V Semester

Course 14 A: Organic Farming

Credits -3

I. I. Learning Objectives: By the end of this course the learner has:

1. To know the beneficial aspects of organic farming against chemical farming.
2. To gain knowledge about soil fertility, organic pest and disease management strategies.
3. To understand the organic certification process, including the standards and regulations that govern organic farming practices.

II. Learning Outcomes: Students at the successful completion of the course will be able to:

1. Compare and contrast the advantages and disadvantages of conventional and organic farming.
2. Acquire skills on different composting methods.
3. Acquaint with cultural and crop protection practices related to organic farming.
4. Acquire knowledge on various management practices in organic farming.
5. Discuss about the certification and marketing of organic foods.
6. Explain the initiatives of government in promoting organic farming

III. Syllabus of Theory:

UNIT-1: Basic concepts of organic farming 8 Hrs.

1. Organic farming: Definition, ecological social and economic benefits.
2. Organic farming and its components; concepts and principles.
3. Biodynamic and natural farming approaches; permaculture and LEISA farming approaches.
4. Sustainable agriculture, key indicators of sustainable agriculture.
5. Living soil and healthy plant concepts.

UNIT-2: Organic inputs for soil 8 Hrs.

1. Vermicompost production technology.
2. Organic manures: Farmyard Manure (FYM), enrichment of FYM.
3. Compost, methods of composting (Bangalore, Indore, Coimbatore, NADEP methods).
4. Green manuring, classification of green manures.
5. Classification of organic residues; recycling of organic residues.

UNIT-3: Organic crop management 10 Hrs.

1. Introduction to organic crop management – land preparation, planting technic, nutrient management.
2. Factors considered for nutrient management; recommended nutrient quantity –blanket, major problems; balance sheet method.
3. Nutrient composition of some organic resources, right timing of nutrient application.
4. Right method of nutrient application, nutrient use efficiency.

UNIT-4: Cultural and crop protection practices 10 Hrs.

1. Pre-sowing irrigation; crop rotation, intercropping and mixed cropping.
2. Use of tolerant and resistant varieties; manipulation in sowing dates, irrigation/flooding, destruction of volunteer plants.
3. Pest and disease management – preventive, physical and mechanical methods.
4. Organic crop management – rice, red gram, groundnut, and tomato.
5. Government interventions to promote organic farming: NPOF, NPMSHF, NHM, RKVY, KVK and APEDA.

UNIT-5: Certification and Marketing of Organics 9 Hrs.

1. Organic certification process – definition, need, aim and scope, requirements to maintain certification.
2. Organic certification process – labelling of products, NPOP, organic quality control, standards, accreditation, inspection, and certification.
3. Operational structure of organic certification.
4. Marketing of organic products.

IV. Text Books:

1. Vandana Shiva, Poonam Pande and Jitendra Singh, (2004). Principles of Organic Farming -

   Renewing the Earth's Harvest, Navdanya, New Delhi.
2. Sujit Chakrabarty, Sumati Narayan, Farooq Ahmad Khan, (2019). Arts and Science of Organic Farming, Purna Organics
3. Thapa, U., and P. Tripathi, (2016). Organic Farming in India, Agrotech Publications, Udaipur
4. Peter, V. Fossel, (2007). Organic Farming (Everything You Need to Know), Voyageur Press,

   USA

V. Reference Books:

1. Richard Wiswall (2009), The Organic Farmer's Business Handbook Chelsea Green Publishing, White River Junction, VT, USA.
2. William Lockeretz (2007), Organic Farming: An International History CABI Publishing, Wallingford, UK.
3. Ann Larkin Hansen (2010), The Organic Farmer's Manual: A Comprehensive Guide to Starting and Running a Certified Organic Farm Storey Publishing, North Adams, MA, USA. Masanobu Fukuoka (1978), The One-Straw Revolution: An Introduction to Natural Farming Rodale Press, Emmaus, PA, USA.
4. Gary Zimmer (2000), The Biological Farmer: A Complete Guide to the Sustainable & Profitable Biological System of Farming Acres U.S.A., Austin, TX, USA
5. Albert Howard (1947), The Soil and Health: A Study of Organic Agriculture University Press of Kentucky, Lexington, KY, USA.
6. Terri Paajanen (2014), The Complete Guide to Organic Livestock Farming Atlantic Publishing Group, Inc., Ocala, FL, USA.

VI. Suggested activities and evaluation methods:

Unit-1: Activity: Group discussion on advantages and disadvantages of organic and ininorganic farming methods.

Evaluation method: Analyzing the quality and depth of the content discussed, identifying key ideas, arguments, and supporting evidences.

Unit-2: Activity: Internship on preparation of composts and other organic inputs.

Evaluation method: Performance evaluations, team feedback and competition results.

Unit-3: Activity: Case study report on management practices in organic farming.

Evaluation method: Evaluating the clarity, coherence, and logical structure of the case study report.

Unit-4: Activity: Critical written assignment on support from government agencies to promote organic farming.

Evaluation method: Evaluating the application of critical thinking skills, such as analysis, evaluation, and interpretation of information or ideas presented in the assignment.

Unit-5: Activity: A survey report on marketing of organic food products.

Evaluation method: Evaluating the appropriateness and effectiveness of the survey design, including the clarity of questions, survey structure, and response options.

V Semester

Course 14 A: Organic Farming

Credits -1

I. Course outcomes: On successful completion of this practical course, students shall be able to:

1. Prepare different organic formulations for organic farming.
2. Design a vermicompost unit and prepare the compost.
3. Identify various manures for organic farming.

II. Laboratory/field exercises:

1. Preparation of Jeevamrutham (liquid and solid) and Beejamrutham.
2. Preparation of Neemastram and Brahmastram.
3. Preparation of Agniastram and Dashaparni Kashayam.
4. Study of intercropping method.
5. Study of water management in Organic Farming.
6. Study of livestock component in Organic Farming.
7. Hands on training on vermicompost preparation.
8. Study of different organic and green manures.