

## STUDY OF MORPHOLOGY AND ANATOMY OF THE HERB OF YELLOW AVENS (*GEUM ALEPPICUM* JACQ.)

Doroshenko S.R., Kozyra S.A., Kulagina M.A.

Scientific supervisor: Romanova S.V.

National University of Pharmacy, Kharkiv, Ukraine

kvdoroshenkofj@gmail.com

**Introduction.** *Geum aleppicum* Jacq. belongs to the *Rosaceae* family of the *Rosoideae* subfamily, grows on contaminated sites throughout the territory of Ukraine. It is used in traditional medicine as anti-inflammatory, antiemetic, choleric, analgesic, sedative, haemostatic and wound-healing remedy.

**Aim.** We conducted a morphological and anatomical study of the *Geum aleppicum* Jacq. herb in order to identify diagnostic features that can be used in the development of quality control methods for raw materials.

**Materials and methods.** Raw material like herb of *Geum aleppicum* Jacq., which was collected in 2019-2020 in Kharkiv region, Russian Tishki village were used for macro- and microscopic examination. The investigation was conducted according to generally accepted methods. The research was carried out using a microscope MBP-1, МБУ-6 and BB-2610, with 800x200 and 400 times increase, micropreparates were photographed with the digital camera Canon PoweShot SX20 IS and Canon LH-DC50. Photos were processed using «Adobe Photoshop CS6 Extended».

**Results and discussion.** *G. aleppicum* is a gemicryptophyte, mesophyte and mesotrophic plant with a thick and short rhizome. The stem is 40-80 cm tall, covered with rejected stiff hairs and leaves almost from the base; it gradually increases in diameter (from 3 to 6 mm) from top to base.

The shaped of the internode on transverse sections in the apical zone is rounded, in the middle part there are 2-3 strands of leaf traces, below there are 3-4 weakly expressed ribs and 4-5 significantly protruding ribs. Basal leaves are long-petiolate, lyrate, pinnately dissected or intermittently pinnately divided; lateral lobes 3-6 (8) pairs, they are wedge-shaped inverted ovate, incised-lobed and toothed, unequal: the lower lobes are small, and the upper lobe is large, rounded or broadly rounded triangular with a heart-shaped base; stem leaves are pinnately dissected or trifoliate, rarely trilobate, with elliptical or oblong lobes; stipules ovate, deeply incised, about 2,0-2,5 cm long.

Closing cells of the stomata are surrounded by 4-6 epidermal cells. Simple covering hairs are immersed in a slightly summed outlet, which consists of 8-10 cells with noticeable radial folds of the cuticle. In glandular hairs, the leg is elongated, cylindrical, with 2-3 living or dead cells located one above the other, slightly inclined. The head of the gland is unicellular, oval. Stem from apex to base gradually increases in diameter from 3,0 to 6,0 cm. The flowers are numerous, quite large (1,5-2,0 cm), on strong erect peduncles; outer sepals are linear-oblong, almost twice shorter and four times narrower ovate-triangular pointed inner; petals broadly inverted-ovate or almost rounded with a rounded base, golden-yellow, longer than the sepals; perianth densely covered with very short hairs, globular-ovate; fruits – achenes, pressed at the base hairy, on top with long stiff hairs. It blooms in June – July.

**Conclusions.** Thus, we establish the obtained data of morphological and anatomical features: the number of cell replacements, the morphology of simple and glandular hairs, and it can be used in the development of methods for quality control of raw materials.