

Separation, Purification and Measuring Enzyme and Cell Organelle Activity

1. Lecturer: Tymoshenko Volodymyr Fedorovych, associate professor of the department of plant and microorganism physiology and biochemistry.
2. Status: optional for bachelors.
3. Course, semester: 4th academic year, 8th semester.
4. Number of credits – 4, general academic hours – 144, labs – 80; self-study – 64.
5. Preliminary requirements: basics of Biochemistry, Plant Physiology and Biochemistry
6. Description of the course: special lab practice provides knowledge and skills of separation, purification of enzymes and organelles as well as measuring their activities; after the course students should learn how to carry out a research work, gain practical skills in the selection and treatment of cell organelles and enzymes, and the study of physiological and biochemical processes in plant cells.

Parts: 1) an extraction and measurement of enzyme activities; 2) an isolation and purification of plant cell organelles and measuring their activities.

Knowledge and skills:

- knowledge of carrying out a laboratory work;
 - knowledge of methods of isolation and purification of enzymes and cell organelles;
 - knowledge of methods of determining the activity of enzymes that are analyzed in the research work of the Department;
 - skills to organize work in the laboratory, choose the best method to prepare and carry out an experiment and analyze the results.
7. Course organization, forms of control: writing tests, laboratory classes, writing final test.
 8. Educational and methodological support: program, work plan, educational and scientific literature, laboratory equipment and reagents.
 9. Language of teaching: Ukrainian.

References:

1. *Ермаков А.И.* Методы биохимического исследования растений. – Л.: Агропромиздат, 1987. – 430 с.
2. *Землянухин А.А.* Большой практикум по физиологии и биохимии растений. – Воронеж: Изд-во Воронежского ун-та, 1996. – 186 с.
3. *Молекулярно-генетические и биохимические методы в современной биологии растений / под ред. Вл.В. Кузнецова, Г.А. Романова.* – М.: БИНОМ. Лаборатория знаний, 2012. – 487 с.
4. *Остерман Л.А.* Хроматография белков и нуклеиновых кислот. – М.: Наука, 1985. – 536с.
5. *Пустовалова Л.М.* Практикум по биохимии. – Ростов-на-Дону: Феникс, 1999. – 541 с.
6. *Чиркин А.А.* Практикум по биохимии. – Минск: Новое знание, 2002. – 512 с.