



PORTFOLIO

Department of Agrotechnology

Faculty of Agriculture

University of Islam Malang

Subject	Pesticides and their Application Techniques
Module Level, if available	Undergraduate, Study Program of Agrotechnology
Subject Code	MKP 60601
Type of course	Applied Science
Credits	2 credits
Semester	5
Prerequisite	---
Parallel Class	A
Module Description	This course material includes the understanding, scope, objectives, problems of pesticides and their application techniques, discussion of related sciences, basic concepts about pesticides and their application techniques, introduction to pesticides and their application techniques along with some of the negative impacts and dangers of pesticides, calibration, and the efficacy of pesticides, the prospects of pesticides and their application techniques in the present and the future, as well as the relationship between the Islamic values of Ahlussunnah wal Jama'ah
Learning Outcomes	<p>Course Learning Outcomes (CLO)</p> <p>CLO 1 : Understand the theoretical concepts of various types of pesticides and their application techniques.</p> <p>CLO 2 : Able to perform various pesticide application techniques independently or in team work</p> <p>CLO 3 : Able to analyze dosage requirements, solution concentration, LD 50, LC 50 in pesticide applications</p> <p>CLO 4 : Able to evaluate the safe application of pesticides for humans, livestock, and the environment</p>
Learning Content	<p>After completing this subject, students are able to:</p> <ol style="list-style-type: none"> Examines various types of pesticides and their application techniques, and applies them in a sustainable crop production system Perform various pesticide application techniques Calculate dosage, solution concentration, LD 50, LC 50 in pesticide application Evaluate the application of pesticides that are safe for humans, livestock, and the environment
Aims	Students have competence in applying pesticides with various tools that are effective, efficient, and safe for humans, livestock, and the environment.
Teaching Methods	Tutorials with blended learning, research-based learning with laboratory work, and assignments. Presentation of group assignments at the end of the lecture as an evaluation of work in a team
Participant	<ul style="list-style-type: none"> A class: 39 students in total; 5th semester = 30 students; 7th semester = 2 student, 9th semester = 4 students; 11th semester = 3 student
Teaching Attendance	<ul style="list-style-type: none"> ➤ 14 meetings were completely held (100%) by lecturer ➤ From 39 students, 1 student were below 100% of attendance (11th semester)
Evaluation System	Component of assessment on this course consist of

	<p>Daily assesment, midle semester test and final semester test, and practice. All these component are then combined to obtain final score. Scoring matrices and question samples are available in Appendix 1 and Appendix 2</p>
Learning Result	<ul style="list-style-type: none"> • Achievement CLO <ul style="list-style-type: none"> CLO 1 = 82.9 (Excellent) CLO 2 = 82.8 (Excellent) CLO 3 = 84.3 (Excellent) CLO 4 = 83.1 (Excellent) <p>Complete achievement on average CLO can be seen on Appendix 3</p>
Statistical Distribution	<ul style="list-style-type: none"> • A Class, score distribution: A = 6 students (15.4%), B = 27 students (69.2%), C = 6 student (15.4%) and Failed = Nothings <p>Complete achievement on each per student can be seen on Appendix 4</p>
Teaching Observation	<p>Materials were delivered in Indonesia. The student could understand the materials well.</p> <p>There are 8 students who have low CLO mastery in the class, with the distribution as follows:</p> <ul style="list-style-type: none"> ➤ 2 students low in CLO 1, 2, and 4 ➤ 2 student low in CLO 1 and 2 ➤ 1 student low in CLO 1 and 4 ➤ 1 student low in CLO 2 and 4 ➤ 1 student low in CLO 1 ➤ 1 student low in CLO 4 <p>4 of them were from 7th semester and above</p>
Learning Constraints	<p>Practical activities in the laboratory and in the field were constrained due to the COVID-19 pandemic, the activities of more than 10 people were prohibited. The lack of these activities makes students weak in mastering application techniques</p>
Recommendation	<p>As an effort to overcome practical obstacles during the pandemic, blended learning optimization is a strategic solution. It is necessary to make a step-by-step video tutorial which will then be uploaded to the Learning Management System</p>

Appendix 1. Scoring Matrix

Nomenclature	Weight	Final Score	
		Letter Mark	Score average
Daily assessment	20%	A	80 – 100
Midle semester test	25%	B	70 - <80
Final semester test	25%	C	55 - <70
Practice	30%	D	50 - < 55
		E	0 - <50

Appendix 2. Question samples

1. Explain the various types of pesticides based on the active ingredient, target, how the poison works, and its formulation! (CLO 1)
2. Mention and explain pesticide application tools from the simple to the most recent! (CLO 1)
3. How do you apply pesticides to a land area of more than one hectare? (CLO 2)
4. On the packaging of the wettable powder (WP) pesticide formulation, there are instructions for use, namely 5 g per liter of water. If the tomato garden to be sprayed with pesticides is 0.5 hectares wide, the pesticide dose is 2 kg/hectare, and the spray tank has a capacity of 20 liters, how many times do you have to mix the pesticide solution? (CLO 3)
5. Biomagnification is the impact of pesticide pollution due to excessive and careless use. Explain how this case occurred and how to avoid it! (CLO 4)

Appendix 3. Achievement of CLO

Meetings	CLO 1 (%)	CLO 2 (%)	CLO 3 (%)	CLO 4 (%)
1	85.3			
2,3,4	88.3			
5		88.6		
6,7				88.4
8	88.1			
9			88.0	
10				86.8
11-12				87.1
13		84.3		
14		85.6		
Average	87.2	86.2	88.0	87.4
Predicate	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT

Standard

Std num-based AI		Weighted avg LO based AI	
>70 = AI	HIGH	>70 = AI	EXCELLENT
60 <= AI < 70	MEDIUM	60 <= AI < 70	SATISFACTORY
50 <= AI < 60	LOW	50 <= AI < 60	DEVELOPING
AI < 50	VERY LOW	AI < 50	UNSATISFACTORY

Appendix 4. Achievement on each per students

NO.	NPM	NAMA	SUB-CPMK/BOBOT (NILAI HARIAN)										NILAI HARIAN (DPP)		UTS (25%)	PBK (30%)	UAS (25%)	NILAI AKHIR **																								
			1		2		3		4		5		6					7		8		9		10																		
			CLO1	5%	CLO1	20%	CLO2	15%	CLO4	15%	CLO1	8%	CLO3	7%				CLO4	8%	CLO4	12%	CLO2	5%	CLO2	5%	Skala 4	Skala 100															
1	NOVA ARDIANSAH	21501031005	2.50	0.13	63	2.00	0.40	50	4.00	0.60	100	3.00	0.45	75	3.67	0.29	92	4.00	0.28	100	3.75	0.30	94	3.00	0.36	75	3.75	0.19	94	3.00	0.15	75	2.60	64.97	75	80	65.0	71.49	B			
2	BRIJANTO CANDRIAYODA	21501031019	3.00	0.15	75	3.50	0.70	89	3.00	0.45	75	3.00	0.45	75	2.05	0.24	71	3.50	0.25	89	2.05	0.33	71	3.00	0.36	75	2.00	0.10	50	3.50	0.13	63	2.50	64.80	80	80	75.1	75.65	B			
3	AYIS DWI DHARMIYANTO	21501031097	3.50	0.18	88	4.00	0.80	100	3.00	0.45	75	3.34	0.50	84	3.00	0.24	75	3.00	0.21	75	3.00	0.24	75	3.34	0.40	84	3.00	0.15	75	3.75	0.19	94	2.80	70.69	70.5	80	70.0	73.14	B			
4	EDWINDRA PANDEGA BUANA	21601031039	2.75	0.14	69	3.00	0.60	75	3.67	0.55	92	2.75	0.41	69	3.00	0.24	75	3.00	0.21	75	2.50	0.20	63	3.00	0.36	75	2.50	0.13	63	3.00	0.15	75	2.50	62.51	73.5	70	72.1	69.90	C			
5	RIZAL HABIBI	21601031055	2.50	0.13	63	2.75	0.55	69	2.50	0.38	63	2.60	0.39	65	3.00	0.24	75	3.00	0.21	75	3.00	0.24	75	3.00	0.36	75	3.00	0.15	75	3.00	0.15	75	2.28	57.00	73	70	63.1	67.92	C			
6	OHEDIYAH FARIDAH LILAH	21601031078	3.00	0.15	75	3.50	0.70	89	3.50	0.53	89	4.00	0.60	100	3.00	0.24	75	3.00	0.21	75	3.00	0.24	75	4.00	0.48	100	3.00	0.15	75	3.00	0.15	75	2.87	70.38	75	80	70.0	74.93	B			
7	FARSI ANTONI	21601031060	3.50	0.18	88	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	3.00	0.24	75	3.50	0.25	89	3.00	0.24	75	3.00	0.36	75	3.00	0.15	75	3.00	0.15	75	3.05	76.25	78	75	68.1	74.27	B			
8	ZAINAL ABIDIN	21701031042	2.00	0.10	50	2.75	0.55	69	3.50	0.53	89	4.00	0.60	100	3.50	0.28	88	3.00	0.21	75	3.50	0.28	88	2.75	0.33	69	3.50	0.18	88	4.00	0.20	100	2.75	68.63	85	70	68.1	72.99	B			
9	MUHAMMAD ZAHIR ALWITRI	21701031048	4.00	0.20	100	3.50	0.70	89	4.00	0.60	100	3.67	0.55	92	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	3.67	0.44	92	4.00	0.20	100	3.50	0.18	88	3.15	78.64	71	75	65.0	72.23	B			
10	PRADITA PRIMA DEVIYANTI	21801031001	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	4.00	0.32	100	3.50	0.25	88	4.00	0.32	100	4.00	0.48	100	4.00	0.20	100	3.50	0.18	88	3.26	81.50	78.5	85	80.0	81.43	A			
11	MUHAMMAD AGUNG HIDAYAT	21801031005	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	3.67	0.29	92	4.00	0.28	100	3.75	0.30	94	4.00	0.48	100	3.75	0.19	94	4.00	0.20	100	3.27	81.84	86.4	85	82.2	82.52	A			
12	MUHAMMAD FADIL	21801031006	3.00	0.15	75	3.00	0.60	75	2.85	0.43	71	2.67	0.40	63	3.00	0.24	75	3.00	0.21	75	3.00	0.24	75	2.67	0.32	69	3.00	0.15	75	3.00	0.15	75	2.42	60.45	78.5	75	71.1	69.98	C			
13	DEWA MAHA	21801031010	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	3.50	0.28	88	4.00	0.48	100	3.50	0.18	88	3.27	81.69	79.5	85	72.1	72.48	B			
14	VIVYALAYDA FATMASARI	21801031018	3.50	0.18	88	4.00	0.80	100	3.67	0.55	92	4.00	0.60	100	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	3.67	0.44	92	4.00	0.20	100	4.00	0.20	100	3.25	81.14	73	75	69.1	74.24	B			
15	ABDULAJI	21801031020	3.00	0.15	75	3.00	0.60	75	3.00	0.45	75	4.00	0.60	100	3.00	0.24	75	2.60	0.20	70	3.00	0.24	75	4.00	0.48	100	3.00	0.15	75	2.63	65.65	75	75	76.1	73.40	B						
16	INDRA DWI AGUSTIN	21801031021	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	3.00	0.45	75	3.67	0.29	92	3.00	0.21	75	3.50	0.28	88	3.00	0.36	75	3.50	0.18	88	3.00	0.15	75	2.98	74.59	83	75	72.1	76.19	B			
17	ARIPATUS SOLIKA	21801031024	4.00	0.20	100	4.00	0.80	100	3.67	0.55	92	3.67	0.55	92	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	3.67	0.44	92	4.00	0.20	100	3.75	0.19	94	3.21	80.21	85	80	68.1	78.31	B			
18	RAGIL BHAKTI AJI	21801031025	2.95	0.14	71	3.00	0.60	75	3.00	0.45	75	3.00	0.45	75	3.00	0.24	75	3.00	0.21	75	2.75	0.32	69	3.00	0.36	75	2.50	0.13	63	3.50	0.18	88	2.49	62.19	71	70	72.5	69.91	C			
19	MITHA MITHALI JANNAH	21801031031	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	3.75	0.30	94	4.00	0.48	100	3.75	0.19	94	4.00	0.20	100	3.30	82.50	83	80	84.1	82.27	A
20	MILA SA DIYAH ROHMAH	21801031032	4.00	0.20	100	3.50	0.70	89	4.00	0.60	100	4.00	0.60	100	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	4.00	0.48	100	4.00	0.20	100	3.50	0.18	88	3.20	79.88	80	85	81.5	81.85	A			
21	SEKAR PUTRI LISNANMATI	21801031039	3.50	0.18	88	4.00	0.80	100	3.00	0.45	75	3.34	0.50	84	3.75	0.30	94	3.00	0.21	75	4.00	0.32	100	3.34	0.40	84	3.50	0.18	88	3.50	0.18	88	2.93	73.28	78.5	75	71.1	72.55	B			
22	NUR IFFATUS SAHIAH	21801031044	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	3.67	0.29	92	4.00	0.28	100	4.00	0.32	100	4.00	0.48	100	4.00	0.20	100	3.50	0.18	88	3.27	81.72	88.5	80	72.1	76.49	B			
23	ERWIN	21801031055	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	4.00	0.60	100	4.00	0.32	100	4.00	0.28	100	3.75	0.30	94	4.00	0.48	100	3.75	0.19	94	4.00	0.20	100	3.30	82.50	79	75	69.1	74.52	B			
24	FENIA ANANIASARI	21801031062	3.00	0.15	75	3.50	0.70	89	3.67	0.55	92	3.00	0.45	75	4.00	0.32	100	3.50	0.25	88	3.00	0.24	75	3.00	0.36	75	3.00	0.15	75	3.00	0.15	75	2.81	70.14	85	75	76.1	76.80	B			
25	SILVIANA MELANIO	21801031066	3.00	0.15	75	3.00	0.60	75	3.00	0.45	75	3.00	0.45	75	3.00	0.24	75	3.00	0.21	75	3.25	0.36	81	3.00	0.36	75	3.25	0.16	81	3.00	0.15	75	2.51	62.75	73	80	72.1	72.92	B			
26	M. AKBAR SYAFRI	21801031072	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	3.67	0.55	92	4.00	0.32	100	4.00	0.28	100	4.00	0.32	100	3.67	0.44	92	4.00	0.20	100	3.75	0.19	94	3.26	81.45	85	80	68.1	78.56	B			
27	JIANE AJENG PRATIWI	21801031076	3.00	0.15	75	3.00	0.60	75	2.75	0.41	69	2.85	0.43	71	2.75	0.22	69	4.00	0.28	100	3.00	0.24	75	3.00	0.36	75	2.75	0.14	69	2.50	0.13	63	2.46	61.38	71	75	78.1	72.04	B			
28	AEBNO NISTRA DENI	21801031077	3.00	0.15	75	4.00	0.80	100	3.75	0.56	94	4.00	0.60	100	4.00	0.32	100	3.00	0.21	75	4.00	0.32	100	3.50	0.42	88	3.00	0.15	75	3.50	0.18	88	3.14	78.44	78	85	65.1	81.96	A			
29	RAGIL FATMA ROLDUNA	21801031078	3.50	0.18	88	3.00	0.60	75	3.00	0.45	75	3.00	0.45	75	3.00	0.24	75	3.50	0.25	89	3.00	0.24	75	3.00	0.36	75	3.00	0.15	75	3.55	63.75	80	80	75.1	75.52	B						
30	SAHDA REZA WARDANA	21801031085	4.00	0.20	100	4.00	0.80	100	4.00	0.60	100	3.67	0.55	92	4.00	0.32	100	4.00	0.28	100	3.75	0.30	94	3.67	0.44	92	3.75	0.19	94	4.00	0.20	100	3.25	81.26	84.5	80	81.1	81.65	A			
31	MURHABATUL LUBABAH	21801031086	4.00	0.20	100	3.50	0.70																																			