

PRELIMINARY PHYTOCHEMICAL STUDY OF CARROT ROOTS

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The carrot (*Daucus sativus* (Hoffm.) Roehl. = *Daucus carota* subsp. *sativus* (Hoffm.) Schubl. et G. Martens) belongs to the *Apiaceae* family. It is a biennial herbaceous plant. During the first year of vegetation carrot develops a rosette of leaves and, depending on the variety, a fusiform, long, elliptic, conical or cylindrical taproot of orange, red-orange, or rarely yellow, colour. Leaves are bi- or tetrapinnate, basal on long petioles, upper – sessile. Leaf segments are linear-lanceolate, lanceolate or spatulate. At the second year of vegetation the plant develops an erect stem branched on top with alternate leaves of the same form as the basal ones. Inflorescence is a compound umbel with 13-25 rays. The fruits are ribbed thorny schizocarps.

The chemical composition of carrot roots is not studied well enough, which is connected with the large number of varieties cultivated in Ukraine. Thus the aim of our research was the preliminary phytochemical study of carrot roots for the presence of polysaccharides and saponins.

The object of the research were the carrot roots collected in 2012-2014 in Rivne region. The plant material was air-dried under the shade.

The presence of polysaccharides was determined using the conventional qualitative tests. Polysaccharides were identified in the carrot roots water extract where 96% ethanol was added. Formation of the light-brown sediment confirmed the presence of polysaccharides in the plant material studied.

The presence of saponins was determined in the carrot roots 50% ethanol extract which was filtered after cooling and then evaporated on the water bath. The water extract obtained was used for the foam test and reactions with 10% lead acetate solution and barium hydroxide. The formation of foam and sediments with the abovementioned reagents allowed to identify saponins in the carrot roots.

Therefore, the conventional chemical tests allowed confirming the presence of polysaccharides (with 96% ethanol) and saponins (foam test, reactions with lead acetate and barium hydroxide) in the carrot roots.

The qualitative tests carried out have shown the abundant chemical composition of the plant material studied. This confirms the prospects and necessity of the further profound phytochemical study of carrot roots for the main classes of biologically active compounds.