

Phytohormones

1. Lecturer: Yuhno Yuliya Yuriyivna, senior lecturer of the department of plant and microorganism physiology and biochemistry.
2. Status: optional for masters.
3. Course, semester: 1th academic year, 2th semester.
4. Number of credits – 3, general academic hours – 90, lectures – 25; seminars – 11; self-study – 57.
5. Preliminary requirements: basics of Biochemistry, Genetics, Molecular Biology, Plant Physiology and Biochemistry, Cytology, Plant Anatomy
6. Description of the course: the course "Phytohormones" is integrative. The course deals with plant growth and development regulation by means of phytohormones and their role in the system of plant regulation. We consider molecular structure, metabolism, transport, physiological action of these compounds at certain stages of plant ontogenesis. The course presents the current understanding of the mechanisms of plant hormone reception and transmission of hormonal signals into the cells. A specialist who mastered this course acquires skills in the current understanding of the hormonal system of plants and ability to apply theoretical knowledge to analyze the physiological condition of plants and processes that occur in them.

Sections: A role of phytohormones in plant life. Auxin. Cytokinins. Gibberellin. Abscisic acid. Ethylene. Brassinosteroids. Jasmonic acid. Polypeptide hormones. Other plant growth regulators.

Knowledge and skills:

- knowledge of criteria of phytohormones nature and their role in the regulatory system of plants;
 - knowledge of the metabolism of the major groups of plant growth regulators;
 - knowledge of mechanisms of hormone cell reception and transmission of signals into the cell;
 - knowledge of the structure of artificial analogues of phytohormones and their practical application;
 - ability to analyze the physiological and biochemical experiments on the basis of the knowledge of the structure, metabolism and physiological effects of phytohormones.
7. Course organization: lectures, seminars. Forms of control: tests, reports, exam.
 8. Language: Ukrainian.
 9. Educational and methodological support: program, schedule of classes, educational and multimedia presentations, methodical complex, lecture presentations.

Studentbooks:

1. *Джамеев В. Ю.* Механізми рецепції та внутрішньоклітинного сигналіngu у рослин: навчальний посібник / В. Ю. Джамеев. — Х. : ХНУ імені В.Н. Каразіна, 2016. — 208 с.
2. *Джамеев В. Ю.* Внутриклеточный сигналинг у растений: учебное пособие / В. Ю. Джамеев. — Х. : АССА, 2015. — 224 с.
3. *Дерфлинг К.* Гормоны растений. Системный подход / Пер. с нем.. – М.: Мир, 1985. –304 с.
4. *Колупаев Ю. Е.* Формирование адаптивных реакций растений на действие абиотических стрессоров / Ю. Е. Колупаев, Ю. В. Карпец. — К.: Основа, 2010. — 352 с.
5. *Тарчевский И. А.* Сигнальные системы клеток растений. — М. : Наука, 2002. — 294 с.
6. *Кулаева О. Н.* Восприятие и преобразование гормонального сигнала у растений. К материалам международного симпозиума // Физиология растений. — 1995. — Т. 42, №5. — С. 661-671.
7. *Медведев С. С.* Физиология растений: учебник. — СПб. : БХВ-Петербург, 2012. — 512 с.: ил. — (Учебная литература для вузов)
8. *Медведев С.С., Шарова Е.И.* Биология развития растений. В 2-х томах. Т.1. Начала биологии развития растений. Фитогормоны: Учебник. – СПб.: Издательство С.- Петерб. ун-та, 2011. – 253с.