

NH03046: PRINCIPLES AND METHODS OF PLANT BREEDING

CREDIT: 2 (THEORY: 1.5; PRACTICE: 0.5)

COURSE OBJECTIVES:

- The course provides learners with knowledge to explain the principles and meanings of plant breeding methods for different groups of plants.
- The course trains learners in skills and methods of material evaluation, evaluation and selection after hybridization on each segregating generation in specific plant groups; in use of specialized equipment and tools in plant breeding; and in planning a simple breeding program.
- The course helps learners to be conscious and proactive in lifelong learning, searching and accumulating professional knowledge on plant science and breeding



Course objectives	COURSE EXPECTED LEARNING OUTCOME (CELOs)	EXPECTED LEARNING OUTCOME OF PROGAME (ELOs)
Knowledge		
CELO 1	Apply knowledge on plant reproductive system and law of heredity to identify methods for creation of genetic variation and selection for some crop groups.	ELO3
CELO 2	Apply new technologies of biotechnology in breeding programs for time-saving and increase in selection efficiency	ELO3
Skills		
CELO 3	Successfully conduct material evaluation, hybridization, evaluation of segregating population and selection for specific crops.	ELO6
CELO 4	Present logically about biotechnology application in plant breeding	ELO6
Ethics and Attitudes		
CELO 5	Show proactive attitude in learning and accumulating knowledge and basic skills in plant breeding.	ELO15

LEARNING METHODS

- Read course materials and references, ask questions
- Attend lectures, discuss and work in groups
- Do homework, specialized reports
- Attend all practices and write report
- Use E-learning for discussion and access to materials

ASSESSMENT METHODS

- Score scale: 10
- Formative assessment: Rubric 1. Class participation (10%); Rubric 2. Presentation/Assignment/ Mid-term exam: 20%; Rubric 3. Practice: 20%
- Summative assessment: Rubric 4. Final exam (50%)



LEARNING CONTENT

The course includes the following contents: Concept and status of plant breeding; The operations and steps of a breeding program include 1 – Determining the goals of breeding improvement, 2 – Collecting and using suitable genetic materials, 3 – Inducing variation through hybridization and mutation, 4 – Selection methods on propagative plants, self-pollinated and cross-pollinated plants; Breeding methods on heterosis on self-pollinated and cross-pollinated plants; Evaluation, recognition and release of new varieties for production.

LECTURERS

- Lecturer in charge: Nguyễn Tuấn Anh – Dept. Plant genetics and Breeding; Email: tuanahgct47@gmail.com
- List of other lecturers: Vũ Thị Thu Hiền (Email: vuhaihou@yahoo.com); Trần Văn Quang (tvquang@vnua.edu.vn); Vũ Thị Thúy Hằng (vtthang.nh@vnua.edu.vn); Đoàn Thu Thủy (doanthuycgct@gmail.com);