



## Essential Oil Plants Growing in the Surkhandarya Region

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### ABSTRACT

The amount of essential oils collected from the surface, leaves and flowers of several types of essential oil plants growing in different phases in Surkhandarya region was determined. Compared to the amount of essential oils collected in the vegetative phase, it was found that the amount of essential oils is slightly more collected in the gross flowering phase.

In the above-ground parts of the plant: *Achillea filipendulina* Lam. - 0.27%, *Achillea arabica* Kotschy. - 0.27%, *Mentha asiatica* Boriss. - 0.14%, *Salvia sclarea* L. - 0,12%, *Salvia bucharica* M.Pop. - 0,15%, *Origanum tyttanthum* Gontsch. - 0.24%, *Perovskia scrophularifolia* Bng. - 0.51%, *Ziziphora brevicalyx* Juz. - 0.74%, *Hyssopus zeravschanicus* (Dubj.) Pasij. - 0.63%, *Atamantha macrophylla* (Rgl.et.Schmalh) Pimen. - 0.74% essential oils have been found to persist.

### Keywords:

Asteraceae, Lamiaceae, Apiaceae, flora, vegetative phases, coarse flowering phase, oils, Pamiro-Oloy, Ginsberg's apparatus, raw materials, perfumes, cosmetics, food, food products.

In the flora of the world, the total number of flowering plants is from 2,500 to 3,000, and in the flora of the CIS there are more than 1,100 plant species from 77 families [1-4]. In Uzbekistan, 607 species belonging to 56 families, more than 310 species of essential oil plants of 54 families grow wild in Surkhandarya region. Especially the families Apiaceae (69 species), Lamiaceae (60 species), Asteraceae (60 species) have been found to be rich in essential oil plant species [5]. In the literature, the number of data on the change of essential oils (and quality composition) in plants depending on the vegetative phases is very small 43. We studied the dynamics of accumulation of essential oils in various organs of some plants belonging to these families depending on the vegetative phases. The constituents of the essential oils of some

studied plant species have been previously studied by us [6-10]. As research materials, representatives of wild-growing essential oil plants belonging to the Asteraceae, Lamiaceae and Apiaceae families growing in the Hisortog range (Pamir-Aloy mountains, 1460-1600 m above sea level) were taken. The research was conducted in May and June 2022. Herbarium specimens of plants are stored in the herbarium of the Biology Department of Termiz State Pedagogical Institute. Essential oils were extracted from freshly collected wet mass of plants by hydrodistillation in A. S. Ginsberg's apparatus [10]. Essential oils were extracted from plants for 1.5-2 hours. Most of the essential oil in each sample (up to 80%) is collected in the Ginsberg apparatus within 30-40 minutes after boiling the water in the flask.

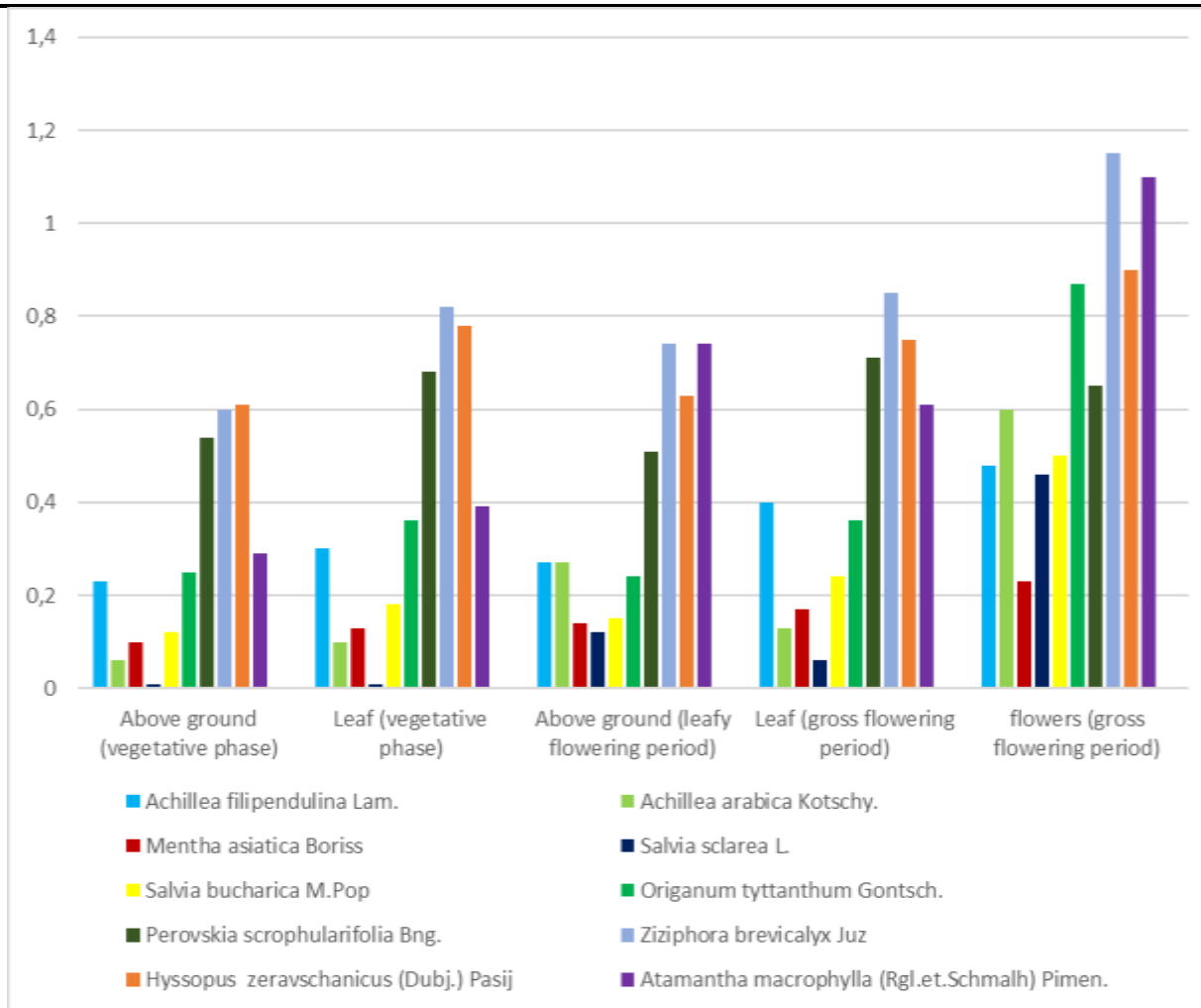


Table 1. The amount of essential oils collected in different organs and phases of the plant (in % of wet mass).

Information on essential oils extracted from different plant organs is presented in Table 1. In the studied plants, the main part of essential oils is collected in the leaves and flowers during the gross flowering period. The leaves of *Achillea Arabica Kotschy* and *Salvia sclarea L.* contain very little essential oils, while the leaves of *Rerovskia scrophularifolia Bng.* and *Salvia bucharica M. Pop.* contain much more essential oils compared to the flowers. was determined (table 1). Essential oils begin to accumulate in the above-ground part and leaves of the *Salvia sclarea* plant only in the phase of gross flowering (table 1). In the studied plants, essential oils are mostly collected in the inflorescence. For industrial use, the inflorescences of these plants can be collected as raw materials at the stage of gross flowering. Essential oils can be used in perfumery, cosmetics, food industry and

medicine. 1 table. Accumulation of essential oils in different organs of plants (percentages calculated from wet mass).

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