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Research Article

# SHOTARA CHEMICAL COMPOSITION OF (FUMARIA VAILLANTII LOISEL)

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**Nasiba H. Karshibayeva**
Researcher Jizzakh State Pedagogical University Uzbekistan

**Nozimakhon A. Shodiyeva**
Researcher Jizzakh State Pedagogical University, Uzbekistan

**Shakhlo M. Toshpulatova**
Researcher Jizzakh State Pedagogical University, Uzbekistan

**Zarina K. Ibragimova**
Researcher Jizzakh State Pedagogical University, Uzbekistan

## ABSTRACT

This article discusses the chemical composition of shotara (Fumaria vaillantii Loisel.).

## KEYWORDS

Chemical composition, shotara, Fumaria vaillantii Loisel.

## INTRODUCTION

Decree of the President of the Republic of Uzbekistan Shavkat Mirziyoyev dated 10.04.2020 No. ) and Resolution No. PQ-4901 dated 26.11.2020 (Measures related to expanding the scope of scientific research on the cultivation and processing of medicinal plants, the development of their seed production about) was signed. These decisions indicate that special attention was paid to medicinal plants. After all, our lush country grows many types of medicinal plants in its bosom.

## THE MAIN RESULTS AND FINDINGS

Shotara (Fumaria vaillantii Loisel), a member of the family of shotaras, contains the drug "Protopin hydrochloride" and is used in the pharmaceutical

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industry for liver diseases. Therefore, the bioecology of this species is being studied.

Shotara( Fumaria vaillantii Loisel.), Shotarato a family of friendsbelongs toone yearweed.Stemgrows upright, branchy, height 10-30cm.Leavesarranged in a row, divided into two pinnae, long banded.Flowerspink with purple tipsshingleto the bouquetcollected. Fruitsphericaloneseedednut.The root- read it. Blooms and seeds in April-July.LawnsIt's latein the fall, earlyin the springappears.in Central Asiaspread out. Lalmi and as a weedirrigatedcereal cropsbetweencottongrows in the fields. Also abandoned land,residences, road,ditchcollars, field edges,avenues,the gardenandin the vineyardsoccurs.

Chemical composition: Shotara contains organic acid, phenol, alkaloids 0.2-0.6%, additives 2.9%, tar 4.7%, vitamins C and K. The taste is peculiarly bitter.

Fumaria vaillantii, F. parviflora25 different alkaloids were isolated from different organs of the plant (Aliyev, 1967; Yunusov, 1981; Israilov, 1993). In addition, Fumaria species contain fumaric acid, glycosides, sweeteners, sugars, resinous, coloring essential oil and organic acids, as well as vitamin C from the leaves.

RK Aliyev (1960) determined that protopine, which is the most important among alkaloids in Fumaria L. species, is 0.06-0.19%, and F. parviflora contains 0.15-0.36% alkaloids, and F. vaillantiida contains 0.19-1.1%. SA Tarivediyeva (1958) stated that the chemical compounds, including alkaloids contained in the experiments, vary organically in accordance with the age of the plant, the population structure, and the seasons. Therefore, it was determined that the necessary chemical active substances contained in this plant accumulate in the vegetative organs of the plant, such as leaves, stems, and roots, and the period of preparation of raw materials is planned depending on the age of the plant and the season of the year. SA

**Table 1. Changes in the alkaloid content of representatives of the genus Fumaria L. during ontogeny.**

| **Shotara species** | **Vegetation periods and alkaloid content in %** | | |
|---|---|---|---|
| | Grass era | Flowering period (generative) | Fruiting |
| *Fumaria schleicheri* | 0.070 | 0.190 | 0.30 |
| *Fumaria parviflora* | 0.050 | 0.095 | 0.199 |
| *Fumaria vaillantii* | 0.030 | 0.090 | 0.120 |

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As can be seen from the table, the amount of alkaloid substances of the plant in all above-ground parts of shotara corresponds to the fruiting period. Therefore, it is considered appropriate to prepare shotara raw materials during the fruiting period. According to DARahimov et al. (1977) polygraphic studies, the composition and amount of protopine in F. vaillantii, which grows in Tashkent region, is 0.14; 0.12; 0.07; It was determined to be 0.13%. Astringent (double) substances are from 0.7% to 0.95% in the composition of shotara. F. vaillantii, which is used in the industry for tanning, contains sugar from 0.77% to 3.0%, and glucoside substances in F. parviflora are 0.022%. F. vaillantii is 0.014%. The fat content is almost the same in both types at 2.46-2.50.

**Table 2. Organic substances in the species of Shotara family. (in dry form, in %. According to the information received by N. Karshibayeva)**

| **Components** | ***F. vaillantii*lawn** | **F. parviflora lawn with small flowers** | **Authors** |
|---|---|---|---|
| **Total glucosides** | 0.014 | 0.022 | Aliyev RK |
| **Anthroglucosides** | - | - | Aliyev RK |
| **Bitter substance** | Bitter taste indicator 1:850 | Bitter taste indicator | Aliyev RK |
| **Additive** | Gr. at the expense of | According to Gr | Aliyev RK |
| **In volume style** | 0.70 | 1.2 | Aliyev RK |
| **Weight style** | 1.04 | 2.2 | Aliyev RK |
| **Dyestuff** | Red - bur<br>in yellow | Red | Aliyev RK 1953<br>Tariverdiyeva |

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| | | | |
|---|---|---|---|
| **Sugar substance** | 0.77-2.25<br>0.7-3 | | Aliyev RK 1960<br>Tariverdiyeva SA 1958 |
| **A) until ketosaccharide hydrolysis** | 2.3 | 2.23 | Aliyev RK 1949 |
| **After hydrolysis** | 2.26 | 2.74 | Aliyev RK 1960 |
| **B) Aldehydo sugar** | 0.63 | 0.68 | Aliyev RK 1960 |
| **Essential oil** | traces | Traces | Aliyev RK 1960 |
| **Fat substances** | 2.50 | 2.46 | Aliyev RK 1960 |
| **Resin substances** | 3.19 | 2.37 | Aliyev RK 1960 |
| **Titruemic acid** | 0.85 | 1.4 | Aliyev RK 1960 |
| **Without carotintora** | 52.2 mg% | 60.79mg% | Aliyev RK 1960 |
| **Dry** | 7.43mg% | 8.27mg% | Aliyev RK 1960 |
| **Vitamin K** | 0.56mg% | | Aliyev RK 1960 |

**Table 3. Shotara family (Fumaria L.) alkaloids**

| No | Components | *F. vaillantii* | Authors | *F. parviflora* | Authors |
|---|---|---|---|---|---|
| **1** | Alkaloids | 0.1-0.55 | Zolotnitskaya 1965 | 0.19-1.1 | Adilov 1962 |

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| | | | | | |
|---|---|---|---|---|---|
| **2** | Protopine C20 H26 NO5 | 0.06-0.19 | Shevelyova, 1970 | 0.08 | Govindochari 1958 |
| **3** | Fumaric acid | + | Wahid MA 1963 | | |
| **4** | Papaverine | + | Plekhanova 1975 | | |
| **5** | Fumaridine C23 H26 N2 O5 | 0.005-0.027 | Platonova 1956 | + | Israilov 1968 |
| **6** | da-girdastin | + | Ibragimova 1974 | - | |
| **7** | Fumaramine C21 H23 N2 O5 | + | Israilov 1970 | + | Israilov 1968 |
| **8** | Parfumidine | + | Kirjakov 1971 | + | Israilov 1970 |
| **9** | Adlumin | + | Israilov 1970 | | |
| **10** | Perfume | + | Israilov 1970 | + | Israilov 1970 |
| **11** | d- bicuculline | + | Ibragimova 1974 | | |
| **12** | I-Adlumin | + | -==- | | |
| **13** | Vaylantin- C20 H23 NO5 | + | -==- | | |
| **14** | Noryuphyrin- C17 H19 NO3 | + | Yunusov S. Yu. 1981 | | |
| **15** | Xylantifolin | + | Yunusov S. Yu. 1981 | | |
| **16** | d-stylopine | + | Yunusov S. Yu. 1981 | | |

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| | | | | | |
|---|---|---|---|---|---|
| | Stylopin | | | | |
| **17** | Oxymethylate | + | Yunusov S. Yu. 1981 | | |
| **18** | Cryptopine | + | Kirjakov 1971 | + | Israilov 1968 |
| **19** | Fumvaylin C20 H19 O6 N | 0.0007 | Platonova 1956 | | |
| **20** | Santivinarine C20 H14 NO4 | + | Silent 1969 | + | Silent 1977 |
| **21** | N-methyl hydrasteine | + | Forgaes R. 1975 | + | Forgaes R. 1975 |
| **22** | N-methyl hydrastine | + | Forgaes R. 1975 | + | Forgaes R. 1975 |
| **23** | N-methylaluminum C22 H24 NO6 | + | Israilov 1993 | | |
| **24** | Pallidin | + | Israilov 1993 | | |
| **25** | Norpallidin | + | Israilov 1993 | | |
| **26** | I-Adlumin | | | + | Israilov 1968 |
| **27** | Hydrastin C21 H21 NO6 | + | Israilov 1968 | + | Israilov 1968 |
| **28** | A degradable alkaloid | 0.072 | Aliyev RK 1960 | 0.079 | Aliyev RK 1960 |

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| | | | | | |
|---|---|---|---|---|---|
| **29** | N-oxin alkaloid forms | + | Aliyev RK 1960 | + | Aliyev RK 1960 |
| **30** | Glucoalkaloids | + | Aliyev RK 1960 | + | Aliyev RK 1960 |

In addition to these substances, vitamins are also found - vitamin "K" in the form of F. vaillantii - 0.56 mg%, F. parviflora - 0.66% mg. Vitamin "C" is 74.7 mg% in F. vaillantiida. (Tariverdiyeva, 1958; Aliyev, 1960).

Importance. Shotara warms the blood and dissolves blood clots. Eases breathing, improves stomach function, clears liver from congestion. Basicallythe leaves of the plant are picked and dried, but often all parts are used. The alkaloid contained in it slightly accelerates the pulse, intoxicates and stimulates the appetite. It is used in women's diseases, intestinal diseases, malaria, jaundice, uterine and pulmonary tuberculosis. It is used to treat chronic internal bleeding, abdominal pain and bronchitis.

## CONCLUSION

1. Shotara (Fumaria vaillantii Loisel), a member of the family of shotaras, contains the drug "Protopin hydrochloride" and is used in the pharmaceutical industry for liver diseases. Therefore, the bioecology of this species is being studied.
2. Chemical composition: Shotara contains organic acid, phenol, alkaloids 0.2-0.6%, additives 2.9%, tar 4.7%, vitamins C and K. The taste is peculiarly bitter.
3. 3.F. vaillantiithe content and amount of protopin in the type of the plant during fruiting, seed enrichment is 0.14; 0.12; 0.07; It was determined to be 0.13%.
4. F. vaillantii, which is used in the industry for skin care, contains sugar from 0.77% to 3.0%, and glucoside substances in F. parviflora are 0.022% and 0.014% in F. vaillantii. The fat content is almost the same in both types at 2.46-2.50.

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