Rayat Shikshan Sanstha's

Sadguru Gadge Maharaj College, Karad

(An Empowered Autonomous College)

Accredited By NAAC with A^+ Grade (CGPA 3.63)

Syllabus under Autonomy For

B. Sc. I (Plant Protection)

Syllabus to be implemented from June 2025 onwards of

Academic Year 2025 - 2026

Rayat Shikshan Sanstha's

Sadguru Gadge Maharaj College, Karad.

(An Empowered Autonomous College)

Syllabus to be introduced from June 2025

Bachelor of Science (B. Sc.) Part - I: Plant Protection

Semester: I

Theory Paper I (BPPT24-101): Fundamentals of Plant Pathology (Credits 02)

Course Objectives:

1. To understand the basic knowledge about plant diseases.
2. To imbibe the knowledge of effect of fungicides.
3. To gain the knowledge about principles of plant disease management.
4. To impart the knowledge about management of crop diseases by IDM.

Unit I Concept of Plant Diseases **08**

1.1 Introduction, Importance, Scope and Causes of Plant Diseases

1.2 Terminologies in Plant Pathology, Disease triangle Concept.

1.3 Symptoms and signs of plant diseases.

1.4 Dissemination of plant pathogens.

1.5 Survival of plant pathogens.

Unit II Plant Diseases **07**

2.1 Study of plant diseases with respect to symptoms, causal organism, disease cycle and their management.

A. Cereals a) Wheat – i) Black stem rust.

b) Jowar – i) Grain smut.

B. Pulses a) Bean -i) Anthracnose

C. Vegetables a) Tomato - i) Late blight of Tomato/Early blight of

b) Amaranthus - i) White rust.

D. Oil seed crop a) Groundnut - i) Tikka disease.

b) Sunflower - i) Any other available disease.

Unit III General methods of plant protection. **07**

3.1 Cultural methods – Tillage, crop rotation, trap crops, fertilizer applications

3.2 Mechanical methods – Field sanitation, Hand picking, destruction of egg masses, light traps, use of sticky bands, bagging for the pests.

3.3 Physical methods – Heat and soil solarization

Unit IV Integrated Disease Management **08**

4.1 Definition and importance of IDM

4.2 Main components of integrated disease management (IDM).

4.3 Host resistance

4.4 Induced systemic resistance

4.5 Genetically improved plants

Course Outcomes:

1. Student's explain effect of environmental factors on disease development.
2. Student's get the knowledge about fungicides.
3. Student's apply the methods used for plant disease management.
4. Student's gain the knowledge about integrated disease management.

Reference Books:

1. Jain V., 2009 Laboratory Manual of Plant Pathology. Oxford Book, Calcutta.
2. Agrios G. 2005 Plant Pathology. (5thEdn.), Academic Press, San Diego.
3. Aneja K., 2005. Experiments in Microbiology Plant Pathology and Tissue Culture. New Age International (P) Ltd. Publishers, New Delhi.
4. Bilgrami K. 1990. Textbook of Modern Plant Pathology. New edition, New Delhi.
5. Chattopadhyay S., 1987 Principles and procedures of plant protection. Oxford & IBH Publishing Co. Pvt. Ltd, New Delhi.
6. Baruah H., 1984 Text Book of Plant Pathology. Oxford and IBH Publ. Co., New Delhi.
7. Mehrotra R., and Aggarwal A., 1980 Fundamentals of Plant Pathology. McGraw-Hill Education Pvt. Ltd., New Delhi.
8. Butler & Edwin. 1949. Plant Pathology. Macmillan & Co.

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Syllabus to be introduced from June 2025

Bachelor of Science (B. Sc.) Part - I: Plant Protection

Semester I

Theory Course II (BPPT24-102): Entomology (Credits 02)

Course Objectives:

1. To know the basic knowledge about insects and their body parts.
2. To update the knowledge of Entomology.
3. To understand the knowledge about formulation and uses of insecticides.
4. To discuss about biocontrol agents and apply this knowledge for pest control.

Unit I Introduction to Entomology 08

1.1 Introduction and history of entomology in India including contribution of any two Scientist.

1.2 Definitions: Insect, Entomology and Agro-entomology

1.3 Economic importance of insects: Harmful, beneficial and productive insects.

1.4 Body segmentation: Structure of head, thorax and abdomen.

Unit II Plant Insect Pests **07**

2.1 Study of major pests with reference to scientific name, marks of identification, host range, life cycle, perpetuation, nature of damage and management

a) Cereals -Paddy - Leaf hopper.

b) Pulses - Green Peas - Pod borer.

c) Vegetables -Brinjal - Fruit borer.

d) Fruits- Custard apple - Mealy bugs.

e) Ornamentals - Rose - Aphids

f) Polyphagus insect pests – i) White Grub

ii) Whitefly.

Unit III Importance of toxicological study **07**

3.1 Toxicity : Definition, types: - acute & chronic

3.2 L.D.-50, Color code, Antidotes

3.3 General precautions regarding to uses of pesticides

3.4 Limitations of Chemical control.

3.5 Biological control of insect pests:

Unit IV Insecticides **08**

4.1 Definition, classification, characters of an any two insecticide.

4.2 Study of major insecticides with respect to properties, formulations, methods of application, mode of action and uses.

4.2.1 Plant origin insecticides- Azadirachtin

4.2.2 Chlorinated hydrocarbons - Endosulfan.

4.2.3 Organophosphate - Malathion.

4.2.4 Carbamate- Carbaryl.

4.2.5 Synthetic Pyrethroids- Cypermethrin

4.2.6 Nematicides- Nemagon

4.2.7 Rodenticides- Zinc Phosphoide

Course Outcomes:

1. Student's explain importance of beneficial insects.
2. Student's apply the management practices for different field pests.
3. Student's understand formulation and uses of insecticides.
4. Student's update the knowledge and concept of Entomology.

Reference Books:

1. Dhaliwal G.S., 2015. Element of Agricultural Entomology. Published by Kalyani Publishers, New Delhi (ISBN: 978-93-272-5134-0).
2. Conrad Ross, 2013. Natural beekeeping: organic approaches to modern apiculture. Chelsea Green Publishing.
3. Butt, Tariq M., Chris Jackson, and Naresh Magan, 2001. Fungi as biocontrol agents: progress, problems and potential. CABI publishing.
4. Srivastava K. P. and Dhaliwal G. S. A text book of Applied Entomology, Vol. II, Kalyani Publisher.
5. David B. V., and Rammurthy V. V., Elements of Economic Entomology Namrutha Publications (7th Edition).
6. Ragumoorthy K. N., Srinivasan M. R., Balasubramani V., and Natarajan N. A. E. Principles of Applied Entomology. Publication, Coimbatore.
7. Tembhare D. B., Modern Entomology. Himalaya Publishing House (ISBN : 978-93-5051-828-1).
8. Dhaliwal G. S., Ram Singh and Chillar B. S. Essentials of Agricultural Entomology. Kalyani Publisher.

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Syllabus to be introduced from June 2025

Bachelor of Science (B. Sc.) Part - I Plant Protection

Practical Course -I (BPPP24-103)

(Practicals based on Theory Courses I and II) **(Credits 02)**

Course Objectives:

1) To familiarize the students with general plant pathological equipment's and pathological procedures.
2) To learn the plant diseases with respect to symptoms, causal organisms, disease cycle and management.
3) To learn the insect pests with respect to marks of identification nature of damage and management.
4) To impart the knowledge about integrated disease management.

Sr. No.	Name of Practical's
1	Study of component and uses of general plant pathological equipment's like compound microscope, autoclave, laminar air flow, incubators and hot air oven.
2	Study of plant diseases of Cereals a) Black stem rust of wheat. b) Grain smut of Jowar
3	Study of plant diseases of Pulses a) Anthracnose of Bean
4	Study of plant diseases of Vegetables a) Late/Early blight of Tomato b) White rust of *Amaranthus*
5	Study of plant diseases of Oil seed crop a) Tikka disease of groundnut b) Any other available disease of Sunflower
6	Determination of sucrose % by hand refractometer.
7	Study of Methods of collection and preservation of insects including immature stages
8 & 9	Study of major pests with reference to scientific name, marks of identification, host range, life cycle, nature of damage and management A. Cereals a) Paddy - Leaf hopper. B. Pulses a) Green Peas - Pod borer.

C. Vegetables a) Brinjal - Fruit borer.

D. Fruits a) Custard apple - Mealy bugs.

E. Ornamentals a) Rose - Aphids

F. Polyphagous insect pests –i) White Grub

ii) Whitefly.

10 Study of Insecticides (As per theory).

11 Collection of Insect pests and plant diseases.

Course Outcomes:

1) Student's learn and use all plant pathological procedures
2) Student's demonstrate the methods used for estimation of sucrose % in plants.
3) Student's apply the different methods for disease management.
4) Student's identify different types of insects and their proper management.

Reference Books:

1. Jain V., 2009. Laboratory Manual of Plant Pathology. Oxford Book, Calcutta.
2. Havlin J., Beaton J., Tisdale S., & Nelson W., 2006. Soil Fertility and fertilizers. 7th Ed. Prentice Hall.
3. Agrios G., 2005. Plant Pathology. (5thEdn.), Academic Press, San Diego.
4. Aneja K., 2005. Experiments in Microbiology Plant Pathology and Tissue Culture. New Age International (P) Ltd. Publishers, New Delhi.
5. Brady N., & Weil R., 2002. The Nature and Properties of Soils. 13th Ed. Pearson Edu.
6. Yawalkar K., Agrawal J., & Bokde S., 2000. Manures and Fertilizers. Agri-Horti Publ.
7. Prasad R., & Power J., 1997. Soil Fertility Management for Sustainable Agriculture. CRC Press.
8. Mehrotra R., and Aggarwal A., 1980. Fundamentals of Plant Pathology. McGraw-Hill Education Pvt. Ltd., New Delhi.

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Syllabus to be introduced from June 2025

Bachelor of Science (B. Sc.) Part - I: Plant Protection (OE)

Semester I : OEPP 24-101 Green Manure

Course Objectives:

1. To understand the basic knowledge of Green manure.
2. To gain knowledge about different types of green manure crops.
3. To understand the knowledge of soil fertility improvement through organic biomass addition.
4. To understand cultivation techniques and incorporation methods of green manure crops.

Name of Practical's

1. Introduction to Green Manures and their Role in Soil Fertility
2. Identification of Common Green Manure Crops (e.g., Sunnhemp, Dhaincha, *Sesbania*, Cowpea, Cluster bean, etc.)
3. Study of Botanical Characteristics of Green Manure Crops
4. Demonstration of Seed Treatment and Sowing Methods of Green Manure Crops
5. Estimation of Biomass Production of a Green Manure Crop
6. Incorporation of Green Manure into Soil – Method and Timing
7. Study of Nutrient Enrichment of Soil after Green Manure Incorporation
8. Comparison of Green Manuring with Other Organic Inputs (FYM, Compost, Vermicompost)
9. Demonstration of Green Leaf Manuring using Locally Available Trees (e.g., *Glyricidia, Pongamia*)
10. Field Visit: Observation of Green Manure Practice in a Farmer's Field.

Learning Outcomes-Green Manure

After completing the practical and theoretical study of Green Manure, students will be able to:

1. Define and Explain the concept of green manure and its importance in sustainable agriculture.
2. Identify commonly used green manure crops such as *Sesbania (Dhaincha)*, *Crotalaria (Sunnhemp)*, *Cowpea*, and *Cluster bean*.
3. Describe the botanical and agronomic characteristics of major green manure crops.

Reference Books:

Brady, N.C. & Weil, R.R. (2016). *The Nature and Properties of Soils*. 15th Ed. Pearson.

Tandon, H.L.S. (1995). *Organic Farming and Green Manuring*. FDCO.

Ghosh, P.K. et al. (2012). *Organic Farming: Scope and Relevance*. ICAR Publication.

Indian Council of Agricultural Research (ICAR), *Handbook of Agriculture*, Chapter on Organic Manures.

Subba Rao, N.S. (2017). *Soil Microbiology*. Oxford & IBH.

Tandon, H.L.S. (2004). *Fertilizer, Organic Manure and Biofertilizer Use*. FDCO.

ICAR (2020). *Package of Practices for Organic Farming*.

Singh, S.S. (2001). *Soil Fertility and Nutrient Management*. Kalyani Publishers.

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Syllabus to be introduced from June 2025

OEPP24-101 Green Manure

1. हरित खतांची ओळख व शेतीतील महत्त्व अभ्यासणे
2. प्रमुख हरित खत पिकांची ओळख करणे (सुनहेम्प, ढैंचा, सेसबानिया, चवळी, गुग्गुळी इ.)
3. हरित खत पिकांची वनस्पतिशास्त्रीय वैशिष्ट्ये अभ्यासणे
4. हरित खत पिकांच्या बियाण्यांची प्रक्रिया व पेरणी पद्धतीचे प्रात्यक्षिक
5. हरित खत पिकांचे जैवभार (Biomass) मोजणे
6. हरित खत पिकांचे जमिनीत समावेशन पद्धत व योग्य काळ अभ्यासणे
7. हरित खतांच्या वापरानंतर मातीतील पोषकतत्वांचा अभ्यास
8. हरित खते व इतर सेंद्रिय खते (FYM, कंपोस्ट, वर्मी-कंपोस्ट) यांची तुलना
9. स्थानिक उपलब्ध झाडांद्वारे हरित पान खतांचा वापर (उदा. ग्लायरीसिडिया, करंज, पांगारा)
10. शेती भेट : शेतकऱ्यांच्या शेतात हरित खत पिकांचा वापर अभ्यासणे

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Syllabus to be introduced from June 2025

Bachelor of Science (B. Sc.) Part - I: Plant Protection (GE)

Semester: II

Theory Course III (BPPT24-201): Weed Biology **(Credits-02)**

Course Objectives:

1.To understand the basic knowledge of ecology of weeds.

2.To apply the methods for integrated weed management.

3.To update the knowledge about the certification of organic farm products.

4.To impart the knowledge about weed biology.

Unit I Weed Biology and Ecology Weeds **07**

1.1 Weed - Introduction, types of weeds.

1.2 Harmful and beneficial effects.

1.3 Critical periods of crop weed competition and allelopathy.

1.4 Propagation, dissemination and weed seed dormancy.

1.5 Weed biology and ecology

Unit II Traditional methods of weed management **08**

2.1 Weed management principles.

2.2 Methods- preventive, physical, cultural, biological.

2.3 IWM (Integrated Weed Management)

Unit III Organic Methods of Weed Management **07**

3.1 Thermal Weed Control.

3.2 Soil Solarization and mulching. Mechanical Weed

3.3 Management Stale Seed bed.

3.4 Crop Rotation.

Unit IV Certification of organic farming Products **08**

4.1 Organic certification Standards and regulations

4.2 Operational Structure of NPOP- Other agencies for organic production

4.3 Inspection, Certification, Labeling and accreditations procedures for organic products

Course Outcomes:

After successful completion of this course, students will be able to:

1. Explain the concept, importance, and historical significance of green manure in sustainable agriculture.
2. Identify and classify various green manure crops, including leguminous and non-leguminous species.
3. Describe the role of green manure in improving soil fertility, organic matter content, and soil structure.
4. Analyze the effect of green manure on weed suppression, pest control, and overall crop productivity.

Reference Books:

Agrawal 2018. Edition, reprint, revised; Publisher, Oxford and IBH Publishing Company Pvt. Limited; ISBN, 8120409949.

Joshi A.K., and Singh B.D. 2017. Seed Science and Technology; Edition. Revised; Publisher. Kalyani Publishers.

Basra A. S., ed. 2007. Handbook of seed science and technology. Scientific Publishers. Hutchins J.D., and Reeves J.E. (Eds.). 1997. Seed Health Testing: Progress Towards the 21st Century. CABI, Wallington.

Agarwal V.K., and Sinclair J.B., 1993. Principles of Seed Pathology. Vols. I and II, CBS Publ., New Delhi.

Paul N. 1988. Seed Pathology. MacMillan, London.

Agarwal R.N., 1982. Seed Technology; Author, R. L. Agrawal; Publisher, Oxford, and IBH Publishing.

Suryanarayana D., 1978. Seed Pathology. Vikash Publ., New Delhi.

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Bachelor of Science (B. Sc.) Part - I: Plant Protection

Semester: II

Theory Course IV (BPPT24-202): Emerging Trends in Plant Protection

(Credits 02)

Course objectives:

1. To explain the basic knowledge about importance of biofertilizers.
2. To understand the knowledge culture of bacteria and fungi.
3. To acquire the knowledge about botanical and bacterial biopesticides.
4. To apply the knowledge about preparation vermicomposting in field.

Unit I- Precision Agriculture

1.1 Precision Agriculture: Definition, Decision making and Planning

1.2 Benefits of Precision Agriculture: a) Economic benefits

b) Improvement in farm management practices

c) Administration, record keeping, and marketing.

1.3 Agri market Apps – Kisan Suvidha.

Unit II- Intelligent Devices and Instruments

2.1 Intelligent Devices and Instruments (IDI devices) usage in Precision Agriculture: Yield monitor, Variable Rate Technology (VRT) Application (Fertilizer).

2.2 Weather forecasting: Design and functions of Soil thermometer, Hair hygrometer, rain Gauge, Anemometer

2.3 Use of pesticide by Drone technology

Unit III- Organic Farming

3.1 Organic farming: Definition, concept, principles, Need of organic farming and its status in India.

3.2 Advantages and challenges of organic farming.

3.3 Types of organic farming (Pure, Integrated)

3.4 National Mission on Organic farming, Case Study/success story - Subhash Palekar

3.5 Traditional techniques in Organic Farming: a. Biofertilizers: Jivamrut, Dashparni Ark

b. Biopesticides and Repellents: Neem and Garlic

Unit IV- Modern techniques in organic farming

4.1 Modern techniques in organic farming-

a. Biological Control Agents: Fungal Bioagents: *Trichoderma* (to control soil-borne fungi); Predatory insects: Ladybugs (to control aphids), Lacewings (to control whiteflies)

b. Microorganisms for Soil Health: VAM fungi C. Biological Fertilizers: Rhizobium

4.2 Applications of Artificial Intelligence (AI) in modern farming.

Course Outcomes:

1. Student's discuss about the need and importance of biofertilizers
2. Student's explain importance of VAM
3. Student's realize the importance of botanical biopesticides
4. Student's demonstrate the preparation method of vermicomposting and FYM.

Reference Books:

- Ortiz A., and Estibaliz S., 2022. The role of beneficial microorganisms in soil quality and plant health. *Sustainability* 14, no. 9 : 5358.
- Abbey L., Joel A., Adedayo L.A., Ekene Mark- A.I., and Mercy I., 2019. Biopesticides and biofertilizers: types, production, benefits, and utilization. Byproducts from Agriculture and Fisheries*:* Adding Value for Food, Feed, Pharma, and Fuels: 479-500.
- Kumar V.V., 2018. Biofertilizers and biopesticides in sustainable agriculture. Role of Rhizospheric Microbes in Soil: Volume 1: Stress Management and Agricultural Sustainability : 377-398.
- Saleem F. and Shakoori A.R., 2012. Development of Bio insecticide, Lambert Academic Publishing, Latvia, European Union.
- Mahendra K. R., 2005. Hand book of Microbial biofertilizers. The Haworth Press,Inc. New York.
- Kannaiyan S., 2003. Biotechnology of Biofertilizers. CHIPS, Texas.
- Reddy S.M., 2002. Bioinoculants for sustainable agriculture and forestry. Scientific Publishers, Jodhpur.
- Subba Rao N.S., 1995. Soil microorganisms and plant growth Oxford and IBHpublishing co. Pvt. Ltd. New Delhi.

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Bachelor of Science (B. Sc.) Part - I: Plant Protection

Practical Course II (BPPP24-203)

Practical's based on Theory Paper III and IV **(Credits 02)**

Course Objectives:

1. To imparts knowledge about Weeds and their management.
2. To learn about preparation methods for vermicomposting, vermiwash, and Biofertilizers.
3. To apply the knowledge about cultivation and use of green manures in field.
4. To understand the knowledge about mass multiplication of *Azolla*.

1 - 4	Study of common weeds of field crops **Dicot Weeds**: *Argemone mexicana, Parthenium hysterophorus, Amaranthus spinosus, Alternanthera sessilis, Euphorbia hirta*, *Celosia argentea* **Monocot Weeds**: *Cyperus rotundus, Cynodon dactylon*
5	Study of mechanism of dispersal of weed seed.
6	Introduction to Precision Agriculture Tools and Techniques
7	Study of GPS (Global Positioning System) and its Application in Agriculture
8	Introduction to Intelligent Devices and Instruments used in Precision Agriculture
9	Study of Different Organic Manures (FYM, Vermicompost, Green Manure, Jeevamrut, etc.)
10	Demonstration of Green Manure Crops and their Role in Soil Fertility
11	Introduction to Modern Techniques in Organic Farming
12	Use of ICT Tools (Mobile Apps) in Modern Organic Farming Practices
13	Field Visit: Observation of Modern Organic Farming Practices in a Model Farm

Course Outcomes:

1. Student's identified and classifies the weeds.
2. Student's update the knowledge preparation methods for vermicomposting, vermi -wash, and Biofertilizers.
3. Student's apply the methods used for mass multiplication of *Azolla* biofertilizer.
4. Student's know the procedure for certification of organic farming product.

Reference Books:

1. Awan D.A., Mushtaq A.S., Muhammad S.N, and Shakoori A.R., 2012. Toxicological and biochemical studies on spinosad and synergism with piperonyl butoxide in susceptible and resistant strains of Tribolium castaneum. Pak. J. Zool 44: 649-662.
2. Rai M., ed. 2006. Handbook of microbial biofertilizers. CRC Press.
3. Rai MK., 2006 Microbial biofertilizers. Haworth press, Inc 10: 13904-1580.
4. Banerjee M.R., Laila Y., Joseph K.V., and M. Rai M., 2006. Plant-growth-promoting rhizobacteria as biofertilizers and biopesticides. Handbook of microbial biofertilizers. Food Products Press, New York: 137-181.
5. Board N.I.I.R. 2004. The complete technology book on bio-fertilizer and organic farming. National Institute of Industrial Re.
6. Kannaiyan S., 2002. Biotechnology of biofertilizers. Springer Science & Business Media.
7. Reddy S.M., 2002 Bioinoculants for sustainable agriculture and forestry. Scientific Publishers, Jodhpur.
8. Subba Rao N.S. 1995. Soil microorganisms and plant growth. Oxford and IBH publishing co. Pvt. Ltd. New Delhi.

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Bachelor of Science (B. Sc.) Part - I: Plant Protection

Semester II: OEPP24-201 Biopesticides

(Credits 02)

Learning Objectives

To understand various microbial agents used as biopesticides
To study the mode of action and application techniques
To study plant-derived and biochemical compounds used as pest control agents
To learn about eco-friendly alternatives in pest management

1.Introduction to Biopesticides -Types and Importance

2.Study of Bacterial Biopesticides (Bacillus thuringiensis)

3.Study of Fungal Biopesticides (Trichoderma spp.)

4.Study of Botanical Biopesticides (Neem & Pyrethrum)

5.Preparation of Neem Seed Kernel Extract (NSKE) as a Biopesticide

6.Demonstration of Biopesticide Formulation Techniques

7.Demonstration of Application Methods of Biopesticides in Crop Protection

8.Comparative Study of Biopesticides and Chemical Pesticides

9.Role of Biopesticides in Integrated Pest Management (IPM)-Case Study / Field Visit

Learning Outcomes

Students will be able to explain the importance of biopesticides in sustainable agriculture
Students will differentiate between chemical pesticides and biopesticides
Students will identify different categories of biopesticides

Reference Books:

- Gupta, P.K. (2004). *Methods in Environmental Analysis: Water, Soil and Air*. Agrobios (India).
- Ignacimuthu, S. (2005). *Biotechnology and Bioinformatics*. Narosa Publishing House.
- Miller, G.T. (2012). *Living in the Environment*. Cengage Learning.
- Srivastava, K.P. & Singh, R.P. (2009). *A Textbook of Applied Entomology*. Vol. II. Kalyani Publishers.
- Chet, I. (1993). *Biotechnology in Plant Disease Control*. Wiley-Liss, New York.
- Government of India – Central Insecticides Board & Registration Committee (CIBRC) guidelines on biopesticides.
- Selected research papers from *Indian Journal of Agricultural Sciences* and *Journal of Biopesticides*.

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Bachelor of Science (B. Sc.) Part - I: Plant Protection

Semester II: OEPP24-201 Biopesticides

1. जैव कीटकनाशकांची ओळख व वर्गीकरण अभ्यासणे
2. बॅक्टेरिया-आधारित जैव कीटकनाशकांचा अभ्यास (उदा. *Bacillus thuringiensis*)
3. बुरशीजन्य जैव कीटकनाशकांचा अभ्यास (उदा. *Trichoderma*)
4. वनस्पतीजन्य जैव कीटकनाशकांचा अभ्यास (उदा. नीम अर्क, पायरेथ्रम)
5. जैव कीटकनाशकांच्या फॉर्म्युलेशन व त्यांची फवारणी पद्धत अभ्यासणे
6. जैव कीटकनाशकांचा किडींवर होणारा परिणाम निरीक्षण करणे
7. जैव कीटकनाशकांचा रासायनिक कीटकनाशकांशी तुलनात्मक अभ्यास
8. जैव कीटकनाशकांचा वापर समन्वित कीड व्यवस्थापन (IPM) मध्ये कसा होतो हे अभ्यासणे
9. स्थानिक शेतभेट : जैव कीटकनाशकांचा वापर प्रत्यक्ष शेतात निरीक्षण करणे

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Department of Botany & Plant Protection

Evaluation Pattern: B.Sc. I Plant Protection

(w.e.f. June 2025)

Sem.	Paper Code	Credits	Title of Paper	Evaluation Scheme (Marks)			Grand Total Marks
				CCE	SEE	Total	
I	BPPT24-101	02	Fundamentals of Plant Pathology	10	40	50	200
	BPPT24-102	02	Entomology	10	40	50	
	BPPP24-103	02	Plant Protection Practical I	-	50	50	
	OEPPP24-101	02	Green Manures	-	50	50	
II	BPPT24-201	02	Weed Biology	10	40	50	200
	BPPT24-202	02	Emerging Trends in Plant Protection	10	40	50	
	BPPP24-203	02	Plant Protection Practical II	-	50	50	
	OEPPP24-201	02	Biopesticides	-	50	50	
Total		16		40	360	400	400

SEE-Semester End Examination**, CCE-** Continuous Comprehensive Evaluation

Nature of question paper and evaluation scheme:

❖ Evaluation Scheme

- Separate passing for Theory, Practical and internal examination is mandatory.
- In theory examination (**SEE-** Semester End Examination) passing for each paper is at **32** marks (40% of 80marks).
- In internal examination (**CCE-** Continuous Comprehensive Evaluation) passing for each paper is at **08** marks (40% of 20marks).
- In practical examination (**SEE-** Semester End Examination) passing is at 20 marks (40% of 50 marks).

Department of Botany & Plant Protection
Nature of SEE Question Papers
(w.e.f. June 2025)

Que. 1. Select correct alternative. 08

1. .....

a) ..... **b)** .....
c) ..... **d)** .....

2. .....

a) ..... **b)** .....
c) ..... **d)** .....

3. .....

a) ..... **a)** .....
c) ..... **c)** .....

4. .....

a) ..... **a)** .....
c) ..... **c)** .....

5. .....

a) ..... **a)** .....
c) ..... **c)** .....

6. .....

a) ..... **b)** .....
c) ..... **d)** .....

7. .....

a) ..... **b)** .....
c) ..... **d)** .....

8. .....

a) ..... **b)** .....
c) ..... **d)** .....

Que. 2. Attempt any two. 16

A) .....
B) .....
C) .....

Que. 3. Attempt any four. 16

a) .....
b) .....
c) .....
d) .....
e) .....
f) .....

Department of Botany & Plant Protection

For academic year: 2025-26

List of Paper setters

Sr. No.	Name of Paper setter	College
1	Dr. V. K. Nikam	S.G.M. College, Karad
2	Dr. (Mrs.) M. S. Patil	S.G.M. College, Karad
3	Dr. K. H. Patil	S.G.M. College, Karad
4	Dr. A. V. Waghmode	S.G.M. College, Karad
5	Prof. Dr. D. D. Namdas	YCIS Satara
6	Dr. J. J. Chavan	YCIS Satara
7	Dr. S. D. Shaikh	RCSC Kolhapur
8	Dr. Mrs. R. A. Shinde	YCIS Satara
9	Dr. N. M. Pise	K. B. P. College, Pandharpur

Department of Botany For academic year: 2025-26

List of Examiners

Sr. No.	Name of Examiners	College
1	Prof. Dr. D. D. Namdas	YCIS Satara
2	Dr. J. J. Chavan	YCIS Satara
3	Dr. S. D. Shaikh	RCSC Kolhapur
4	Dr. Mrs. R. A. Shinde	YCIS Satara
5	Dr. N. M. Pise	K. B. P. College, Pandharpur
6	Dr. H. S. Patil	Arts, Science and Commerce College, Baramati
7	Dr. S. R. Valvi	Nowrosjee Wadia College, Pune
8	Dr. U. R. Pawar	Shri Pancham Khemraj Mahavidyalaya, Sawantwadi
9	Dr. U. H. Patil	Bhogavati Mahavidylaya, Kurukali
10	Dr. S. K. Mengane	M. H. Shinde Mahavidyalaya, Tisangi

Department of Botany
For academic year: 2025-26

List of Moderators

Sr. No.	Name of Moderators	College
1	Prof. Dr. D. D. Namdas	YCIS Satara
2	Dr. J. J. Chavan	YCIS Satara
3	Dr. S. D. Shaikh	RCSC Kolhapur
4	Dr. N. M. Pise	K. B. P. College, Pandharpur
5	Dr. H. S. Patil	Arts, Science and Commerce College, Baramati