

Rencana Program dan Kegiatan Pembelajaran Semester (RPKPS)

Manajemen Penyakit Hutan Tanaman

REG



Oleh:

SRI RAHAYU, SITI MUSLIMAH WIDYASTUTI

**Program Studi MAGISTER ILMU KEHUTANAN
Departemen KEHUTANAN
Fakultas KEHUTANAN
UNIVERSITAS GADJAH MADA
2021 GENAP**

RENCANA KEGIATAN PEMBELAJARAN SEMESTER

A. Identitas Matakuliah / *Course Detail*

1. Nama Matakuliah / *Course Name* : Manajemen Penyakit Hutan Tanaman
2. Kode/SKS/Sifat / *Code/Credits/Status* : KTB 631/2/Pilihan (*Elective*)
3. Prasyarat / *Prerequisite* : Tidak ada
4. Deskripsi Singkat / *Short Description* : Forest Diseases Management, covers the management and control of common forest diseases in nurseries, seed orchards, and plantations. Basic scientific information is presented on forest ecosystems and pathogen life cycles. Protecting non-target organisms and preventing the development of resistance in pathogens are also emphasized. Implementing Integrated forest disease management control is become the goal of this course.
 1. Able to explain what causes tree disease, the critical tree diseases in Indonesia, and the management strategies associated with each.
 2. Able to summarize the principles for preventing damage and disease in plantation forests
 - 3. Able to recognize symptoms and impacts of key diseases in nurseries and plantation forests**
 4. Able to analyze the concept of threshold levels as an IPM decision.
 5. Able to identify the various IPM management strategies and under what circumstances they should be applied, understand the importance of evaluating pest management strategies, and what kind of information should be recorded.
 - 6. Able to compose a proposal in selecting the best option for integrated management control of specific important forests disease in the tropics.**
5. Tujuan Pembelajaran / *Learning Objective* :
6. Dosen Pengampu Matakuliah / *Lecturers* : SRI RAHAYU, SITI MUSLIMAH WIDYASTUTI
7. Capaian Pembelajaran Matakuliah / *Course Learning Outcome (CPMK/CLO)* :

Kode / Code	Deskripsi / Description	PLO/SO/ELO/CPL/LG
CLO 1	Able to explain what causes tree disease, the important tree diseases in Indonesia and the management strategies associated with each.	PLO 5
CLO 2	Able to explain and internalize the principles for preventing damage and disease in plantation forests	PLO 5

Kode / Code	Deskripsi / Description	PLO/SO/ELO/CPL/LG
CLO 3	Able to explain and recognize symptoms and impacts of key diseases in nurseries and plantation forests	PLO 5
CLO 4	Able to explain the goal of integrated pest management (IPM) programs, be familiar with IPM tools and how they are used, understand the concept of threshold levels as an IPM decision.	PLO 6
CLO 5	Able to identify the various IPM management strategies and under what circumstances they should be applied, understand the importance of evaluating pest management strategies and what kind of information should be recorded.	PLO 6
CLO 6	Able to compose and presented a proposal and selecting the best option for integrated management control of specific important forests disease in the tropics.	PLO 6,PLO 7

PLO / PI Detail

PLO 5	Knowledge (Analyse Comprehensively in the Specific Fields)	<i>Able to analyze comprehensively updated issues in the specific fields of silviculture, forest management, forest products technology or forest resource conservation, and to recommend possible solutions based on difined problems.</i>
PLO 6	Skill (Logic, Critical, Innovative Thinking)	<i>Able to apply logical, critical, systematic and innovative thinking skills by utilizing information technology to produce solutions in form of scientific documents individually as well as in a team.</i>
PLO 7	Skill (Formulating Research)	<i>Able to formulate research questions, developing and conducting appropriate plan and methods, collecting and analyzing data, synthesizing and inferring research findings in forestry by multidisciplinary approaches that publishable on nationally accredited and/or reputable international journal.</i>

B. Topik Perkuliahan / Course Materials

Bahasan / Main Discussion	Estimasi Waktu / Estimated Times (Hour)	Kompetensi (Course Learning Outcomes)
INTRODUCTION.	100	1.1. How to keep trees healthy and protect them from pests and diseases 1.2. How to keep long-term productivity of forest planted and economic threshold 1.3. General guidance to strategies for keeping trees healthy

Bahasan / Main Discussion	Estimasi Waktu / Estimated Times (Hour)	Kompetensi (Course Learning Outcomes)
PRINCIPLES FOR PREVENTING DAMAGE AND DISEASE IN PLANTATION FORESTS	100	2.1. Thin and fertilize trees, and manage weeds for helping trees tolerate fungal diseases. 2.2. Regularly inspection and monitoring 2.3. Report unusual, suspicious plants and animals 2.4. Reduce the introduction and spread of disease 2.5. Quarantine r
SYMPTOMS AND IMPACTS OF KEY DISEASES IN PLANTATION FORESTS (I)	100	3.1. RUST DISEASES 3.2. FUNGAL DISEASES 3.3. VIRUS AND BACTERAL DISEASES,
SYMPTOMS AND IMPACTS OF KEY DISEASES IN PLANTATION FORESTS (II)	100	4.1. Leaf diseases 4.2. Stem cancer and gall 4.3. Root diseases, etc
MANAGING PESTS AND DISEASES IN FORESTRY PLANTATIONS USING FUNGICIDE	100	5.1. What? 5.2. Where? 5.3. When? 5.4. Why bother?
MANAGING PESTS AND DISEASES IN FORESTRY PLANTATIONS USING BIOLOGICAL AGENT	100	6.1. Fungal antagonist 6.2. Mycorrhiza 6.3. Natural enemy, etc
MANAGING PESTS AND DISEASES IN FORESTRY PLANTATIONS USING TREES IMPROVEMENT	100	7.1. develop strategies that may provide some “pre-emptive” or general resistances 7.2. classes of resistance that could be developed in advance against various classes diseases 7.3. will the resistance mechanisms currently being used be able to provide
RESEARCH INTO FORESTRY PLANTATION HEALTH	100	8.1. Minimizing impact of forest diseases 8.2. diseases management options for tropical hardwood plantations
FOREST BIOSECURITY AND PREPARING FOR CLIMATE CHANGE	100	9.1. Climate change impact to pest and diseases 9.2. Biosecurity

Bahasan / Main Discussion	Estimasi Waktu / Estimated Times (Hour)	Kompetensi (Course Learning Outcomes)
PAPER PRESENTATION ON INTEGRATED ROOT, STEM, AND BRANCH DISEASES MANAGEMENT	100	10.1. Preparing . IPM for root disease 10.2. Preparing IPM for stem and branch diseases
PAPER PRESENTATION ON INTEGRATED LEAF AND CROWN DISEASES MANAGEMENT	100	11. Preparing IPM for leaf and crown diseases
PAPER PRESENTATION ON INTEGRATED NURSERIES AND PLANTATION DISEASES MANAGEMENT	100	12.1. Preparing proposal IPM for the nursery diseases 12.2. Preparing proposal IPM for the Plantation diseases

C. Rencana Asesmen / Assessment Plan

CO/CPMK	Tipe / Type	Deskripsi / Description	Persentase / Percentage	PLO/SO/ELO/CPL/LG
CLO 1	UTS	Bagian 1	10	PLO 5
CLO 2	UAS	Bagian 1	10	PLO 5
CLO 3	UTS	Bagian 2	20	PLO 5
CLO 4	UTS	bagian 3	20	PLO 6
CLO 5	UAS	Bagian 2	20	PLO 6
CLO 6	UAS	bagian 4	10	PLO 7
CLO 6	UAS	bagian 3	10	PLO 6

D. Referensi / References

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E. Rencana Kegiatan Pembelajaran Mingguan (RKPM) / *Weakly Teaching Plan*

Pertemuan Ke / Week	Tujuan Ajar / Learning Objective	Topik / Topic	Media Ajar / Teaching Media	Metode Assesment / Assesment Method	Metode Ajar / Teaching Method	Aktivitas Mahasiswa / Student Activity	Aktivitas Dosen / Lecturer Activity	Sumber Ajar / Learning Resources
1	To introduce management strategies to keep trees healthy and	1.1. How to keep trees healthy and protecting them from pests and diseases 1.2. How to keep long term productivity of forest planted and economic threshold 1.3. General guidance to strategies for keeping trees healthy	PPT, Video	Quiz	Material explanation in the class room	Discussion	Preparing material PPT, explaining lecturer	9, 10
2	To explain and internalize the principles for preventing damage and disease in plantation forests	2.1. Thin and fertilize trees, and manage weeds for helping trees tolerate to fungal diseases. 2.2. Regularly inspection and monitoring 2.3. Report unusual, suspicious plants and animals 2.4. Reduce the introduction and spread of disease 2.5. Quarantine restrictions for moving plants	PPT, Video	Quiz	Material explanation in the classroom	Discussion	Preparing material PPT, explaining lecturer	7, 8, 11
3	To explain and recognize symptoms and impacts of key diseases in plantation forests	3.1. Rust Diseases 3.2. Fungal Diseases 3.3. Virus and Bacterial Diseases	PPT, Video	Quiz, Presentation	Material explanation in the classroom	Discussion, Presentation	Preparing material PPT, explaining lecturer	8, 11

Pertemuan Ke / Week	Tujuan Ajar / Learning Objective	Topik / Topic	Media Ajar / Teaching Media	Metode Assesment / Assesment Method	Metode Ajar / Teaching Method	Aktivitas Mahasiswa / Student Activity	Aktivitas Dosen / Lecturer Activity	Sumber Ajar / Learning Resources
4	To explain and recognize symptoms and impacts of key diseases in nurseries and plantation forests	4.1. Leaf diseases 4.2. Stem cancer and gall 4.3. Root diseases, etc	PPT, Video	Quiz, Presentation	Material explanation in the classroom	Discussion, Presentation	Preparing material PPT, explaining lecturer	5, 6, 7, 9, 10
5	To explain how to manage pests and diseases in forestry plantations using fungicide	5.1. What? 5.2. Where? 5.3. When? 5.4. Why bother?	PPT, Video	Quiz, Presentation	Material explanation in the classroom	Discussion, Presentation	Preparing material PPT, explaining lecturer	2, 8, 9, 11
6	To explain how to manage pests and diseases in forestry plantations using biological agent	6.1. Fungal antagonist 6.2. Mycorrhiza 6.3. Natural enemy, etc	PPT, Video	Quiz, Presentation	Material explanation in the classroom	Discussion, Presentation	Preparing material PPT, explaining lecturer	1, 7, 9, 11
7	To explain how to manage pests and diseases in forestry plantations using trees improvement	7.1. Develop strategies that may provide some "pre-emptive" or general resistances 7.2. Classes of resistance that could be developed in advance against various classes diseases 7.3. Will the resistance mechanisms currently being used be able to provide some protection from new or related diseases?	PPT, Video	Quiz, Presentation	Material explanation in the classroom	Discussion, Presentation	Preparing material PPT, explaining lecturer	7, 9, 16
8	-	Midterm Examination	Summative Test	Test	Writing exam	Do the exam	Preparing exam materials	-

Pertemuan Ke / Week	Tujuan Ajar / Learning Objective	Topik / Topic	Media Ajar / Teaching Media	Metode Assesment / Assesment Method	Metode Ajar / Teaching Method	Aktivitas Mahasiswa / Student Activity	Aktivitas Dosen / Lecturer Activity	Sumber Ajar / Learning Resources
9	To recognize and understand the impact of forest diseases and the diseases management options for tropical hardwood plantations	9.1. Minimizing impact of forest diseases 9.2. Diseases management options for tropical hardwood plantations	PPT, Video	Presentation	Material explanation in the classroom, Discussion	Discussion, Presentation	Preparing material PPT, explaining lecturer, lead the discussion and presentation	4, 7, 11
10	To recognize and understand forest biosecurity and preparing for climate change	10.1. Climate change impact to pests and diseases 10.2. Biosecurity	PPT, Video	Presentation	Material explanation in the classroom	Discussion, Presentation	Preparing material PPT, explaining lecturer, lead the discussion and presentation	1, 3, 7
11	To identify the various IPM management strategies and understand what circumstances they should be applied also to understand the importance of evaluating pest management strategies and what kind of information should be recorded especially for root , stem, and branch diseases	11.1. IPM for root disease 11.2. IPM for stem and branch diseases	PPT, Video	Presentation	Presentation by students	Discussion, Presentation	Lead the discussion and presentation	1, 6, 7, 8, 9, 11

Pertemuan Ke / Week	Tujuan Ajar / Learning Objective	Topik / Topic	Media Ajar / Teaching Media	Metode Assesment / Assesment Method	Metode Ajar / Teaching Method	Aktivitas Mahasiswa / Student Activity	Aktivitas Dosen / Lecturer Activity	Sumber Ajar / Learning Resources
12	To identify the various IPM management strategies and understand what circumstances they should be applied also to understand the importance of evaluating pest management strategies and what kind of information should be recorded especially for leaf and crown diseases	12.1. IPM for leaf and crown diseases	PPT, Video	Presentation	Presentation by students	Discussion, Presentation	Lead the discussion and presentation	1 to 11
13	To compose and present a proposal and select the best option for integrated management control of specific important forests disease in the tropics especially for nursery and plantation diseases	13.1. Preparing proposal IPM for the nursery diseases 13.2. Preparing proposal IPM for the Plantation diseases	PPT, Video	Presentation	Presentation by students	Discussion, Presentation	Lead the discussion and presentation	1 to 11
14	-	Final Examination	Summative Test	Test	Writing Exam	Do the exam	Preparing exam materials	-