

AGR217:PRINCIPLES AND PRACTICES OF NATURAL FARMING

L:1 T:0 P:2 Credits:2

Course Outcomes: Through this course students should be able to

- CO1 :: know about the historical, cultural and ecological foundations of natural farming
- CO2 :: understand the principles and methods of natural farming in various agro-ecological zones
- CO3 :: explain the ecological, economic, and social benefits of natural farming systems
- CO4 :: demonstrate various nutrient, pest and weed management practices under natural farming
- CO5 :: explore entrepreneurial strategies for natural farming promotion

Unit I

Historical and philosophical foundations of natural farming : Indian heritage of ancient agriculture, history of natural farming, significance of Agriculture and irrigation in the Ramayana, Mahabharata and other kings of Indian tradition, importance of natural farming in view of climate change, soil health, water use, carbon sequestration, biodiversity conservation, food security and nutritional security, and sustainable development goals (SDGs)

Unit II

Concept, scope and principles of natural farming : Indian agriculture by the Greek historians and later travellers, contemporary ways of natural farming; concept of natural farming, objective of natural farming, essential characteristics and principles of natural farming, scope and importance of natural farming. main pillars of natural farming; methods/types/schools of natural farming

Unit III

Design and ecological foundations of natural farming : Major water-bodies of the ancient times. The Ery system of south India. characteristics and design of a modern natural farm, concept of ecological balance, ecological engineering and community responsibility in natural versus other farming systems, introduction to concept of ecological, water, carbon and nitrogen foot prints. concept and evaluation of ecosystem services

Unit IV

Components and practices in natural farming : Excellence of Indian agricultural technologies as observed by more recent European observers., Present knowledge of integration of crops, trees and animals, cropping system approaches, biodiversity, indigenous seed production, farm waste recycling, water conservation and renewable energy use approaches on a natural farm. rearing practices for animals under natural farming

Unit V

Management practices and mechanization : Productivity of Indian agriculture in medieval Thanjavur and eighteenth century Allahabad, Chengalpattu, etc., Modern practices of nutrient management in natural farming and their sources, Insect, pest, disease and weed management under natural farming, mechanization in natural farming, processing, labelling, economic considerations and viability, certification and standards in natural farming

Unit VI

Promotion, entrepreneurship and case studies : Indian attitude towards agriculture, based on Walker and later reports, Contemporary strategies for marketing and export potential of natural farming produce and products, initiatives taken by government (central/state), NGOs and other organizations for promotion of natural farming and chemical free agriculture, case studies and success stories in natural farming and chemical free traditional farming, entrepreneurship opportunities in natural farming

List of Practicals / Experiments:

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- to visit the natural farm and chemical-free traditional farms
- to study about the indigenous technical knowledge (ITK)
- to study the preparation of on-farm inputs in natural farming and its application
- to study about different green manuring crops

- to get acquainted with the animal & plant-based inputs
- to study about the weed management practices in natural farming
- to study about the insect and pest management practices in natural farming
- to study about the disease management in natural farming
- to study about indigenous seed production techniques, storage and marketing
- to calculate the nutrient budgeting in natural farming
- to study the financial budgeting in natural farming
- to evaluate the ecosystem services in natural farming

Text Books:

1. PRINCIPLES AND PRACTICES OF NATURAL FARMING by VISHAL JOHAR, VINITA BISHT, VIKRANT JARYAN, SARTHI, SAKSHI BLAGAN, ELITE PUBLISHING HOUSE PRIVATE LIMITED
2. NATURAL FARMING A GUIDE BOOK by NEELAM PATEL, CHANDEL R.S., VERM S.C., GUPTA ASHISH, TIMBODIA, KALYANI PUBLISHERS

References:

1. THE ONE-STRAW REVOLUTION: AN INTRODUCTION TO NATURAL FARMING by MASANOBU FUKUOKA, New York Review Books Classics