



BIOECOLOGICAL FEATURES OF COMMON ANIS IN THE CONDITIONS OF KARAKALPAKIA

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ABSTRACT: - The article presents morphological and diagnostic features and ecological features of growth in culture according to *Pimpinella anisum* L. in the territories of Karakalpakstan.

KEYWORDS: Common anise, shoot, leaf, inflorescence, buds, flower, fruit, seeds, alkaloids.

INTRODUCTION

In recent years, work has been carried out to determine the bioecological features of promising medicinal plants in the conditions of Karakalpakstan, the introduction of introduction into practice and the development of agrotechnical measures. In the conditions of Karakalpakstan, the study of *Pimpinella anisum* L. has not been carried out so far. At the same time, it is quite obvious that the biological and ecological substantiation of

the medicinal value of common anise introduced in the territory of Karakalpakstan, the possibility of their rational use as medicinal plant raw materials are very relevant.

Considering the value and medicinal properties of plants, in 2019-2022. we have observed the cultivation of common anise in the conditions of Karakalpakstan.

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The aim of the study is to study the bioecological features of *Pimpinella anisum* L. in the conditions of Karakalpakstan.

Research objectives: to study the bioecological features of *Pimpinella anisum* L. introduced in the soil and climatic conditions of the Republic of Karakalpakstan; assessment of growth dynamics and morphological parameters of terrestrial organs of common anise; determination of bioecological characteristics of plants in the generative period, depending on the place of growth;

RESEARCH METHODS

Biological, ecological, botanical and statistical methods were used. Records, observations, were carried out according to the method of Dospekhov B.A.[2].

In 2019-2022 at the experimental sites of the Aral Sea Innovation Center under the President of Uzbekistan and in 2021. On the territory of the farm "Samankol", the massif "Aibek" of the Khodjeyli district of Karakalpakstan, the introduction of plants selected as an object of study began *Pimpinella anisum* L.

Choice of cultivation site: Open ground was chosen for sowing. Prior to sowing, the site was fertilized. In culture, anise ordinary is an unpretentious plant. But it grows best in open sunny areas.

Common anise (lat. *Pimpinella anisum*) is an annual herbaceous plant belonging to the genus *Pimpinella*, in the Umbrella family (Apiaceae). The root is thin, fusiform, rod. Stem up to 60-70 cm high, erect, rounded, branched in the upper part. The basal and lower stem leaves are long-petioled, roundly serrated or lobed. Middle leaves with back - wedge-shaped two-lobed lateral leaflets, long-petiolate. Upper - sessile on a narrow vagina, twice or thrice pinnate with linear - lanceolate lobules; the uppermost three to five are

separate or whole. The flowers are small, five-membered, inconspicuous, collected at the ends of the branches in complex umbrellas 2.5 - 6 cm in diameter, with 7 - 15 short - scattered pubescent rays. The involucre is absent or it is single-leaved, the leaves of the involucre are filiform, the petals are white, 1.5 mm long, ciliate at the edges. Stamens five; pistil with lower bilocular ovary and two columns. Blooms in June - July. The fruit is greenish-gray two-seeded, ovoid or reverse pear-shaped, brownish-gray, 3-5 mm long. Fruits with a pleasant smell and sweetish-spicy taste. The weight of 1000 seeds is 2-3.6 g. It bears fruit in August.

The fruits contain fatty oil (from 8 to 30%) and essential oil (up to 6%). The essential oil contains anethole (80-90%), methylchavicol (10%), anisic aldehyde, anisic ketone and anisic acid. The essential oil has a characteristic aromatic odor and a sweet taste. In addition, coumarins and furocoumarin bergapten were found in them; among macroelements, potassium, calcium and magnesium predominate, and among microelements - aluminum, copper, zinc and manganese[1].

Anise ordinary has anti-inflammatory, antispasmodic and expectorant properties. Plant preparations improve sputum expectoration and liquefaction, accelerate the evacuation of sputum and mucosal inflammation products from the respiratory tract, and have a bactericidal effect. The highest therapeutic efficacy of anise preparations is observed in respiratory diseases complicated by various bacterial flora. An anise aqueous solution enhances intestinal activity, stimulates the functions of the digestive glands, improves digestion, has antiseptic, laxative and carminative effects. It has been established that anise oil reduces pain and restores peristalsis during convulsive spasms of the intestines [1].

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Anise is a thermophilic plant. But at the same time, he is quite cold-resistant at a young age. Anise prefers rich, well-calcified soils of light to medium texture. Seeds begin to germinate at a temperature of +14-16°C, but the optimum temperature for seed germination is +18-20°C. Germination requires high soil moisture. Shoots appear on the 14-15th day.

In order to propagate common anise in the conditions of Karakalpakstan, it is necessary to sow seeds in April, the sowing depth is 1-2 cm, the soil must be loose. Careful and timely care of crops during the period from sowing seeds to the beginning of stemming is of great importance. At this time, the anise is still very weak and cannot fight weeds on its own.

One of the main quantitative signs is that the length of the main shoot with a 10 × 10 scheme is from 5.6 to 59.2 cm, with a 20 × 20 planting scheme it is from 8.1 to 65.5 cm, with a 30 × 30 planting scheme it is from 9.4 to 70.3 cm. The length of the inflorescence with a 10×10 planting pattern is from 0.3 to 8.0 cm, with a 20×20 planting pattern it is from 1.2 to 9.5 cm, with a 30×30 planting pattern it is from 1.8 to 10, 0 cm. The length of the sheet with a 10 ×

10 landing pattern is from 1.1 to 10.3 cm, with a 20 × 20 landing pattern it is from 1.4 to 12.5 cm, with a 30 × 30 landing pattern it is from 15.1 up to 1.8. The leaf width with a 10×10 planting pattern is from 0.5 to 6.1 cm, with a 20×20 planting pattern it is from 0.9 to 7.8 cm, with a 30×30 planting pattern it is from 1.0 to 8, 0 cm. Flower diameter with a 10×10 planting pattern is from 0.9 to 3 cm, with a 20×20 planting pattern is from 1.0 to 4.8 cm, with a 30×30 planting pattern is from 1.1 to 6 .5 cm. The number of buds and flowers in a shoot with a 10×10 planting pattern is from 15 to 40 pcs, with a 20×20 planting pattern it is from 26 to 70 pcs, with a 30×30 planting pattern it is from 29 to 80 pcs. The length of the fruit diameter with a 10×10 planting pattern is from 5.1 to 15.5 mm, with a 20×20 planting pattern is from 6.2 to 18.9 mm, with a 30×30 planting pattern is from 9.1 to 21 ,1mm. The width of the fruit diameter with a 10×10 planting pattern is from 1.1 to 4.5 mm, with a 20×20 planting pattern it is from 2.6 to 5.0 mm, with a 30×30 planting pattern it is from 3.1 to 5 .5 mm.

Morphological features of common anise with different planting options

Signs	Landing pattern		
	10x10cm	20x20cm	30x30cm
	M±m	M±m	M±m
Length of the main shoot, cm	59,2±5,6	65,5±8,1	70,3±9,4
Inflorescence length, cm	8,0±0,3	9,5±1,2	10,0±1,8
Sheet dimensions, cm			
Length	10,3±1,1	12,5±1,4	15,1±1,8
width	6,1±0,5	7,8±0,9	8,0±1,0
Flower diameter, cm	3,0±0,9	4,8±1,0	6,5±1,1
Number of buds and flowers, pcs\shoot	40,0±15	70,0±26	80,0±29
Fruit diameter, mm			

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Length	15,5±5,1	18,9±6,2	21,1±9,1
width	4,5±1,1	5,0±2,6	5,5±3,1

Considering the data obtained for all signs of the common anise plant, we can conclude that the optimal planting of anise seeds is 30 × 30 cm.

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