



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Use of Fungi in Biological Control							
Course Code		ZBY519		Couese Level		Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	178 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Objective of the course is to make students aware of use of fungi for biological control							
Course Content		History of fungal biological control, the penetration and infection mecanisms of fungi, development and applications of fungal biopreparations, mass production of fungi, commercialization and patenting							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Butt, T. M., Jackson, C., Magan, N., 2001. Fungi as biocontrol agents: progress problems and potential. CABI Publishing.
2	Burges, H.D., 1998. Formulation of Microbial Biopesticides: Beneficial microorganisms, nematodes and seed treatments. Kluwer Academic Publishers

Week	Weekly Detailed Course Contents	
1	Theoretical & Practice	Some basic concepts in biological control. A: Rules need to be considered in the laboratory, Presentation of laboratory instruments and equipment, purpose and use
2	Theoretical & Practice	Relationship with the natural balance and biological control, and ecological interpretation of biological control. A: Microscope and use
3	Theoretical & Practice	Introduction to the mode of actions for biological controls. A: Some definitions and concepts, preparations of solutions
4	Theoretical & Practice	Use of fungi as plant disease biological control agents. A: Sterilisation methods
5	Theoretical & Practice	Use of Hyphomycetous fungi for managing insect pests. A: Culture media of fungi and preparation of specific media
6	Theoretical & Practice	Biology, ecology and pest management potential of entomophthorales. A: Preparation for in vitro tests
7	Theoretical & Practice	Use of Pochonia chlamydosporia for the biological control of root-knot nematodes. A: Evaluation of the antagonistic activity of fungi
8	Intermediate Exam	Midterm exam
9	Theoretical & Practice	Use of nematode trapping fungi for the biological control of root-knot nematodes. A: Dual culture assays
10	Theoretical & Practice	Fungal biocontrol agents of weeds. A: Preparation of culture filtrates
11	Theoretical & Practice	Production and formulation of fungal biocontrol agents. A: Preparation of culture filtrates
12	Theoretical & Practice	The spray application of mycopesticide formulations. A: Nonvolatile metabolite assays
13	Theoretical & Practice	Toxic metabolites of fungal biocontrol agents. A: Nonvolatile metabolite assays
14	Theoretical & Practice	Use of mycopesticide formulations in Turkey. A: Volatile metabolite assays
15	Theoretical & Practice	Fungal biological control agents - appraisal and recommendations, A: Volatile metabolite assays
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	6	2	112
Lecture - Practice	14	2	2	56
Midterm Examination	1	4	1	5



Final Examination	1	4	1	5
Total Workload (Hours)				178
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Able to learn the historical development of fungal biological control
2	Able to learn the general principles of biological control using fungi
3	Able to learn comprehension on importance of biological control by using fungi
4	Able to learn production methods of useful fungal metabolites
5	Able to learn about recent advances in fungi

Programme Outcomes (Agricultural Biotechnology Master)

1	Students learn various techniques and evaluates resources about agricultural biotechnology
2	Make the necessary projects in agricultural biotechnology and to conduct a study of the basic level independently
3	Students learns how to conduct a scientific research and prepares themselves for the scientists in the direction of their ideals.
4	Students may reveal new ideas in social and scientific issues and can benefit from the ideas and produce something new winning independent and teamwork skills.
5	Students can use its products for the benefit of humanity, they can produce technology and collaborate with industry

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	4	5	4	4
P2	5	5	5	4	3
P3	5	5	5	5	5
P4	5	5	3	3	5
P5	5	5	5	4	4

