For *Lymnaea stagnalis*, slightly different data were obtained. UBB – homology on nucleotide sequence – 82%, on amino acid sequence – 100%. UBC – homology on nucleotide sequence – 84%, on amino acid sequence – 100%. UBA52 – homology on nucleotide sequence – 82%, on amino acid sequence – 100%. RPS27A – nucleotide sequence homology – 80%, amino acid homology – 93%.

Conclusions. The homology of this enzyme by nucleotide sequences in humans and pulmonary freshwater mollusks is within 79-81 % (*Biomphalaria glabrata*) and 80-84% (*Lymnaea stagnalis*).

The practical significance of the high degree of homology of proteolytic enzymes in humans and freshwater lung mollusks justifies the formation of aquaculture of mollusks to obtain from their tissues protein enzymatic preparations of proteolytic action in the biopharmaceutical, cosmetic and food industries.

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JUNIPERUS COMMUNIS L. SEEDS MORPHOLOGY AND THEIR ANALYZE

Karina Ermalovich
VSU named after P.M. Masherov, Vitebsk, Belarus

Gymnosperms seeds have dense seed coat. A membranous structure – nucellus remainder – is situated under it. The remaining volume of the seed is occupied by the thelom gametophyte which had been transformed into the nutrient tissue and by the embryo which is located in a special chamber. The embryo consists of a root, a stalk, cotyledons and a bud. The embryo is connected with the nutrient tissue by a suspensior which departs from the embryo root [1].

There are various methods of studying the viability and internal structure of seeds: organoleptic (based on the external characteristics of the seeds), chemical (non-stratified seeds are stained with 0.05% indigo carmine aqueous solution),

accelerated germination (carried out in laboratory conditions). The "painless" methods of studying seeds are the method of X-rays and the external examination method [2]. V.I. Nekrasov wrote: “Radiography is one of the most perspective methods for the internal seeds structure studing, the endosperm and the embryo degree development. Without the analyzed material damage one can see not only the embryo and the endosperm structural features, but also the various development anomalies of their structural features presence in the X-rays photos” [3, p. 65]. Seeds X-rays photographing in one projection option has been developed in the world practice. The radiography equipment was taken from medicine [4].

The external inspection method gives us visual evalution of the seeds internal state. Healthy seeds are differ from another by a number of signs, such as weakness, underdevelopment, curvature, seed coat tarnishing, presence of different colors spots and ulcers on its surface [5].

Our aim is to study *Juniperus communis* freshly picked seeds using the external examination method and X- rays method.

Material and methods. The research material is the *Juniperus communis* seeds. The plant grows in the Nikolaevo village Shumilinsky district Vitebsk region (Figure 1).

Juniperus communis the third year juicy cones samples were collected from August till November 2018 once in a month. Triple repeating. Seeds were taken from the cones without seed coat damage (stratification), examined (magnification x3) and then exposed to X-rays. A green film with 1.8 silver deposit X-rays radiation was used.

08.08.2018 at 10:30 juicy cones were collected, seeds were studied on an Arman-1 X-ray apparatus, dose 80 kV, 1 Mas, 10 cm (1). On September 04, 2018, at 11:30, freshly collected seeds X-rays examination was performed on the same X-rays apparatus with a dose of 70 kV, 1 Mas, 15 cm (2). Subsequent studies were conducted on a Uniekspert3 + X-rays apparatus. 10.02.2018 at 10:00 the photo was taken with a dose of 40 kV, 1Mas, 10 cm (3). 11.06.2018 at 10:00 – the photo with a dose of 40 kV, 1Mas, 15 cm (4). Radiographic studies were performed at the Beshenkovichy Central Hospital under the supervision of N.N. Chernuho, an X-rays laboratory assistant.

Findings and their discussion. According to the external examination third year juicy cones seeds (Figure 2) are healthy, have a bluish coat. There weren’t find damage ulcers or spots on their surface. X-rays method has been used for checking the internal seeds state.

The first and second radiographic studies results (1,2) are black photos. Using of medical X-rays technology for seeds investigation probably is not so effective with such doses. These results could be obtained not only because of the X-rays exposure high dose, but also because of the Juniper seeds underdevelopment in the period from the first decade of August till the first decade of September. The result of the third and fourth studies (3.4) is clearly visible seeds in the photos, but the embryo has not visible contours.

Fig. 1 – *J. communis* in the Nikolaevo village

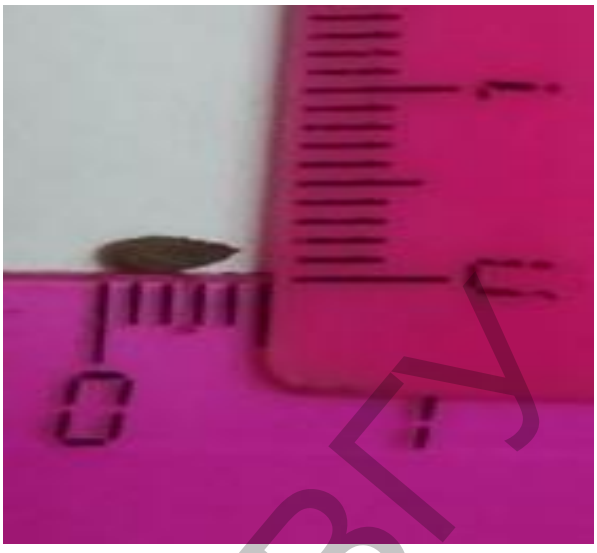

Fig. 2 – *J. communis* seed

Conclusion. The most perspective methods for *J. communis* seeds studying are the external examination method and soft rays radiography method because it allows us to examine the seeds without damage them. The external inspection method is the most accessible because it does not require an additional equipment. But we can't fully estimate the seeds.

There weren't differences between seeds have been taken from different sides of the horizont during the external examination. All seeds were healthy. The plant grows in apparently favorable conditions.

X-rays analysis as an additional method of controlling seeds quality allows us not only to obtain information about the internal properties of the test material without its damage, but also gives us opportunity to save the information in the form of a document (X-rays photos) [4].

The X-rays method can be used for studing the conifers. *Juniperus communis L.* embryo probably isn't underdeveloped during the time have been chosen for the study. Therefore it is not recorded on X-rays photographs. It was found that Juniper seeds are more clearly visible in the photos with X-rays exprosure dose decreasing.

Juniperus communis is a medical plant. Its juicy cones with seeds have anti-inflammatory and antimicrobial effects. Treatment with natural drugs becomes more popular in modern medicine. Therefore the external examination method and radiography method can be used in pharmacology as quality seeds indication methods.

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THE CONTENT OF THE ANTHRACENE COMPOUNDS IN THE LEAVES OF THE DANDELION, COLLECTED ON THE TERRITORY OF VITEBSK REGION

Natalia Fomicheva, Katerina Chernyavskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

In 2017, the Republic of Belarus developed and adopted the Strategy "Science and technology: 2018-2040". One of the most important directions of this Strategy in the field of Bioindustry is the development of technologies for obtaining economically valuable products based on plant raw materials, as well as the development of therapeutic and preventive drugs, functional products, children's and herodietic nutrition. To implement these directions, the chemical composition of wild plants, one of which is dandelion officinale (Taraxacum officinale), is studied [1]. The Pharmacopoeia of many countries, including the State Pharmacopoeia of the Republic of Belarus, contains information about the roots of dandelion. When harvesting dandelion roots, its aboveground part is discarded. In foreign medical practice, along with the underground, the above-ground part of this plant has also found wide application. In some countries, it is used for the manufacture of anti-inflammatory drugs and immunomodulators. There is evidence of the use of the aerial part of the dandelion in folk medicine in European countries [2, 3].

The aim is determination of the quantitative content of anthracene derivatives in dandelion leaves collected in the Glubokoye, Braslav and Vitebsk regions.

Material and methods. The material of the study was the leaves of dandelion collected during flowering in the spring of 2019 on the territory of Vitebsk, Glubokoye and Braslav districts of the Vitebsk region of the Republic of Belarus. 0.2 g of crushed dandelion leaves were placed in a flask with a capacity of 50 cm^3, dissolved in 10 cm^3 alcohol when heated in a water bath at 30-400°C. Cooled, filtered into a volumetric flask at 25 cm^3, brought the volume of the solution with alcohol to the mark, mixed. The optical density of the resulting solution was measured on a spectrophotometer at a wavelength of 590 nm, using acetone as the comparison solution.