Project title	**New Professional Diploma in Plant Clinic and Phytosanitary Technologies (PRO-DPCP)**
Project No	**609550-EPP-1-2019-1-BG-EPPKA2-CBHE-JP**
Work Package	**WP4 – Development of the curriculum**
Task 4.4.	**TEACHING RESOURCE PLATFORM DEVELOPED AND WEB ACCESS**
Dissemination level	**Internal**

Outcome	**4.4**	
Title	**Development of teaching resource platform**	
Type	☒ Teaching material ☐ Learning material ☒ Training material	☐ Event ☒ Report ☒ Service/Product
Description	**Description of task:** The resource platform to be established as one of the main activities. **The functions of that platform will be mainly for:** •Collecting teaching resources developed in this project •Publishing the resources on a website •Giving free access to these resources for all, esp. project consortium members, students, members of network, contracted other interested institutions and individuals. •Support feedback and evaluation of teaching resources •Testing of the resources for scientific accuracy. •Forwarding of the suggestions for improvements to the respective authors that emerged from the testing. •Adaptation of the resources. •Correction of the updated regular course texts and multimedia. P**repare and write courses syllabi and contents** – Professor will, develop appropriate curricula, syllabi; course outlines and defines the number of ECTS and workload for each course relevant to the new Program Diploma. - Developing curriculum, syllabi and introducing them to new teaching techniques. - During early year 2, this workshop will be held at P8 (**SVU-EG)** dedicated to modular approach to curricula writing distribution and assignments for joint work among partners. The project website will contain necessary materials prior to the workshop and will allow the workshop participants to be involved in follow-up discussions. The e-learning developers in cooperation with academic staff will produce the teaching materials in digital form to be pooled in online reservoir server to serve the all the partners in the PRO-PDCP program Network. **INPUTS**: academic senior staff from each partner PC universities+ 3 EU acad. Staff from BG, IT and HU Course cost =20 course x 30 days x 3 hrs/course 14 technical e-learning developers 3 months **Venue:** South Valley University (SVU) Egypt, workshop/3days	
Due date	2nd week of M11	

The development of the teaching resource platform was first discussed at a project meeting held on 8-9 September 2021 at Alexandria University (P6) and then by the project teams at each EG partner.

The Teaching resource platform has been developed for supporting the stakeholders and students to find enough information about the education and learning process as well as all the activities, outputs and deliverables of the project at the project website: https://diplomaplantclinic.eu/project-area/outcomes/achieved-outcomes-deliverable/

EU together with EG partner universities prepared teaching materials and provided additional readings which were uploaded on the project website in the Project repository. Only project partners have authorized access to the project repository. Each partner may download the teaching materials and upload them (share) in the university teaching platform.

As part of this activity, the professors had to write courses' syllabi and contents after the approval of the DPCP curriculum together with the course outlines and defined number of ECTS and workload. A Template for preparing the course syllabus was approved and used.

The e-learning developers in cooperation with academic staff prepared the teaching materials in digital form to be pooled in online platform and to serve all the partners in the PRO-PDCP program Network.
At a National PRO-DPCP meeting in Hurghada (25 June 2023) it was agreed that each EG partner should upload the DPCP program teaching materials on its university's teaching platform where the teaching materials could be accessed by each student.

Examples of the courses are involved below. For further information please see the website of the project: https://sci.sohag-univ.edu.eg/main/?page_id=38103

Examples of the courses	
Course title: Diagnosis of Plant Viruses Course	
Co-funded by the Erasmus+ Programme of the European Union **Diagnosis of Plant Viruses Course** **Virus morphology and structure** The biology of virology focuses on the nature of viruses and their interactions with hosts. The development of the physical and chemical sciences was essential to this field. The history of virology as a field of study is very recent. Since the publication by Dmitri Ivanovsky in 1892 of a non-bacterial disease affecting tobacco plants and Martinus Beijerinck's discovery of the tobacco mosaic virus in 1898. Although there are millions of different species of viruses, only about 5,000 have been thoroughly documented. Viral organisms can be found in practically every environment on earth. Everywhere, on various surfaces, in biological fluids, and in the air, at temperatures ranging from below 0°C to above 30°C, viral particles can be found. Small infectious agents called viruses can only reproduce inside the live cells of other creatures.	Co-funded by the Erasmus+ Programme of the European Union **Diagnosis of Plant Viruses Course** **Reaction of viruses toward physical and chemical agents** • An average of 10-16% loss of crop production, equivalent to half a billion tonnes of food, occurs every year due to plant diseases (Oerke, 2006). Hence, the control of plant diseases is essential for sustainable food production (Strange and Scott 2005). Selective breeding for the development of resistant varieties and application of agro-chemicals is common but has limitations. • Large-scale application of chemicals to crops causes environmental pollution (Dhananjayan et al. 2020). • Moreover, the overuse of resistant varieties and chemical formulations on plants induce the breakdown of disease resistance with risk of emergence of new races of pathogens (Jørgensen et al. 2017).

Diagnosis of Plant Viruses Course

Main Symptoms of Viral Diseases

- Symptoms are the visible characteristics on the plants due to deviation the plant from the normal physiological, biochemical and biological function. They are resulting from biotic or abiotic factors, viruses are one among biotic factors that can cause deviation the plant from the normal state.
- The majority of viral names are derived from the particular host symptoms that they cause. Although symptoms on diseased plants are a simple way to identify viral diseases, they are not a reliable indicator because symptoms brought on by virus infection can occasionally resemble those brought on by other pathogens, mutations, nutrient deficiencies, physiological disorders, herbicide injury, or toxicity (Gibbs and Harrison 1980).

Course title: **Ecology and Etiology of Plant Diseases**

Ecology and Etiology of Plant Diseases

Ecology and Etiology of Plant Diseases

What is a plant disease?

- A plant disease is any abnormal condition that alters the appearance or function of a plant. It is a physiological process that affects some or all plant functions. Disease may also reduce yield and quality of harvested product.
- Disease is a process or a change that occurs over time. It does not occur instantly like injury.

Ecology and Etiology of Plant Diseases

What is a plant disease?

- Visible effects of disease on plants are called symptoms. Any detectable changes in color, shape, and/or functions of the plant in response to a pathogen or disease-causing agent is a symptom.
- Signs of plant disease are physical evidence of the pathogen, for example, fungal fruiting bodies, bacterial ooze, or nematode cysts. Signs also can help with plant disease identification.

Ecology and Etiology of Plant Diseases

What causes plant disease?

- Infectious plant diseases are caused by living organisms that attack and obtain their nutrition from the plant they infect. The parasitic organism that causes a disease is a pathogen. Numerous fungi, bacteria, viruses, and nematodes are pathogens of corn and soybean in Iowa.
- The plant invaded by the pathogen and serving as its food source is referred to as a host.

Course title: Special Course 1, Production of Pathogen Free Plants

Special Course 1

Production of Pathogen Free Plants

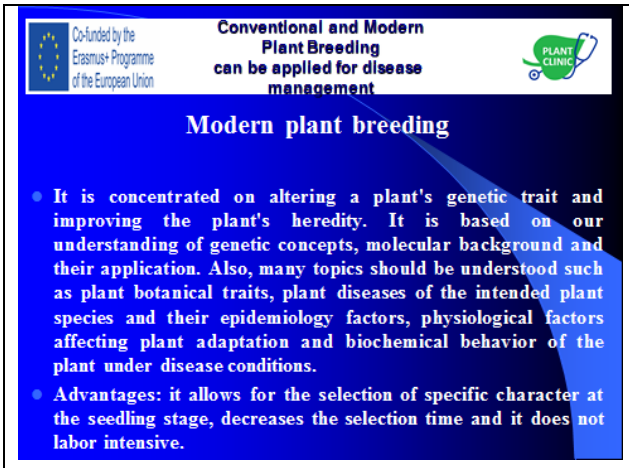
Conventional and Modern Plant Breeding can be applied for disease management

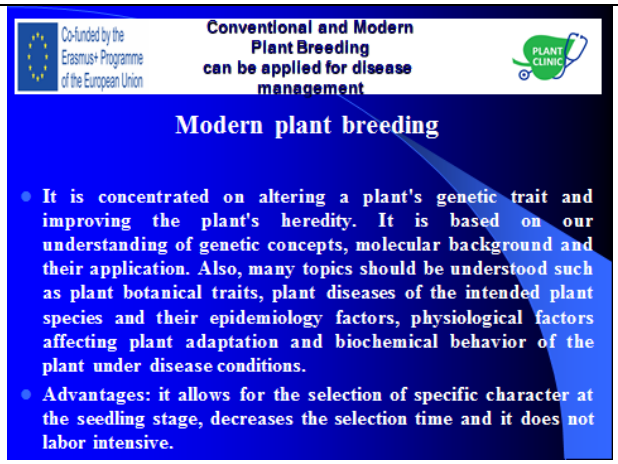
- To save food for 9.8 billion by 2050, many difficulties such as climate change but plant diseases are still one of the most important aspect, the yield loss caused by microbial pathogens is estimated to be around 30% for some crops[Oerke et al., 2004]. Bacterial and fungal diseases reduce plant yields by roughly 15%, whereas viruses decrease yields by 3%. To overcome these problems, research and breeding programs have shifted their interest to include both biotic and abiotic stress to increase plant tolerance (Borém et al., 2012).

Conventional and Modern Plant Breeding can be applied for disease management

Conventional and modern plant breeding

- Plant breeding is an human activity in which specific characteristics of plants are modified so that they can perform new or modified cultivar. Plant breeding can be classified into two types: conventional and modern plant breeding. Plant breeders use hybridization techniques to integrate collect characters from several but often closely related plant species into a new.
- Traditional procedures depend on diversity that may be exist within natural boundaries, they are time consuming and labor intensive.





Course title: Special Course 2, **Molecular Diagnosis of Plant diseases**