

MICROSCOPICAL FEATURES OF LETTUCE LEAVES OF “LOLLO BIONDO” VARIETY

Korniienko V. V.

Scientific supervisor: assoc. prof. Gurieva I. G.

National University of Pharmacy, Kharkiv, Ukraine

irenegurieva@gmail.com

Introduction. Phytotherapy is a top-priority direction of modern healthcare which is extensively used in prophylaxis of acute and chronic disorders and improvement of the quality of life. Thus the search of new available sources of biologically active compounds is always of great interest.

Our attention was drawn to lettuce which is cultivated in a great number of varieties with different nutritive value. One of the most widely used lettuce varieties is “Lollo Biondo” which has large crunchy green leaves. Lettuce is known to contain high amounts of antioxidants such as phenolic acids and flavonoids, sesquiterpene lactones which might have moderate analgesic properties, and other groups of biologically active compounds that are essential for normal functioning of human body. Since identification of different lettuce varieties is challenging, it is important to carry out microscopical analysis of its plant material.

Aim. The purpose of the current study was to determine the microscopic features of fresh lettuce leaves of “Lollo Biondo” variety.

Materials and methods. The microscopical features were studied using Digital camera for microscope DCM 300” (USB 2,0) with resolution 3M pixels. The micropreparations were made from the margin of the leaf, its middle part and on the cross section.

Results and discussion. According to its anatomical structure the leaf is dorsiventral. The upper epidermis consists of small cells with thin sinuous or straight cell walls. The lower epidermal cells are smaller with sinuous cell walls. The epiremal cells along the veins are elongated with straight cell walls. The epidermal cells at the margins consist of small cells with wavy cell walls on the lower surface, while upper epidermal cells are mainly elongated. The leaf is amphistomatic. The stomatal apparatus is of anomocyte and anisocyte type, with anisocyte stomata prevailing on the upper epidermis, while the lower epiderm contains mainly anomocyte stomata surrounded by 4-5 cells. Vessel bundles contain spiral tracheids. The surface of younger leaves might contain trichomes – simple and glandular hairs.

Conclusions. The obtained data will be used at working out the standardization parameters and quality control methods for lettuce leaves of “Lollo Biondo” variety in future.