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BIOECOLOGICAL CHARACTERISTIC AND USES OF *Spinacia tetrandra* Steven

©Maharramli A., *ORCID: 0009-0005-2426-8057, Nakhchivan State University, Nakhchivan, Azerbaijan, maharramliaydan28@gmail.com*
©Gasimov H., *ORCID: 0009-0009-4075-3297, Ph.D., Nakhchivan State University, Nakhchivan, Azerbaijan, hilalqasimov@ndu.edu.az*

БИОЭКОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА И ИСПОЛЬЗОВАНИЕ *Spinacia tetrandra* Steven

©Магеррамлы А. М., *ORCID: 0009-0005-2426-8057, Нахчыванский государственный университет, г. Нахчыван, Азербайджан, maharramliaydan28@gmail.com*
©Гасымов Х. З., *ORCID: 0009-0009-4075-3297, канд. биол. наук, Нахчыванский государственный университет, г. Нахчыван, Азербайджан, hilalqasimov@ndu.edu.az*

Abstract. The flora of Nakhchivan Autonomous Republic can be considered as a source of vegetable raw materials rich in herbal, medicinal, technical and, in general, biologically active substances. From this point of view, it is very important to study the modern state of wild vegetable plants in Nakhchivan MR biodiversity, to search for new opportunities and traditional ways of their use. In the article, biomorphological features and directions of use of *Spinacia tetrandra*, were investigated. Plant specimens are found in saline areas, sandy soils, roadsides and settlements. It spreads from plains to lower mountainous belts. Plant samples were collected from Gahab, Zeyneddin, Jamaldin etc. regions. It is usually used cooked. Spinach is used in the preparation of beetroot soup, soups and various vegetable dishes. Dried spinach is slightly inferior to meat in the amount of protein it contains. Spinach is used not only fresh, but also canned and frozen.

Аннотация. Флора Нахчыванской Автономной Республики может рассматриваться как источник растительного сырья, богатого растительными, лекарственными, техническими и в целом биологически активными веществами. С этой точки зрения очень важно изучить современное состояние биоразнообразия дикорастущих овощных растений Нахчыванской МР, искать новые возможности и традиционные способы их использования. В статье исследованы биоморфологические особенности и направления использования *Spinacia tetrandra* (шпината четырехтычинкового). Экземпляры растений встречаются на засоленных участках, песчаных почвах, обочинах дорог и населенных пунктах. Распространяется от равнин до нижних горных поясов. Образцы растений были собраны в Гахабском, Зейнеддинском, Джамалдинском и других районах. Обычно его используют в вареном виде. Шпинат используют при приготовлении свекольников, супов и различных овощных блюд. Сушеный шпинат немного уступает мясу по количеству содержащегося в нем белка. Шпинат используют не только свежий, но также консервированный и замороженный.

Keywords: wild vegetables, organic food, *Chenopodium album, Spinacia tetrandra.*

Ключевые слова: дикорастущие растения, натуральные продукты, марь белая, шпинат четырехтычинковый.

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Human society has been using wild vegetation since the beginning. Before agriculture, people subsisted on the bounty of nature. The vast majority of edible wild plants are wild vegetable plants. Thus, there are 5000 species of edible plants distributed in the world, of which 1200 species belonging to 78 families are vegetable plants: 59 families (861 species) belong to dicotyledons and 19 families (336 species) to monocotyledons. Of these vegetable plants, 700 species are wild, and 500 species are cultivated. The first information about wild vegetable plants was found in the Plant Studies book by Theophrastus, a Greek scientist living in the 4th century BC. They are mentioned in the works of ancient Greek philosophers and scientists, in the so-called Roman agricultural encyclopaedia of the 10th century "Geobotany" and in the works of the French scientists Decandolia and Bois. Safflower, which has been called a "wild vegetable" since antiquity, was cultivated in Rome and Greece, horsetail and blue clover in China and Japan, chives, clover and thyme in Germany [1].

Vegetables and medicinal plants distributed in the flora are being studied at the modern level by world scientists and new proposals for their utilization are being prepared. Due to its relevance, large scientific research work is being carried out in these directions, which attracts attention even today. There are 5,000 plant species in the flora of Azerbaijan, most of which are useful and widely used in various fields of the national economy. The flora of the Autonomous Republic can be considered as a source of plants rich in herbal, medicinal, technical and, in general, biologically active substances. From this point of view, it is very important to study the modern state of wild vegetable plants in Nakhchivan MR biodiversity, to search for new opportunities and traditional ways of their use.

Nakhchivan MR flora includes 3021 plant species, most of which are useful and can be widely used in various fields of the national economy. The flora of the Autonomous Republic can be considered as a source of plants rich in herbal, medicinal, technical and, in general, biologically active substances. From this point of view, it is very important to study the modern state of wild vegetable plants in Nakhchivan MR biodiversity, to search for new opportunities and traditional ways of their use. While studying the biodiversity of the region, numerous scientific studies have been conducted on populations, bioecological characteristics and traditional uses of some wild vegetable plants used in different seasons.

The main objective of the research is systematic analysis of wild vegetable plants belonging to the Chenopodiaceae family distributed in the flora of Nakhchivan Autonomous Republic, studying their bioecological characteristics and determining the possibilities of their use, as well as evaluating their populations. Wild vegetable plants belonging to Chenopodiaceae family distributed in different regions of the Autonomous Republic were taken as the object of research. During the research, visits were made to various regions of Nakhichevan MR, interviews were held with the people and the collected samples were analyzed. Research was carried out on the basis of classical, floristic and systematic methods, but a number of modern methods were also used [2].

Chenopodiaceae family are about 1400 species in this section. In the flora of Azerbaijan, 101 species belonging to 33 genera of the Chenopodiaceae family are distributed. Representatives are usually herbaceous plants, leaves are linear, rarely alternate, simple and sessile. Flowers are bisexual, rarely unisexual, anemophilous and entomophilous, collected in panicles in spikes and brooms. Inflorescences absent. The female consists of 3 fruit leaves, the ovary has a nest, a column and several nozzles. Fruits are like nuts. Species of the genus are found in saline areas, sandy soils, some species on clay slopes, weedy plants, roadsides and settlements. Many wild species are used as fodder, vegetables, dyes and medicinal plants. Representatives of the section are annual, perennial herbs or shrubs. According to our research, 12 species of wild vegetable plants belonging to 4 genera were identified in the flora of the autonomous republic (Table).

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Table

HARVESTING TIMES FOR THE UTILIZATION OF WILD VEGETABLE PLANTS OF THE Chenopodiaceae

Taxon name	*Used part*	*Collection time (months)*
Chenopodium album	Young shoots and leaves	IV-VI
Ch. urbicum	Young shoots and leaves	IV- V
Ch. rubrum	Young shoots and leaves	IV- V
Ch. polyspermum	Young shoots and leaves	IV- V
Ch. foliosum	Leaves, flowers and fruits of acacia	IV- V
Atriplex tatarica	Baby plants	IV- V
A. turcomanica	Baby plants	IV- V
A. hortensis L.	Baby plants	IV- V
Spinacia tetrandra	Baby plants	III- V
Salsola soda	Baby plants	IV- V
Suaeda altissima	Baby plants	IV- V
Salicornia europaea	Young shoots and leaves	IV- V

As a result of research, the parts of wild vegetable plants belonging to the family have been clarified and the harvest times for use have been determined. Based on literature materials and conducted research, we provide brief information about the properties of use of these plants [3]:

Spinacia L. Unisexual, dioecious, male flowers are collected in spike-like broom-shaped flower group, and female flowers are collected in flower axils. The female flowers are sessile and are covered with a 2-4-toothed compound covering of the inflorescence. 2 species of the genus are distributed in Azerbaijan and Nakhchivan MR.

Spinacia tetrandra Steven (shomu, somun, field spinach). It is an annual, glabrous plant with one or more stems rising from the root. Their stems are simple or branched, 10-40 cm high. The leaves are arranged in rosettes, long-stalked, horn-shaped, pinnately segmented, with blunt or sharp parts, rarely entire. Stem leaves are usually more divided in female representatives and have short petioles. In male representatives, the leaves are almost sessile. They cover half of the body, are broadly spherical, with smooth edges. Male flowers consist of 4 ovate petals and 4 long-stalked stamens. They are located in clusters. The panicles form a spike-shaped, apical cluster of widely spaced flowers. Female flowers are located in balls in the axils of both the stem and the stem leaves, and sometimes they are united with each other to form a (round) spiky fruit cluster [4].

They fall with the leaves. Ch. and m. III-V. They usually grow in clayey, slightly saline semideserts. It is spread from the plains to the lower mountainous belt. Plant samples Gahab, Zeynaddin, Jamaldin, etc. collected from the areas (Figure).

Chemical composition. The aerial parts of the plant contain vitamins A, B, C, D, K, mucilaginous substances, organic acids and derivatives, phenolic compounds and phytoalexins. In addition to vitamins and proteins, the plant also contains compounds of the elements calcium and fluorine [5].

Usage. Roasting, squeezing, etc. were prepared from it. It is usually used by cooking. Beetroot soup, soups and various vegetable dishes are prepared from it. Dried spinach is slightly inferior to meat in the amount of protein it contains. Spinach is used not only fresh, but also canned

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and frozen, so that the biologically active substances in it do not change. It can be harvested in April-Mays and in the last ten days of March when the weather is mild.

Figure. *Spinacia tetrandra* Steven

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