

Add-on Course Report

Session 2024-25

Bhawabhuti Mahavidyalaya, Amgaon

Department of Chemistry

Duration: 30 Days, 30 hr.

Date:- 23/09/2024 to 26/10/2024

Target Group:- B.Sc. I year (Chemistry)

Number of Students Participate: - 25 Present student-18 Absent Student-07

The department of Chemistry organized a 30 days Add-On course titled Chemical Composition of Pesticides and its impact on human being to create awareness about pesticides chemistry, classification, toxicological effects, environmental persistence, and safe handling practices. The course aimed to provide scientific knowledge along with social awareness regarding pesticide exposure and its health implication.

BHAWABHUTI MAHAVIDYALAYA, AMGAON

DEPARTMENT OF CHEMISTRY

NOTICE

All the students of B. Sc. Semester-I (Major Chemistry) are here by informed that Department of Chemistry is going to conduct an Add-On Course titled "Chemical Composition of Pesticides and its impact on human being" from 23/09/2024 to 26/10/2024 students are remain present theory and practical classes regularly.

Course Co-ordinator

Mr. Vishal T Rathod


Principal

Principal
Bhawabhuti Mahavidyalaya
Amgaon, Dist.Gondia
Maharashtra- 441902

BHAWABHUTI MAHAVIDYALAYA, AMGAON DEPARTMENT OF CHEMISTRY

Time Table

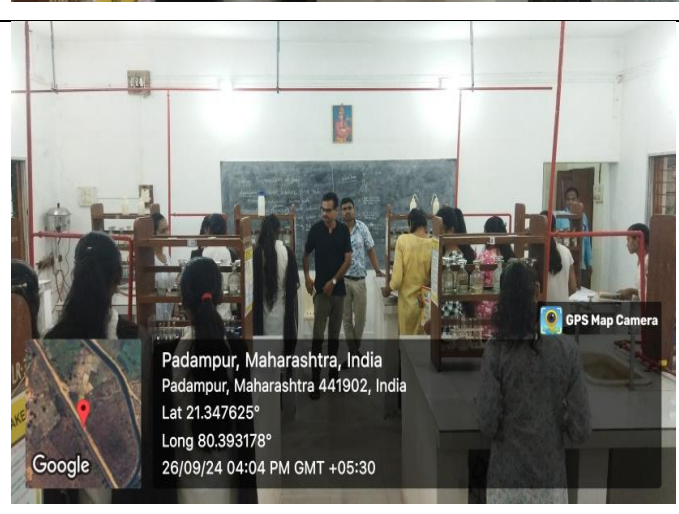
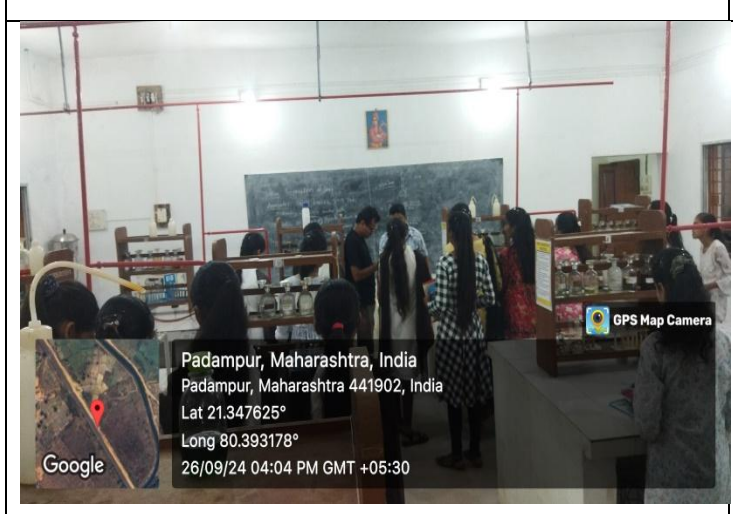
Day	Date	Time	Theory/Practical	Teacher Name
Monday	23/09/2024	4:00 to 5:00 pm	T	VTR
Tuesday	24/09/2024	4:00 to 5:00 pm	T	VTR
Wednesday	25/09/2024	4:00 to 5:00 pm	T	VTR
Thursday	26/09/2024	4:00 to 5:00 pm	T	VTR
Friday	27/09/2024	4:00 to 5:00 pm	T	VTR
Saturday	28/09/2024	4:00 to 5:00 pm	T	VTR
Sunday	30/09/2024	4:00 to 5:00 pm	T	VTR
Monday	01/10/2024	4:00 to 5:00 pm	T	OLP
Tuesday	03/10/2024	4:00 to 5:00 pm	T	OLP
Wednesday	04/10/2024	4:00 to 5:00 pm	T	OLP
Thursday	05/10/2024	4:00 to 5:00 pm	T	OLP
Friday	06/10/2024	4:00 to 5:00 pm	T	OLP
Saturday	07/10/2024	4:00 to 5:00 pm	T	OLP
Sunday	08/10/2024	4:00 to 5:00 pm	T	OLP
Monday	09/10/2024	4:00 to 5:00 pm	T	PVB
Tuesday	10/10/2024	4:00 to 5:00 pm	P	PVB
Wednesday	11/10/2024	4:00 to 5:00 pm	P	PVB
Thursday	13/10/2024	4:00 to 5:00 pm	P	PVB
Friday	14/10/2024	4:00 to 5:00 pm	P	PVB
Saturday	15/10/2024	4:00 to 5:00 pm	P	PVB
Sunday	16/10/2024	4:00 to 5:00 pm	P	PVB
Monday	17/10/2024	4:00 to 5:00 pm	P	OLP
Tuesday	18/10/2024	4:00 to 5:00 pm	P	OLP
Wednesday	19/10/2024	4:00 to 5:00 pm	P	OLP
Thursday	21/10/2024	4:00 to 5:00 pm	P	OLP
Friday	22/10/2024	4:00 to 5:00 pm	P	OLP
Saturday	23/10/2024	4:00 to 5:00 pm	P	OLP
Sunday	24/10/2024	4:00 to 5:00 pm	P	OLP
Monday	25/10/2024	4:00 to 5:00 pm	P	OLP
Tuesday	26/10/2024	4:00 to 5:00 pm	P	OLP

Course Co-ordinator

Mr. Vishal T Rathod


Principal

Principal
Bhawabhuti Mahavidyalaya
Amgaon, Dist.Gondia
Maharashtra- 441902



Objectives

1. To understand the chemical composition and classification of pesticides.
2. To study the mechanism of action of different pesticide groups.
3. To analyze the impact of pesticide on human health.
4. To create awareness about safe handling and environmental sustainability.
5. To encourage research interest in toxicology and environmental chemistry.

Conclusion

The 30 day Add-On course on Chemical Composition of Pesticides and its impact on human beings successfully enhanced students understanding of pesticide chemistry, toxicology, and environmental impact. The program helped bridge the gap between theoretical knowledge and practical awareness, promoting responsible and sustainable use of agrochemicals.

Acknowledgments

The Department of Chemistry expresses gratitude to the management of Bhawabhuti Mahavidyalaya, Amgaon, for their support in organizing this course. Special thanks to the Principal Dr. P. K. Rahangdale and faculty members, Mrs. M. G. Bawanthade, Dr. V. T. Rathod, Mr. O. L. Patle, Mr. P.V. Bankar, for their guidance, and to the students for their active participation.

Student Attendance:

[illegible]

B.Sc. -I (2024-25)		Date	Date	Date	Date	Date	Date	Date	Date
Sr. No.	Name of Students	03/10/24	04/10/24	05/10/24	06/10/24	07/10/24	08/10/24	09/10/24	10/10/24
1	PAYAL MANOHAR BAHEKAR	Payal	Payal	Payal	Payal	Payal	Payal	Payal	Payal
2	GRINISHA FALENDRA NANDGAVE	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
3	TULSHI CHANDRASEN BAGHELE	Baghele	Baghele	Baghele	Baghele	Baghele	Baghele	Baghele	Baghele
4	MOHINI ROSHANLAL BHOYAR	Mohini	Mohini	Mohini	Mohini	Mohini	Mohini	Mohini	Mohini
5	JANHVI HEMRAJ MISHRA	Janhvi	Janhvi	Janhvi	Janhvi	Janhvi	Janhvi	Janhvi	Janhvi
6	DILESHWARI OMPRAKASH GAYDHANE	Gaydhane	Gaydhane	Gaydhane	Gaydhane	Gaydhane	Gaydhane	Gaydhane	Gaydhane
7	MANISHA DHARMRAJ BANOTHE	Banotha	Banotha	Banotha	Banotha	Banotha	Banotha	Banotha	Banotha
8	DILESHWARI CHUDAMAN DASARIYA	Dasariya	Dasariya	Dasariya	Dasariya	Dasariya	Dasariya	Dasariya	Dasariya
9	SWATI PRAMOD SHAHARE	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
10	CHAITALI RAVINDRA MENDHE	Menndhe	Menndhe	Menndhe	Menndhe	Menndhe	Menndhe	Menndhe	Menndhe
11	TEJASI RAJENDRA CHUTE	Chute	Chute	Chute	Chute	Chute	Chute	Chute	Chute
12	PALLAVI VISHNUKANT BAHEKAR	Reahetkar	Reahetkar	Reahetkar	Reahetkar	Reahetkar	Reahetkar	Reahetkar	Reahetkar
13	HANID ABDULSATTAR SHEIKH	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
14	NEHA MUKESH MAHOBIYA	Neha	Neha	Neha	Neha	Neha	Neha	Neha	Neha
15	TRISHA RAVINDRA CHUTE	Trisha	Trisha	Trisha	Trisha	Trisha	Trisha	Trisha	Trisha
16	SEEMA VIJAY MESHAM	S.v.mesh	S.v.mesh	S.v.mesh	S.v.mesh	S.v.mesh	S.v.mesh	S.v.mesh	S.v.mesh
17	HIMANSHI ASHOK SHENDE	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
18	PAYAL KAILASH MESHAM	Meshram	Meshram	Meshram	Meshram	Meshram	Meshram	Meshram	Meshram
19	PUJA RAMU BARSE	Barise	Barise	Barise	Barise	Barise	Barise	Barise	Barise
20	LAXMI BALABHAU MAHARWADE	Laxmi	Laxmi	Laxmi	Laxmi	Laxmi	Laxmi	Laxmi	Laxmi
21	PRACHI SANTOSH HUKHARE	Prachi	Prachi	Prachi	Prachi	Prachi	Prachi	Prachi	Prachi
22	Hushali Sadashiv Kotewar	Wkotevar	Wkotevar	Wkotevar	Wkotevar	Wkotevar	Wkotevar	Wkotevar	Wkotevar
23	Devansh Rajkumar Kore	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
24	Priyanka Santosh Pathode	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
25	Satish Sukhram Shende	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

B.Sc. -I (2024-25)		Date	Date	Date	Date	Date	Date	Date	Date
Sr. No.	Name of Students	11/10/24	13/10/24	14/10/24	15/10/24	16/10/24	17/10/24	18/10/24	19/10/24
1	PAYAL MANOHAR BAHEKAR	Payal	Payal	Payal	Payal	Payal	Payal	Payal	Payal
2	GRINISHA FALENDRA NANDGAVE	AB	AB	AB	AB	AB	AB	AB	AB
3	TULSHI CHANDRASEN BAGHELE	Baghele	Baghele	Baghele	Baghele	Baghele	Baghele	Baghele	Baghele
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24	Priyanka Santosh Pathode	AB	AB	AB	AB	AB	AB	AB	AB
25	Satish Sukhram Shende	AB	AB	AB	AB	AB	AB	AB	AB

B.Sc. -I (2024-25)		Date	Date	Date	Date	Date	Date	Teacher Incharge
Sr. No.	Name of Students	21/10/24	22/10/24	23/10/24	24/10/24	25/10/24	26/10/24	
1	PAYAL MANOHAR BAHEKAR	payal	payal	payal	payal	payal	payal	① Mr. V.T. Rathod ② Mr. O.L. Patle ③ Mr. P.V. Bankar
2	GRINISHA FALENDRA NANDGAVE	AB	AB	AB	AB	AB	AB	
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9	SWATI PRAMOD SHAHARE	AB	AB	AB	AB	AB	AB	
10	CHAITALI RAVINDRA MENDHE	Frendke	Frendke	Frendke	Frendke	Frendke	Frendke	
11	TEJASI RAJENDRA CHUTE	Chute	Chute	Chute	Chute	Chute	Chute	
12	PALLAVI VISHNUKANT BAHEKAR	Bahakar	Bahakar	Bahakar	Bahakar	Bahakar	Bahakar	
13	HANID ABDULSATTAR SHEIKH	AB	AB	AB	AB	AB	AB	
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22	Hushali Sadashiv Kotewar	Ukotare	Ukotare	Ukotare	Ukotare	Ukotare	Ukotare	
23	Devansh Rajkumar Kore	AB	AB	AB	AB	AB	AB	
24	Priyanka Santosh Pathode	AB	AB	AB	AB	AB	AB	
25	Satish Sukhram Shende	AB	AB	AB	AB	AB	AB	

Certificate issued by student:

BHAWABHUTI MAHAVIDYALAYA, AMGAON (NAAC Reaccredited at 'B+' Grade with CGPA 2.64) DEPARTMENT OF CHEMISTRY (FACULTY OF SCIENCE AND TECHNOLOGY) ADD-ON COURSE ON "Chemical composition of pesticides and its impact on human being" SESSION 2024-25  This Certificate is awarded to <u>Teisha Ravindra chute</u>, Bhawabhuti Mahavidyalaya, Amgaon, in appreciation of completing Add-On course in "Chemical composition of pesticides and its impact on human being" during the academic session 2024-25. He / She has obtained grade <u>B</u>.  Co-Ordinator Add-On Course Mr. V.T.Rathod  Teacher In-Charge (Department of Chemistry) Mr.O.L. Patle  Principal Bhawabhuti Mahavidyalaya,Amgaon	The grades are as follows: <table border="1"> <tr><td>A</td><td>81% & Above</td></tr> <tr><td>B</td><td>61 to 80%</td></tr> <tr><td>C</td><td>41 to 60%</td></tr> <tr><td>D</td><td>40% & Below</td></tr> </table> The students securing D grade are required to repeat the programme. The total marks allotted are 100 and are distributed as follows: <table border="1"> <tr> <th></th> <th>Total Marks</th> <th>Marks Obtained</th> <th>Total</th> <th>Grade</th> </tr> <tr> <td>i) Theory Examination</td> <td>80</td> <td>65</td> <td rowspan="2">80</td> <td rowspan="2">B</td> </tr> <tr> <td>ii) Practical</td> <td>20</td> <td>15</td> </tr> <tr> <td>Total</td> <td>100</td> <td>80</td> <td></td> <td></td> </tr> </table>  Co-Ordinator Add-On Course Mr. V.T.Rathod  Teacher In-Charge (Department of Chemistry) Mr.O.L. Patle  Principal Bhawabhuti Mahavidyalaya, Amgaon	A	81% & Above	B	61 to 80%	C	41 to 60%	D	40% & Below		Total Marks	Marks Obtained	Total	Grade	i) Theory Examination	80	65	80	B	ii) Practical	20	15	Total	100	80		
A	81% & Above																										
B	61 to 80%																										
C	41 to 60%																										
D	40% & Below																										
	Total Marks	Marks Obtained	Total	Grade																							
i) Theory Examination	80	65	80	B																							
ii) Practical	20	15																									
Total	100	80																									

Syllabus of the Course:

Bhawabhuti Mahavidyalaya Amgaon

Department of Chemistry

Add-On Course (2024-25)

Course Title: *Chemical Composition of Pesticides and Their Impacts on Human Being*

Course Objectives:

By the end of this course, participants will be able to:

1. Understand the chemical composition of pesticides, including types, formulations, and active ingredients.
2. Identify the main classes of pesticides and their mechanisms of action.
3. Analyse the effects of pesticide exposure on human health.
4. Explore how pesticides enter the human body and potential routes of exposure.
5. Evaluate regulatory practices for pesticide use and safety.
6. Examine case studies on the human health impact of pesticides.

Course Structure with 30 Days:

Day 1: Introduction to Pesticides

- **Theoretical Topics:**
 - Definition, historical development, and scope of pesticide use.
 - Categories of pesticides: insecticides, herbicides, fungicides, rodenticides, and others.
 - Economic and agricultural importance of pesticides.
 - **Practical Component:**
 - Activity: Discuss real-world examples of pesticide use in agriculture and urban settings.
-

Day 2: History and Evolution of Pesticide Use

- **Theoretical Topics:**
 - Historical development of pesticide use in farming.
 - The rise of synthetic pesticides in the 20th century (e.g., DDT).
 - Environmental and health movements against pesticide overuse.
 - **Practical Component:**
 - Visit or virtual tour of a historical pesticide facility or archive to explore old practices.
-

Day 3: Chemical Families of Pesticides

- **Theoretical Topics:**
 - Overview of chemical families: organophosphates, carbamates, pyrethroids, etc.

- How each family interacts with pests and humans.
 - **Practical Component:**
 - Group activity: Break down pesticide labels to identify active ingredients and classify them into their respective chemical families.
-

Day 4: Chemical Composition and Molecular Structure of Pesticides

- **Theoretical Topics:**
 - Basic chemistry and molecular structure of pesticides.
 - Functional groups in pesticide molecules (e.g., esters, amides, halogens).
 - How chemical structure affects toxicity and effectiveness.
 - **Practical Component:**
 - Hands-on lab activity: Model pesticide molecular structures using molecular modeling kits or software.
-

Day 5: Pesticide Formulations and Concentration

- **Theoretical Topics:**
 - Types of formulations: emulsifiable concentrates, wettable powders, granules, and others.
 - Concentration and dilution factors in pesticide use.
 - **Practical Component:**
 - Lab exercise: Prepare different pesticide formulations based on specified concentrations and observe effectiveness.
-

Day 6: Mechanisms of Action in Pesticides

- **Theoretical Topics:**
 - Mode of action: neurotoxic, metabolic inhibition, and growth regulation.
 - Pesticide targets in the pest organism (e.g., nerve system, respiratory system).
 - **Practical Component:**
 - Case study review: Discuss and analyze the mechanisms of common pesticides like pyrethroids or organophosphates.
-

Day 7: Routes of Human Exposure to Pesticides

- **Theoretical Topics:**
 - Different routes of exposure: inhalation, dermal, ingestion.
 - Acute vs. chronic exposure and their consequences.
 - **Practical Component:**
 - Activity: Map common pathways of pesticide exposure in daily life (agriculture, household, food residues).
-

Day 8: Toxicology of Pesticides

- **Theoretical Topics:**
 - Pesticide toxicity at the cellular and systemic level.
 - Acute vs. chronic toxicity (LD50, LC50, etc.).
 - Target organs and systems of pesticide toxicity (nervous system, liver, kidney).
 - **Practical Component:**
 - Analyze real-life poisoning cases and determine probable causes based on pesticide toxicity profiles.
-

Day 9: Short-Term Health Impacts of Pesticides

- **Theoretical Topics:**
 - Symptoms and immediate effects of pesticide poisoning.
 - First aid and emergency response for pesticide exposure.
 - **Practical Component:**
 - Demonstration: Simulate emergency response procedures for pesticide exposure (CPR, decontamination).
-

Day 10: Long-Term Health Effects of Pesticides

- **Theoretical Topics:**
 - Cancer, neurological disorders, and endocrine disruption.
 - Chronic diseases associated with pesticide exposure (Parkinson's, reproductive effects).
 - **Practical Component:**
 - Case study: Analyze epidemiological studies that link pesticide exposure with chronic diseases.
-

Day 11: Pediatric and Vulnerable Populations' Risks

- **Theoretical Topics:**
 - Risk factors for children, pregnant women, and elderly populations.
 - Physiological differences that increase vulnerability to pesticides.
 - **Practical Component:**
 - Survey: Investigate local communities for exposure risks, focusing on vulnerable groups.
-

Day 12: Environmental Impact of Pesticides

- **Theoretical Topics:**
 - Pesticide runoff, soil, and water contamination.
 - Effects on non-target organisms: birds, fish, pollinators.
- **Practical Component:**
 - Field activity: Test local soil and water samples for pesticide residues.

Day 13: Bioaccumulation and Biomagnification

- **Theoretical Topics:**
 - The processes of bioaccumulation and biomagnification in ecosystems.
 - Long-term environmental effects on food chains.
 - **Practical Component:**
 - Lab experiment: Track pesticide levels in the food chain through simple simulations or case studies.
-

Day 14: Global Regulatory Framework for Pesticides

- **Theoretical Topics:**
 - Regulatory bodies: EPA, WHO, FAO, and their roles in pesticide safety.
 - International agreements and pesticide bans (e.g., the Stockholm Convention).
 - **Practical Component:**
 - Debate: Discuss the role of regulation in minimizing pesticide risks and the effectiveness of global bans.
-

Day 15: Pesticide Residues and Food Safety

- **Theoretical Topics:**
 - Detection and measurement of pesticide residues in food.
 - Impact on human health and food safety.
 - **Practical Component:**
 - Lab work: Test fruits or vegetables for pesticide residues using available detection methods.
-

Day 16: Integrated Pest Management (IPM)

- **Theoretical Topics:**
 - Principles of IPM: prevention, monitoring, and control.
 - Benefits and challenges of IPM.
 - **Practical Component:**
 - Design an IPM plan for a local farm or garden, integrating both chemical and non-chemical control methods.
-

Day 17: Biological and Ecological Control Alternatives

- **Theoretical Topics:**
 - Biological control: using predators, parasites, and diseases.
 - Ecological alternatives to synthetic pesticides.
- **Practical Component:**

- Research project: Investigate and present an alternative biological control method for a common pest.
-

Day 18: Organic Pesticides and Their Use

- **Theoretical Topics:**
 - Types of organic pesticides (e.g., neem oil, diatomaceous earth).
 - How organic pesticides compare to chemical ones.
 - **Practical Component:**
 - Workshop: Compare the effectiveness of organic pesticides vs. chemical ones in small-scale gardening.
-

Day 19: Risk Assessment in Pesticide Use

- **Theoretical Topics:**
 - Methodology for assessing pesticide risk (exposure assessment, hazard identification).
 - Risk-benefit analysis in pesticide use.
 - **Practical Component:**
 - Conduct a pesticide risk assessment for a specific crop or scenario.
-

Day 20: Personal Protective Equipment (PPE) for Pesticide Application

- **Theoretical Topics:**
 - Types of PPE (gloves, masks, protective clothing).
 - Standards for PPE usage in pesticide application.
 - **Practical Component:**
 - Demonstration: Proper usage and fitting of PPE during pesticide handling.
-

Day 21: Pesticide Disposal and Environmental Protection

- **Theoretical Topics:**
 - Safe pesticide disposal methods.
 - Best practices for minimizing pesticide contamination of water and soil.
 - **Practical Component:**
 - Visit a local pesticide disposal site or waste management facility to observe and learn about safe disposal methods.
-

Day 22: Pesticides in the Agricultural Supply Chain

- **Theoretical Topics:**
 - How pesticides enter the food chain.
 - Supply chain dynamics: from farm to table.
- **Practical Component:**

- Trace a common pesticide through the agricultural supply chain (field to market).
-

Day 23: Public Health Campaigns and Advocacy

- **Theoretical Topics:**
 - Role of public health campaigns in reducing pesticide risks.
 - Successful campaigns and their impact on policy change.
 - **Practical Component:**
 - Plan and present a public health campaign targeting pesticide safety awareness.
-

Day 24: International Pesticide Use and Global Impact

- **Theoretical Topics:**
 - The global pesticide trade and its effects on developing countries.
 - Case studies of pesticide misuse in developing regions.
 - **Practical Component:**
 - Research project: Compare pesticide use and regulation in two different countries.
-

Day 25: Emerging Research in Pesticide Chemistry

- **Theoretical Topics:**
 - New pesticide formulations and their safety profiles.
 - Advances in non-toxic alternatives and biopesticides.
 - **Practical Component:**
 - Present on a recent scientific paper or research study on new pesticide technologies.
-

Day 26: Case Studies on Pesticide-Induced Health Issues

- **Theoretical Topics:**
 - Real-world examples of pesticide-related health incidents.
 - Lessons learned from past pesticide disasters.
 - **Practical Component:**
 - Review and discuss case studies, such as the effects of DDT or chlorpyrifos.
-

Day 27: Ethical Considerations in Pesticide Use

- **Theoretical Topics:**
 - Ethical issues related to pesticide use in agriculture and public health.
 - Balancing economic, environmental, and human health concerns.
- **Practical Component:**
 - Debate: Should pesticide use be regulated more strictly, or are current practices adequate?

Day 28: Innovations in Pesticide-Free Farming

- **Theoretical Topics:**
 - Pesticide-free farming methods, including permaculture and agroecology.
 - Benefits of pesticide-free food production.
 - **Practical Component:**
 - Fieldwork: Help implement a pesticide-free farming technique on a small plot.
-

Day 29: The Future of Pesticides and Public Health

- **Theoretical Topics:**
 - Future challenges in pesticide use and human health.
 - The role of genetics and technology in reducing pesticide dependency.
 - **Practical Component:**
 - Group discussion: Predict the future landscape of pesticide use and regulation.
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Day 30: Final Assessment and Course Review

- **Theoretical Topics:**
 - Review of key concepts from the entire course.
 - Final exam or project presentation.
- **Practical Component:**
 - Present a final project or research paper on a specific pesticide's impact or an innovative solution to reduce pesticide use.

Course Coordinator

Mr. Vishal T. Rathod

Teacher in charge

- 1) **Mr. Omprakash L. Patle**
- 2) **Mr. Parmeshwar V. Bankar**