



**YURCHAK**

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**OWNER OF THE DOCTOR OF AGRICULTURAL SCIENCES  
L.D. YURCHAK IN DEVELOPMENT OF DOMESTIC SCIENCE  
OF THE ALLELOPATHY**

**Summary**

In August 2017, it would have been 80 years since the birth of Dr. L.D. Yurchak – a scientist who, in the early 60-s. XX century stood at the forefront of new scientific research in the field of allelopathy (chemical interaction of plants) in Ukraine as a separate branch of natural science.

Working for 45 years (1965–2010) in the National Botanical Garden named after M.M. Grishko of the National Academy of Sciences of Ukraine (NBS named after M.M. Grishko of the National Academy of Sciences of Ukraine), L.D. Yurchak endeavors to assert scientific notions of allelopathy. In their studies, attention was paid to the ecological bases of chemical interaction of plants in different types of phytocoenoses, determined the role of microorganisms in soil in crops under different types of crops, which today is especially relevant and contributes to increasing the soil fertility and increasing the volume of production of high quality crop production.

The basic methods and principles of scientific knowledge used in writing the article, namely: on the general principles of scientific, historicism, objectivity and continuity are described; methods of source-study and terminological analysis, problem-chronological, biographical, comparative-historical, method of oral history, etc. are used in complex. When illuminating the development of the doctrine of chemical interaction of plants, the principles of integrity and systemicity, objectivity and comprehensiveness of the topic coverage were taken into account, taking into account important concepts in the conceptual development plan of the scientists, theoretical conclusions and generalizations that contributed to the comprehension and formation of the main scientific provisions of the study.

L.D. Yurchak (Pilipenko) was born on August 23, 1937 in the city of Kansk, Krasnoyarsk Territory (RSFSR). The primary basis for future scientific achievements was formed by her family, and later the period of studying at the Kyiv State University named after T.G. Shevchenko (1955–1960) contributed to the final formation of the personality.

After graduating from the university, according to the distribution of L.D. Yurchak was sent to work as a senior laboratory assistant at the Department of Plant Physiology at the Botanical Institute (hereinafter referred to as M.G. Kholodny) of the Academy of Sciences of the USSR, where the group of allelopathy was formed, led by SPS A.M. Grodzinsky. It was here, in the early 60's of the last century, that the foundations of the new scientific direction in Ukraine, namely, allelopathies, were laid, and for the young specialist, L.D. Yurchak began his scientific life. Communication with the academic center of the Institute of Botany (A.G. Goncharov, M.F. Makarevich, K.M. Sitnik, L.O. Eynor and many others), in which L.D. Yurchak began his scientific activity, as well as intensive research work on the study of allelopathy positively influenced the formation of the scientific outlook of the future scientist.

Allelopathy as a separate scientific direction in the scientific circles of the Botanical Institute was initially perceived skeptically and did not gain proper support from the scientific community. In view of this, young scientists led by

A.M. Grodzinsky, with perseverance and perseverance, started to work. L.D. Yurchak was a co-developer of one of the first and universal methods in allelopathy, a biological test for germination of seeds, which was widely used in planting practice – «Biological method for the determination of phytotoxic substances using germinating seeds» (1962).

In May 1965, in connection with the appointment of A.M. Grodzinsky Director of the CRBS of the Academy of Sciences of the USSR, the group of allelopathies was transferred to this institution to the Department of Ecology and Plant Physiology (since 1983 – the Department of Allelopathy), where L.D. Yurchak worked in such well-known scholars in the field of an alopecia as Doctor of Biology, professor E.A. Golovko; Doctor of Biology, Professor P.A. Moroz; Ph.D. G.P. Bogdan; Ph.D. N.N. Dzyubenko; Ph.D. G.P. Kushnir; Ph.D. N.O. Prutenskaya and others. Collaboration with designated scientists, led by a teacher and mentor A.M. Grodzinsky contributed to the further development and confirmation of the person's views and scientific preferences of the scientist.

Soon A.M. Grodzinsky directs the scientific interests of L.D. Yurchak on the study of the role of microorganisms in interspecific relationships of phytocoenoses, according to the results of which L.D. Yurchak defended his dissertation for obtaining a scientific degree of the candidate of biological sciences «Physiologically active substances of sideral lupine and the accompanying microflora» (1971).

In the course of the implementation of the dissertation work for obtaining a scientific degree of the candidate of biological sciences L.D. Yurchak developed and tested the method of determining the phytotoxic properties of soil micromycetes on plant and microbial tests (1971). After protecting she Ph.D., the scientist was in the future engaged in the problem of lupine secretion by studying volatile substances that were formed when lupine was digested.

During 1975–1980, the researcher studied the chemical interaction of plants of field and fodder crops. Actively carried out experimental research on the problem of reducing the effect of soil under these crops, rational use of fertilizers, as well as clarifying the role of plant excrements in soil toxicity.

During 1980–1990, L.D. Yurchak studied the allelopathic properties of various types of phytocoenoses. Investigated the introduction of fodder cultures as siderates and the results of research, the scientist stated the frequency of formation of rot residues and associated microflora of allelopathic active substances of phytotoxic and phyto-stimulating nature.

In the study of allelopathic processes occurring during ontogenesis under flower cultures L.D. Yurchak revealed an indirect factor affecting the chemical relationship of plants in phytocoenoses. They revealed a specific microflora that could develop during a significant period of exploitation of the land under monoculture, as well as causing soil toxicosis as a result of the high biosynthetic activity of its individual representatives.

On the example of aromatic plants, the researcher comprehensively substantiated the ecological approach in solving urgent problems of agriculture: the formation of effective crop rotation, the selection of tolerant crops in compatible crops, reduction of the effect of ground-level, control of the structure and functions of soil microcenosis, etc. L.D. Yurchak popularized the scientific agri-ecological principles as the basis of alternative agriculture – agricultural alelopathy. Academician first raised the issue of the study of aromatic plants in the system of their relationship with other organisms; revealed the reasons for ground plants under aromatic plants and suggested ways to overcome it.

***Key words:*** *chemical interaction of plants, allelopathy, ecology, L.D. Yurchak, aromatic plants, microorganisms, ground-level plants.*