American Journal of Biology and Natural Sciences
https://biojournals.us/index.php/AJBNS
ISSN: 2997-7185

BIOECOLOGY AND SIGNIFICANCE OF CATNIP (NEPETA CATARIA L.) IN THE KHOREZM REGION

Jumaniyozov Jalolbek Odilbekovich
b.f.f.d(PhD), senior lecturer
Omanbayeva Kumush Mukhtor kizi
master
Urgench State University named after Abu Rayhon Beruni

Received: 2025 15, Oct
Accepted: 2025 20, Oct
Published: 2025 04, Nov

Abstract:

This article provides scientific information about the morphological structure, distribution areas, chemical composition, and medicinal significance of the plant Nepeta cataria L. (catnip) in the Khorezm region. Additionally, the cultivation technology of this plant is discussed. The plant is known for its sedative, diaphoretic, and antitussive effects. The research highlights the importance of catnip in traditional medicine and the pharmaceutical industry, as well as its environmental and cultivation benefits. This study also explores its potential uses in aromatherapy, food, and beverages, and offers insights into its ecological adaptability.

Keywords: physiological parameters, thermoregulation, stethoscope, carbon dioxide, alveoli, oxygen, microbe, physical-geographical.

Introduction:

In recent years, significant attention has been given in Uzbekistan to the conservation and

rational use of essential oil plants, including the establishment of plantations and their processing. The medicinal properties of plants have been known since ancient times, and they have been used to treat various diseases. Prominent figures like Avicenna, Al-Razi, and Al-Biruni used medicinal plants to treat patients [1].

The pharmaceutical sector is making important progress in supplying natural medicinal plant raw materials, improving public health, upgrading national pharmaceutical infrastructure, and further developing the agri-industrial complex of medicinal plants. The development of this sector is one of the priority areas outlined in the new development strategy of Uzbekistan for 2022-2026, and a number of tasks have been set to ensure its implementation [2].

Materials and methods

Nepeta cataria L. (catnip) belongs to the Lamiaceae family and is a perennial herbaceous medicinal plant that contains essential oils. It is also known as lemon mint, catnip, and other names. The plant has a strong stem covered with soft hairs, and a branched root system. Its height ranges from 40 cm to 100 cm. Its leaves are covered with small hairs, giving them a whitish color, and are arranged oppositely on the stem. The flowers are purple and form a half-spiked arrangement at the top of the plant. Wild types of the plant have small flowers with white petals and purple spots. Selectively bred ornamental varieties have flowers in white, pink, blue, purple, and light-pink colors. The first flowers bloom in early spring, and the last ones bloom in late autumn. The plant starts to bear fruit in July and August. Its seeds are small, brown, smooth, and consist of four nuts. The seeds contain essential oil and other substances. A decoction of the leaves is used in traditional medicine [5] (Figure 1).

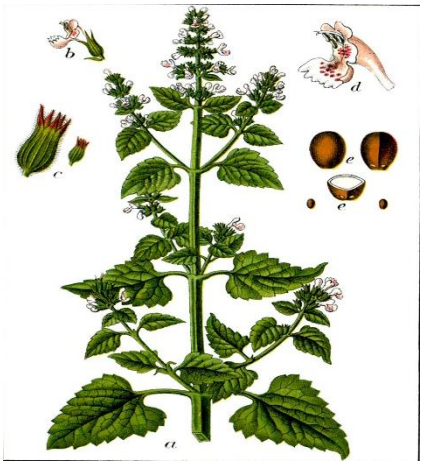

Figure 1. Zufo (Nepeta cataria L.).

Results

Nepeta cataria is widely distributed in Europe, Asia, America, and Africa, with over 200 wild species. It is found in Central Asia, including almost all regions of Uzbekistan, and often grows wild [1]. In traditional medicine, catnip has long been considered a magical herb. The upper part of the plant is used in infusions and decoctions, often mixed with other medicinal herbs. The preparations containing catnip have antipyretic, anti-inflammatory, diaphoretic, antitussive, expectorant, and restorative properties. They are effective in treating various respiratory diseases, loss of appetite, gastrointestinal diseases, and disorders of the nervous system (neurosis, depression, irritability, and stress). Catnip is included in herbal teas used to treat insomnia and anxiety [3].

This fragrant plant makes an excellent addition to tea when combined with rose petals. Catnip pairs well with fish and meat dishes and is used during cooking, as well as in sauces, salads,

vegetable marinades, beverages, and desserts. Even after drying, the plant retains its aromatic properties. Dried or fresh leaves, stems, and flowers may be added to food [7].

In the perfume industry, the essential oil with a distinctive lemon scent attracts the attention of perfumers, who use it in soaps, shampoos, shower gels, and other ingredients used in the production of perfumes [6].

Discussion

Catnip, especially the wild varieties, is a low-maintenance plant. It prefers sunny areas and thrives in open, sunny places, especially in the northern regions of the country. It is necessary to control the plant's growth by renewing and shaping it every five years; otherwise, it will start to invade neighboring areas. Excessive watering from below or from above can harm the plant, so irrigation schedules must be adjusted according to weather conditions. During dry summers, the plant can be watered twice a month. It is recommended to fertilize the plant with both mineral and organic fertilizers twice a year, in spring and autumn. Using nitrogen-rich complex fertilizers in the spring is effective. In the autumn, local fertilizers are sufficient [4].

The plant is propagated mainly through seeds and cuttings. Collecting seeds is not difficult. Seeds collected at least two years ago germinate well. The seeds can be sown directly in the open ground, usually in April or May, depending on the region. The seeds are very small and are mixed with sand or manure for better germination. Before planting, the soil (or container soil) should be lightly moistened, and the seeds should be carefully sprinkled about 1 cm deep into the soil, and then slightly moistened again. It is recommended to cover it with plastic wrap or glass to prevent it from drying out in greenhouse conditions. After 2-3 weeks, when the seedlings appear, the plastic or glass can be removed. The seedlings are grown until 2-3 leaves appear and then transplanted into permanent locations. When planting in open soil, there should be a distance of at least 25 cm between the rows. Once the seedlings appear, care should be taken to ensure that they do not obstruct each other's growth, as they will become thin if not properly spaced. The seedlings will produce flowers in the first year. Seeds planted in the open field will flower in the second year [3].

Conclusion:

Considering the medicinal, ornamental, and industrial importance of Nepeta cataria L., and its yet-to-be-fully-explored potential in the Khorezm region of Uzbekistan, studying this plant theoretically and practically is of great significance.

References:

1. Khalmatov, H.Kh., Habibov, Z.Kh. "Medicinal Plants of Uzbekistan," Medicine Publishing House, Tashkent – 1976, p. 3.
2. O. Ahmedov, A. Ergashev, A. Abzalov, M. Yulchiyeva, D. Mustafakulov. "Medicinal Plant Cultivation Technology," Tashkent, 2020.
3. Zen Saleh Ibrahim, Rahma Qayssar, Sara Sardar, Eman Jamal, Laza Saadi Mustafa Senjawi, Eron Sleman, Halo Fazil, Omji Porwal. "Zufo (Nepeta cataria L.): Recent Advances in Pharmacognosy, Cultivation, Chemical Composition, and Biological Activity," Department of Pharmacy, Tishk International University, Erbil, KRG, Iraq, August 2022.
4. Kit L. Chin, Yadong Qi, Mila Berhane, James E. Simon. "Biological Characteristics, Nutritional and Medicinal Value of Catnip, Nepeta cataria," Agricultural Research and Extension Center, April 2005.
5. Abdullayev, S.S., Mamadjonova, M., Khoshimov, A. "Nepeta L. Species and Their Composition," 2018.
6. https://semenagavrish.ru/articles/lekarstvennaya-gryadka-kotovnik/.

7. https://www.inaturalist.org/taxa/48622-Nepeta-cataria