

MACRO- AND MICROSCOPICAL STUDY OF CANNA RHIZOMES

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Introduction. *Canna indica* L. (syn. *Canna edulis* Ker Gawl.) is a tropical herb belonging to the family *Cannaceae* – a monogeneric family comprising about 25 species. *Canna indica* was the first species of this genus introduced to Europe, which was imported from the East Indies, though the species originated from the America. The plant is now widely cultivated for its starchy, edible rhizomes, and many hybrids are cultivated in tropical and more temperate regions as ornamentals.

Canna rhizomes are proven to have antimicrobial and antioxidant activity. The plant material is widely used worldwide. Decoction of fresh rhizome is used as jaunditic symptoms: fevers, dropsy and dyspepsia. In the Philippines, decoction of rhizome used as diuretic, antipyretic. Macerated rhizomes are used to alleviate nose bleeds. In Thailand, rhizome has been used with other herbs for cancer treatment. In Costa-rica infusion of rhizomes is used as emollient. In Gabon the rhizome is used in enemas against dysentery and intestinal worms.

Aim of the research. The aim of our research was to carry out macro- and microscopical study of *Canna* lily rhizomes.

Materials and methods. The plant material was collected in October 2015 in Kharkiv region.

Results and discussion. Rhizomes are sympodial with Y-shaped axes and abundant roots growing both adaxially and abaxially from the nodes. Monopodial or stoloniferous rhizomes are less common. The plagiotropic axis after producing 5-6 nodes, curves its direction upwards to form the aerial plant. From the base of the last node an axillary bud restarts propagation by repeating the pattern. These “active” nodes can also produce up to three aerial branches, so three new plants grow very close to each other.

The transverse section of *Canna* rhizome has the following organization: epidermis, hypodermis, cortex, endodermis, pericycle, vascular plexus and central cylinder.

The epidermis cell walls are scarcely cutinized. Beneath the epidermis there is a three layered hypodermis, which exhibits cells with sub polygonal outline and thickened walls. The cortex is a relatively thin zone placed between the hypodermis and the endodermis. It is mainly composed by a parenchymatous tissue. It also reveals an outer ring of fibrous strands, many internally spread fibrovascular strands as well as foliar and root traces. Thus, the further studies on macro- and microscopical features of other *Canna* plant material will be carried out.