
**PERSPECTIVE ESSENTIAL OIL PLANTS OF SURKHANDARYA REGION
(UZBEKISTAN)**

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ABSTRACT

*This article presents data on the content of essential oils in different organs and phases of the vegetation of plants *Achillea filipendulina* Lam., *Achillea arabica* Kotschy., *Mentha asiatica* Boriss., *Salvia sclarea* L., *Salviabucharica* M.Pop., *Origanum tyttanthum* Gontsch., *Perovskia scrophularifolia* Bng. , *Ziziphora brevicalyx* Juz., *Hyssopus zeravschanicus* (Dubj.) Pasij and *Atamantha macrophylla* (Rgl et Schmalh) Pimen.*

KEYWORDS: *Essential Oil Plants, Essential Oils, Hydrodistillation Method, Vegetation Phases, Asteraceae, Apiaceae, Lamiaceae, Mountains of the Hissar Range.*

INTRODUCTION

The total number of essential oil plants in the world flora ranges from 2500 to 3000 species [1–6]. More than 1100 plant species from 77 families are found in the flora of the CIS [7].

607 species of essential oil plants from 56 families grow in Uzbekistan, some of them (fennel, thyme, coriander, cumin, mint and others) have been introduced into culture. More than 300 species of wild essential oil plants grow in the conditions of the Surkhandarya region, the largest number of species rich in essential oil plants are the families Apiaceae (69 species), Lamiaceae (60 species), Asteraceae (60 species) [8]. The number of species studied in detail concerning the content and qualitative composition of essential oils depending on the vegetative phases of plant development is very scarce. We have studied the component composition of some species of these plants [9–11].

Experimental Part: The following wild-growing essential oil plants served as the material for the study:- *Achillea filipendulina* Lam., *Achillea arabica* Kotschy (Asteraceae), *Mentha asiatica* Boriss., *Salvia sclarea* L., *Salviabucharica* M.Pop., *Origanum tyttanthum* Gontsch., *Perovskia scrophularifolia* Bng., *Ziziphora brevicalyx* Juz., *Hyssopus zeravschanicus* (Dubj.) Pasij (Lamiaceae), *Atamantha macrophylla* (Rgl et Schmalh) Pimen. (Apiaceae) growing in the mountains of the Hissar Range (Pamir-Alay) in the vicinity of the village of Vakhshivar (1460-1600 m above sea level). The studies were carried out in May and June 2022. Herbarium samples of plants are stored in the herbarium of the Department of Botany of the Termez State Pedagogical Institute.

Essential oils from various organs of the studied plants were extracted by hydrodistillation in the apparatus of A.S. Ginzberg [12] from freshly harvested raw materials in different phases of vegetation. The distillation was carried out for 1.5-2 hours. The main amount (up to 80%) of essential oil from each sample was collected in the Ginsberg apparatus within 30-40 minutes after the start of boiling water in the flask.

The content of essential oils from different plant organs is given in the table below. As can be seen from the table, the bulk of the essential oils in the studied plants accumulate in the leaves and

inflorescences during the phase of mass flowering. Essential oils in the leaves of *Achillea arabica* and *Salvia sclarea* are contained in small quantities, and in the leaves of *Perovskiascrophularifolia* and *Salviabucharica* its amount is greater than in the inflorescences. In the aerial parts and leaves of *Salvia sclarea*, essential oils accumulate only in the phase of mass flowering.

Basically, the inflorescences of the studied plants are richer in essential oils than in other vegetative organs. Therefore, the collection of raw materials of the studied plants to obtain essential oils can serve as inflorescences in the phase of mass flowering. Essential oils can be used both in the perfumery, cosmetic and food industries, as well as in medicine.

TABLE THE CONTENT OF ESSENTIAL OILS (AS A PERCENTAGE OF WET WEIGHT) IN DIFFERENT ORGANS OF PLANTS IN THE PHASE OF VEGETATION AND MASS FLOWERING

Plants	Vegetative phase		Mass flowering phase		
	Aboveground part	Leaves	Aboveground part	Leaves	Inflorescences
<i>Achilleafilipendulina</i> Lam.	0.23	0.30	0.27	0.40	0.48
<i>Achillea arabica</i> Kotschy.	0.06	0.10	0.27	0.13	0.60
<i>Menthaasiatica</i> Boriss.	0.10	0.13	0.14	0.17	0.23
<i>Salvia sclarea</i> L.	traces	Traces	0.12	0.06	0.46
<i>Salvia bucharica</i> M.Pop.	0.12	0.18	0.15	0.24	0.05
<i>Origanum tyttanthum</i> Gontsch.	0.25	0.36	0.24	0.36	0.87
<i>Perovskiascrophularifolia</i> Bng.	0.54	0.68	0.51	0.71	0.65
<i>Ziziphora brevicalyx</i> Juz.	0.60	0.82	0.74	0.85	1.15
<i>Hyssopus zeravschanicus</i> (Dubj.) Pasij	0.61	0.78	0.63	0.75	0.90
<i>Atamantha macrophylla</i> (Rgl et Schmalh) Pimen.	0.29	0.39	0.74	0.61	1.10

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