

## INFORMATION NOTE

### DEPARTMENT OF MYCOLOGY AND PLANT RESISTANCE

Department of Mycology and Plant Resistance has been founded in 1993 on the basis of similarly-named specialization that existed from 1925 year. The Department qualifies Bachelors and Masters in biology with specialization "Mycology and Plant Resistance" by means of resident programme and distance learning. To date, it is the only department in the Ukrainian higher education system that qualifies mycologists.

**Graduates of the Department are able to work** in mycological, phytopathological and microbiological laboratories, in the field of crop production and plant protection, in the food and pharmaceutical industry, biotechnology companies that use fungi cultivation, in environmental monitoring and plant quarantine services, research institutes of biology and medical fields; provide teaching activities in educational institutions.

In Kharkiv research of fungi was started immediately after the university was founded. Therefore, mycological school of Kharkiv has a 200-year history. Beginning from Franz Delavigne (1767-1826), such outstanding mycologists and phytopathologists as V.M. Chernyaev, M.V. Sorokin, L.S. Tsenkovskyy, A.O. Potebnya, T.D. Strakhov, T.V. Yaroshenko and others worked at the Department.

**Department staff:** the Department is headed by Dr. (Biology) Shamrai S.M. Staff includes one Dr. Hab. (Prof. Shkorbatov Y.G.) and three PhD's (Dr. Shamrai S.M., Associate Professor, Dr. O. Akulov, Associate Professor Dr. Usichenko A.S., Associate Professor), among them one has the honorable distinction – the Honoured Teacher of Ukraine. The department traditionally holds a high position in the general university department ranking and first places among the faculty departments.

Department of Mycology and fitoimunolohiyi was founded in 1993 based on the specialization of the same name that existed from 1925. Department trains bachelors and masters in biology with specialization "Mycology and fitoimunolohiya" for full-time and distance learning. So far, the only system of higher education in Ukraine department that prepares mycologists.

Graduates can work in mycological, Phytopathological and microbiological laboratories, crop and plant protection from diseases in the food and pharmaceutical industry, biotech companies that use culture fungi in services for environmental monitoring and quarantine of plants, research institutes biological and health trends; engage in teaching in schools.

Over the past five years graduates of the Department holded one Doctor Habilitatus and seven PhD theses on specialties "Mycology", "Plant Pathology", "Biotechnology" and "Genetics".

The department cooperates with institutions subordinated to the National Academy of Sciences of Ukraine and the National Academy of Agricultural Sciences. It has four branches: at the M.G. Kholodny Institute of Botany NASU, Ukrainian Research Institute of Forestry NAAS, Plant Production Institute nd. a. V. Ya. Yuryev of NAAS and the Institute of Vegetables and Melons UAAS. Branches are used as the basis for student practices and working on Master's thesis.

Mycological Herbarium (funharyi) CWU (Myc) is the part of the Scientific Herbarium of V.N. Karazin Kharkiv National University. It was created in 1825 by outstanding Kharkiv botanist and mycologist V.M. Chernyaev. It is the oldest scientific herbarium collection of

fungi in Ukraine, which now includes about 40,000 samples. Herbarium is listed in the World herbaria list «Index Herbariorum» and is a National Treasure of Ukraine.

Over the past two years the Department staff were issued textbooks for Universities approved by Ministry of Education and Science ("General mycology" and "Floristic analysis in mycology"); 4 textbooks for high schools: "Slime molds", "Fundamentals of general taxonomy", "Principles of field research" and "Basics of Medical Mycology" and 3 guidelines for universities. Department staff also prepared a set of multimedia training materials for all general and most of special courses.

**Main scientific fields of the Department:** biodiversity, systematics of fungi, fungal ecology, plant pathology, plant immunity, medical and veterinary mycology, mycotoxins, research of destructor fungi, material protection from damage, industrial cultivation of macro- and microscopic fungi, and fungal biotechnology. Department employees are actively involved in international research projects. Research work is carried out in collaboration with mycologists and plant pathologists from world leading research centers from 25 countries (Austria, Belarus, Belgium, Israel, Italy, Spain, Canada, China, Netherlands, Norway, South Africa, Poland, Russia, Slovenia, USA, Taiwan, Ukraine, Finland, France, Czech Republic, Sweden, Estonia and Japan).

In recent years the Department carries out the intensive mycobiota research in different regions of Ukraine and other countries. These studies cover a number of protected areas in Ukraine. As a result about 1000 species new for Ukraine have been found and a few new for science species have been described. In accordance with the scientific results obtained by employees of the department a "Provisional list of Aphyllorphoroid fungi of Ukraine", monograph "Fungi of Natural Reserves and National Parks of Left-Bank Ukraine" in two volumes, as well as a new edition of "Red Book of Ukraine" were issued

The department pays a great attention to occupational guidance for prospective students and working with talented youth. In particular, 11 textbooks for secondary schools approved by MES were prepared. Young educatees of the department took prizes at International competitions in ecology and mycology, National Biology Olympiads, All-Ukrainian Research Paper Defense Competition of the Minor Academy of Sciences, All-Ukraine Tournament of young biologists, I.I. Mechnikov chemical and biological tournament, and after graduation continue studying at the Department of Mycology and Plant Resistance in V.N. Karazin Kharkiv National University.

№	Discipline	Lecturer
<b>Bachelors</b> <b>GENERAL DISCIPLINES</b>		
	Virusology	Dr. Shamray S.M., Head of Department, Associated Professor
	Soil science	Dr. Usicheko A.S., Associated Professor
	Applied mycology	Dr. Akulov O. Yu., Associated Professor
	Section «Plant immunology» of «Immunology» course	Dr. Akulov O. Yu., Associated Professor
<b>OPTIONAL DISCIPLINES</b> <b>Special courses and special practical courses</b>		
	Subject and methods of investigation in mycology and plant pathology	Dr. Akulov O. Yu., Associated Professor
	General and agricultural plant pathology	Dr. Akulov O. Yu., Associated Professor
	General mycology	Dr. Usicheko A.S., Associated Professor
	Molecular bases of plant immunity	Dr. Shamray S.M., Head of Department, Associated Professor
	Plant protection	Dr. Usicheko A.S., Associated Professor
	Systematics of fungi	Dr. Akulov O. Yu., Associated Professor
	Methods of field research	Dr. Shamray S.M., Head of Department, Associated Professor
	Forest plant pathology	Dr. Usicheko A.S., Associated Professor
	Genetics of Fungi	Dr. hab. Shkorbatov Yu. G., Professor
	Plant Quarantine	Prilutsky O.V., Assistant Professor
	Diagnostic of plant diseases	Yatsuk I.I., Assistant Professor
	Methods of experimental mycology	Nedilko O.P., Senior Professor
	Methods of plant pathological studies of fungi	Dr. Usicheko A.S., Associated Professor
	Industrial mushroom cultivation	Yatsuk I.I., Assistant Professor
	Biodiversity and conservation of fungi	Prilutsky O.V., Assistant Professor
<b>Magisters</b> <b>OPTIONAL DISCIPLINES</b> <b>Special courses and special practical courses</b>		
	Teaching methods in higher school	Prilutsky O.V., Assistant Professor
	Methods and management of scientific research	Dr. Akulov O. Yu., Associated Professor
	Methods and management of scientific research. Professional safety.	Prilutsky O.V., Assistant Professor
	Microbiological toxicology	Dr. Akulov O. Yu., Associated Professor
	Biological corrosion of materials	Nedilko O.P., Senior Professor
	Methods of spatial analysis in mycology	Yatsuk I.I., Assistant Professor
	Physiology of fungi	Yatsuk I.I., Assistant Professor
	Methods of systematics of fungi	Dr. Akulov O. Yu., Associated Professor
	Cytological Morphology of Fungi	Dr. hab. Shkorbatov Yu. G., Professor