level) were used (Zaysev, 1984). A standard table (for $n \leq 0.05$) was used to calculate the critical values of the student t-test (Milnikov, 2007).

In determining the ontogenetic structure of plant senopopulations, the criteria of their periods and stages, O.B. Smirnova et al (1993), L.A. Zhukova (1987, 1995) methods were used.

RESULTS AND DISCUSSION

According to the study of the stages and stages of ontogeny of plants, the duration of the juvenile phase is 35-40 days, and the immature phase is 45-50 days. The total duration of the virginil period is 1-2 years and the generative period is 10-16 years.

(TABLE 1). THE DURATION OF THE ONTOGENETIC STAGES OF SCUTELLARIA COMOSA

Plant ages and stages	Duration per year (days)	Year duration
Latent period		
Virginil period	146 - 165	1 - 2
Lawn stage juvenile stage immatur stage virginil stage	16 - 20 35 - 40 45 - 50 50 - 55	
Generative period	58 - 75	10-16
Subsenyl period	20 - 28	3 - 6

Observations of the stages of *Scutellaria comosa* ontogeny (n = 100 in several plants) resulted in the termination of vegetation during the virginil period in the first year, and in the second year, 10–12% of plants entered the generative period. In the third year of development, the transition of the tubers to the young generative stage is 85-95%. The major life cycle of S.comosa ontogeny lasts 14–24 years.

The ontogenesis of the species has been studied in a group of evergreen-stone-wormwood plants found in the stony-gravel soils of the hills of Damkol village, Fergana district, Fergana region. The morphological features of the plant, which change with age, allow us to study different age conditions. Such features include the formation or loss of individual organs, the growth of the branch, the nature of branching, the degree of development of the surface mass, the number of vegetative and generative branches, the proportions between the height and diameter of the plant. According to the classification of S.V. Yuzepchuk (1954), Scutellaria species are perennial, orthotropic, anisotropic polycarp, chamefite plants [3].

Based on generally accepted classifications in the study of the major life cycle of S. comosa, we will consider the following periods and stages:

In the ontogenesis of *S. comosa*, 4 age periods were distinguished: latent (se seeds), virginil (r - grass, j - juvenile, im - immature, v - virginil), generative (g1 - young generative, g2 - medium generative, g3 - old generative), subsenil (ss- senil).

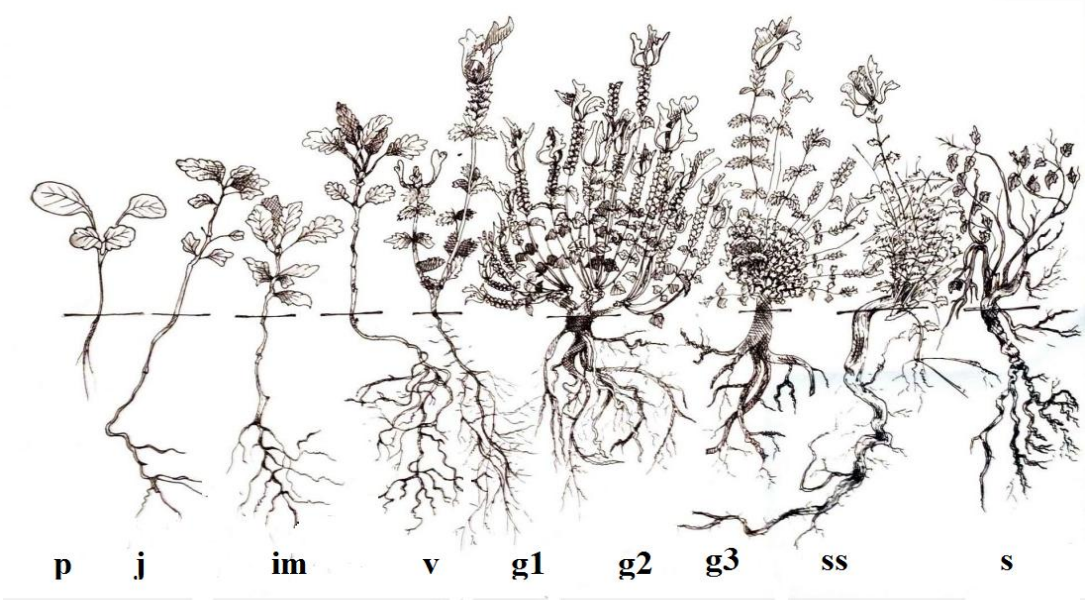
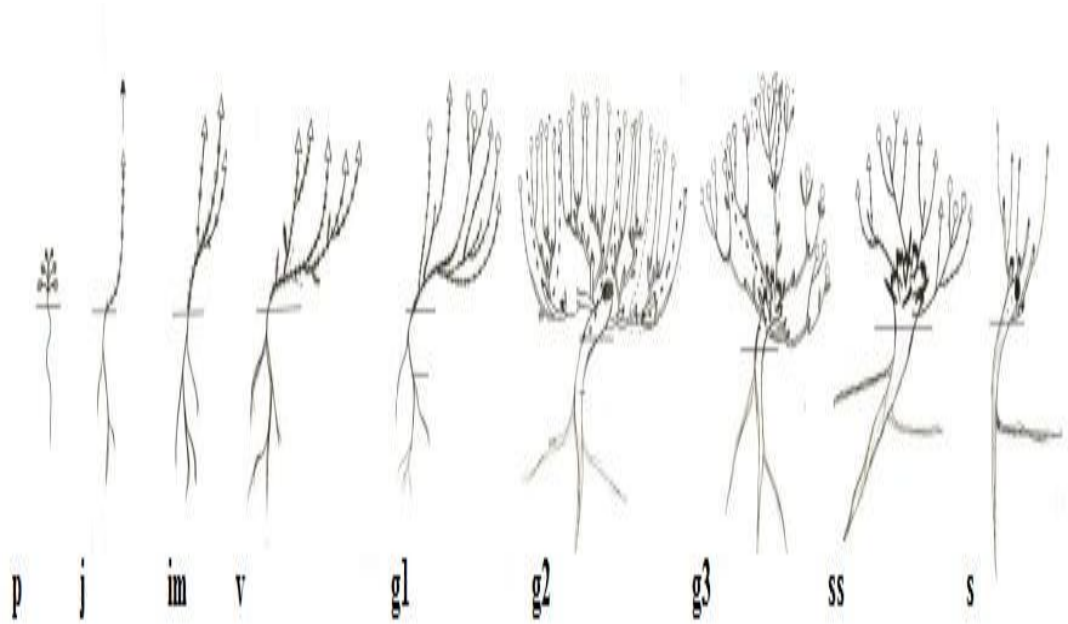


Figure 1. Scheme of ontogenetic cycles of Scutellaria comosa



Latent period

One of the main factors determining the regeneration of a plant in the vegetation is the biological properties of its seed state. In order to study the biomorphological characteristics of the seeds of *Scutellaria comosa*, the seeds of medium generative stage growing in the hills around the village of Damkol, Fergana district, Fergana region were used. [7]. The soil of these hills is gray soil, the annual rainfall is 240-250 mm.

It is known that seed yield depends on a combination of internal and external factors. Internal factors include, first of all, the number of sperm in the node, hormonal balance, transport of certain elements, and external factors - the genotype that determines the weather conditions of a particular season and agrophone (Levina, 1980). Potential and actual seed productivity, as well as fertility, reflect the suitability of biological characteristics and living conditions of the population. [5].

Weather conditions during the growing season are important for the productivity of *Scutellaria comosa* seeds. Seed yields increase in favorable weather conditions and decrease in adverse weather conditions. The following indicators were recorded for the growth period in 2018-2019: the average number of seeds in a walnut is 2.7 ± 0.005, the average number of generative branches in a single plant is 6.73 ± 0.03 formed. [4].

One of the main indicators of the suitability of growing conditions for the biological needs of a species is the presence of seeds. Seed productivity is a quantitative and seed germination is a qualitative feature of a seed. Seed germination is the process by which a seed emerges from a dormant state and sprouts from a vegetative growth sprout. Seed quality is determined by seed size, 1000 seed weight and germination [2].

The seeds of *Scutellaria comosa* are flattened, ovate, 1-1.5 mm long, elliptical in cross section. The color is gray, slightly darker. In order to determine the absolute weight of the seeds, 20 plants of almost the same age of middle generative age were selected and harvested in late September 2018. After the seeds were separated from the fruit, they were counted 5 times out of 1000, and the average weight when weighed was 1.1 g.

Fertility of *Scutellaria comosa* seeds in the laboratory was determined on the basis of the method of MK Firsova at temperatures of $+20^0$, $+25^0$, $+30^0$ [8].

Experiment 100 seeds were placed on Petri dishes and 3 experiments were performed on each temperature indicator. According to the experiment, the maximum forgetfulness of *Scutellaria comosa* was 65.5% at $+25^0$.

TABLE 2 SEED GERMINATION OF SCUTELLARIA COMOSA IN LABORATORY CONDITIONS (N-100)

т^{0}C	Days										%
	1	2	3	4	5	6	7	8	9	10	
	1.09.	4.09.	6.09.	8.09.	10.09.	12.09.	17.09	20.09.	25.09.	30.09	
20^0C	0	2	6	18	32	52	52	55	57	58	58
25^0C	0	4	10	22	38	56	60	63	64	65	65
30^0C	0	3	8	19	35	55	59	60	61	61	61

Seed germination capacity was 20^0-30^0 14%. The dormancy period of *Scutellaria comosa* seeds was short, the germination of seeds obtained at the end of September 2018 was 65%, after one year of storage it decreased sharply to 17.6%, and two years later to 2.4%. Therefore, it is recommended to use freshly harvested seeds in the organization of artificial plantations of *S. comosa* [6].

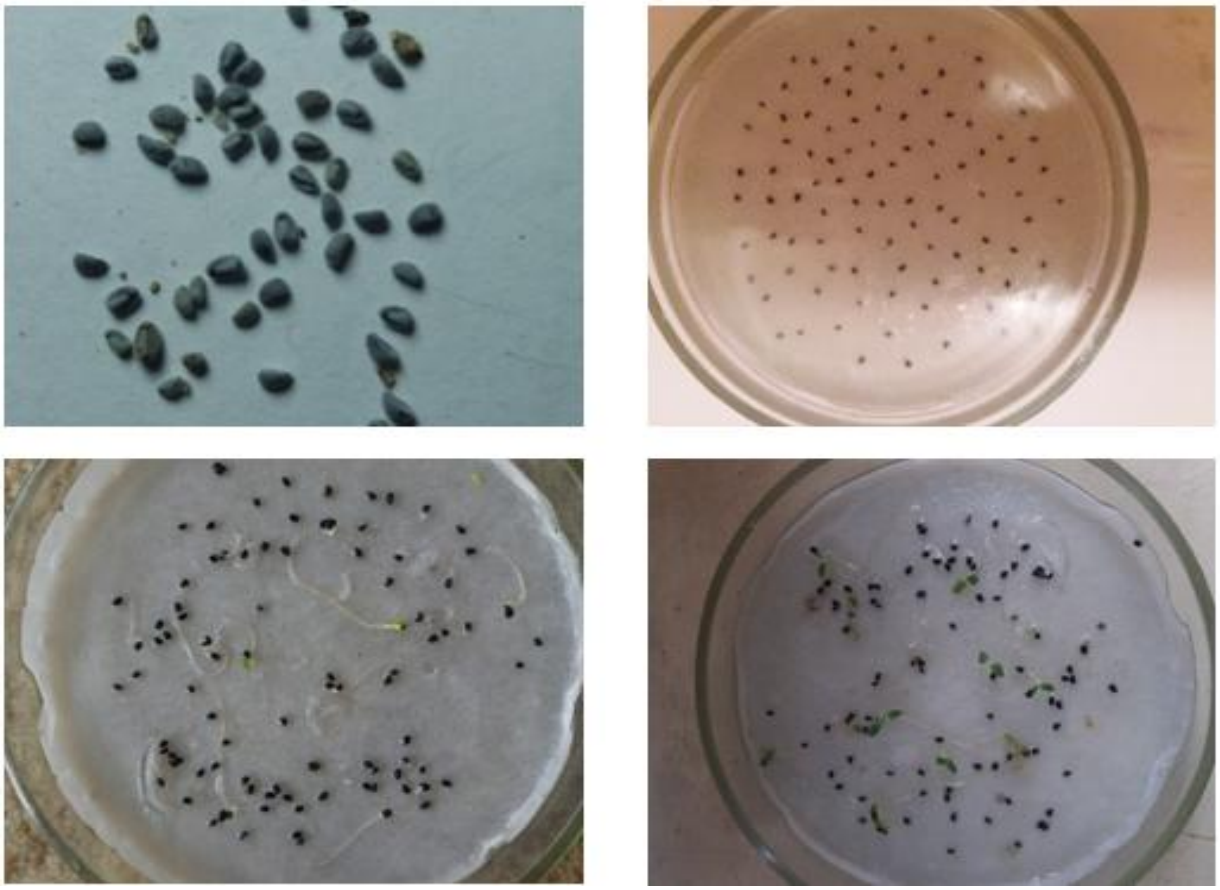


Figure 2. Germination of Scutellaria comosa seeds

In order to determine the germination rate of *Scutellaria comosa* seeds in the field, the seeds collected in late September 2018 were sown in a specially prepared experimental field in October, November and March and April 2019. To do this, the soil was loosened and leveled to a depth of 30 cm, and furrows 40 cm wide were taken and 100 seeds per 2 meters were sown 3 times at a depth of 0.5-1 cm. The yield of *S. comosa* in the field was 40.5% in October, 37.8% in November and 43.8% at the end of March next year. Therefore, it is advisable to sow the seeds of *Scutellaria comosa* in the spring in March-April.

In order to determine the role of the latent period in the natural regeneration of *Scutellaria comosa* in the vegetation, the seeds of the plant were found in the soils of Damkol village of Fergana district and Gozalobod village of Turakurgan district of Namangan region. stock was analyzed. For this purpose, in November 2018 and April 2019, an area of 1 m2 was identified around the plants belonging to the middle-aged generative stage, and seed reserves were studied in 5 cm thick soil. For this purpose, the soil sample was washed through a special sieve and divided into fractions. It was found that soil samples with a diameter of 0.5-1 mm sieve contained an average of 60-65 seeds per 1m2 in November, and 20-25 seeds in the sample taken in April.

From the data obtained, it can be concluded that the germination of *Scutellaria comosa* seeds lasts from 1 to 5-6 months, after which they germinate. This means that the seeds of *Scutellaria*

comosa spend the dormant period in two different environments, that is, the seeds that ripen during September and survive in the construction of the shed and the generative stem, live in February-March next year.

Analysis of the plant's seed stock in the soil showed that the degree of natural regeneration in the vegetation cover, perennial shrubs that dominate the vegetation cover: *Kochia prostrata* (L.) Schrad., *Artemisia sogdiana* Bunge, *Perovskia angustifolia* Kudrjasch., *Convolvulus hamadae* (Vved.) Petrov, *Lagochilus platycalyx* Schrenk, perennial grasses: *Haplophyllum pedicellatum* Bunge, *Ferula lipskyi* Korovin, *Capparis spinosa* L., *Poa bulbosa* L. and annual grasses: *Delphinium rugulosum* Boiss., *Glaucium fimbrilligerum* Boiss., *Erodium cicutarium* (L.) L'Her., *Avena fatua* L., *Ziziphora tenuior* L. were found to be lower than larvae [1].

CONCLUSIONS

Therefore, the organization of the *Scutellaria comosa* reserve is carried out in two directions, firstly, the creation of a protection zone in its natural growing areas, and secondly, special planting and reproduction in forestry.

From the results it can be concluded that *Scutellaria comosa* is a promising medicinal plant, the scientific study of its ontogenetic periods and stages is necessary for its natural regeneration and organization in artificial plantations.

REFERENCES:

1. Akbarova M. X., Nabijonova G. F., Juraev Z. N. Distribution of Scutellaria comosa Juz. (Lamiaceae) in botanical and geographical regions of Uzbekistan // BBK 1 A28. - 2020. - C. 15.

2. Akbarova M. X. and dr. Otsenka sostoyaniya tsenoticheskix populyatsiy Scutellaria comosa Juz. (Lamiaceae) Ferganskoy doliny // Ratsionalnoe prirodopolzovanie-osnova ustoychivogo razvitiya. - 2020. - C. 12-17.

3. Akbarova M. X., Juraev Z. N. U. Sostoyanie tsenopopulyatsiy Scutellaria adenostegia Brig. (Lamiaceae) v Ferganskoy doline // Science and Education. - 2020. - T. 1. - №. 4. R.34-40

4. Akbarova M. X., Obidov M.V. Dorivor Scutellaria comosa Juz. The state of senopopulation in the Fergana Valley (Lamiaceae) // Scientific Bulletin of NamSU - Namangan - 2020 - №8.- P.78-87.

5. Akbarova M. X., Juraev Z. N. U. Sostoyanie tsenopopulyatsiy Scutellaria adenostegia Brig. (Lamiaceae) v Ferganskoy doline // Science and Education. - 2020. - T. 1. - №. 4.

6. Juraev Z. N. Ecological and phytocenotic characteristics of Scutellaria comosa Juz. (Lamiaceae L.) // young researcher: challenge and perspective. - 2020. - C. 27-30.

7. Turginov O.T., Akbarova M.X. Distribution of species flora of the genus Scutellaria L. (Lamiaceae) Fergana valley // American Journal of Plant Sciences. - 2020. - T. 11. - C. 1533-1544.

8. Firsova M.K. Methods for determining the quality of semen. - M .: Selxoz literatura, 1959.- C. 351.