

Agricultural Pesticide

Obligatory module or Selective module	Agricultural Pesticides	PNH 3116
Semester	II	
Module level	Undergraduate	
Module Coordinator	Prof.Ir. Y. Andi Trisyono, M.Sc., Ph.D.	
Lecturer(s)	Prof. Ir. Y. Andi Trisyono, M.Sc.,Ph.D. Prof. Dr. Ir. Edhi Martono,M.Sc. Prof. Dr. Ir. Achmadi Priyatmojo,M.Sc. Ani Widiastuti, S.P., M.P., Ph.D.	
Type of Module	1 hour and 40 minutes lecture Laboratory works and field visit	
Status	C (Compulsory courses)	
Exam	Written	
Number of participants	64	
Credit Points:	2/1 (5.02 ECTS)	
Description:	This course covers five different aspects related to the use of pesticides in agriculture as follows: the importance of pesticides in different agricultural systems and eras; different pesticides related to target pests and toxicity of pesticides in relation with their efficacy, health and environmental concerns; mode of entry and mode of actions different pesticides; proper use of pesticides and the unintended impacts of pesticides for the target pests, environment and human health; and pesticide management starting from registartion to disposal.	
Academic goal (competency):	Students understand the development of pesticides, be able to select and use pesticide properly based their understanding on mode of entry, mode of action, benefit and risk analysis.	
Course outcomes:	<p>CO1= The students understand well enough the big picture of how pesticides have been playing their roles in the past, current, and near future</p> <p>CO2= The students are able to distinguish different pesticides based on different classification systems and use these knowledge as the bases to make the right decision and selection in regard with pesticide usage</p> <p>CO3= The students aware the benefits and risks of pesticides and knowledgeable is using pesticide judiciously</p> <p>CO4= The students are able to make decision and apply pesticides in accordance with IPM principles</p>	
Contents:	<p>1. Introduction: course contents and rules, definition of pesticides, history of pesticide development, pesticides in the eras of intensive (conventional) agriculture, IPM and</p>	

<p>sustainable agriculture</p> <ol style="list-style-type: none"> 2. Classification and formulation: pesticide classification and formulation, adjuvants, label, dosage, concentration, and spray volume 3. Pesticide toxicity: definition, indicators, and determination of toxicity, acute and chronic toxicity 4. Fungicides and bactericides: classification, MOE and MOA 5. Fungicides and bactericides: classification, MOE and MOA 6. Impacts of fungicides and bactericides: development, mechanisms, and management of resistance 7. Pesticides residue: definition of residue, the importance from health and trade, MRL, and ADI 8. Natural pesticides: definition, types of natural pesticides, MOA, advantage and disadvantage 9. Insecticides, rodenticides, and nematocides (1): classification, mode of entry, and mode of action 10. Insecticides, rodenticides, and nematocides (2): classification, mode of entry, and mode of action 11. Pesticides and environment: spray, droplet, drift, degradation, half life, persistence, and effectiveness 12. Insect resistance: definition of resistance, development, mechanism, and management of resistance 13. Insect resurgence: definition, hormesis, factors contributing to resurgence 14. Pesticide management: from registration to disposal, existing pesticide regulations 	
<p>Which previous course required? Plant Protection</p>	
<p>Literature:</p> <ol style="list-style-type: none"> 1. Ware, G. W. 1989. The Pesticide Book. Thomson Publications, Fresno, CA. 336 p. 2. Wheeler, W. B. (ed.), 2002. Pesticide in Agriculture and the Environment. Marcel Dekker, Inc., New York, NY. 330 p. 3. Marer, P.J., M.L. Flint & M.W. Stimmann. 1988. The Safe and Effective Use of Pesticides. Uni. of California, Statewide Integrated Pest Management Project. Division of Agriculture and Natural Resources. Publication 3324, 387 p. 	
<p>Materials provided: Hand out of power points and related articles</p>	
<p>Requirements for exam: 75% attendance set by the Faculty of Agriculture</p>	
<p>Teaching method(s)</p>	<p>Lecturing and discussion Assignment related to the subject matter</p>
<p>Workload (hrs).</p> <ol style="list-style-type: none"> 1. Classes (face to face): 14 weeks 2. Lab works: 10 topics (weeks) 3. Assignment: reading related to the topic being discussed 	