Level One
Syntropic Agroforestry
Course Outline

ForestFoods™

Day One Activities and Theoretical Classes

Soil Preparation with Machinery and Hand Tools

Participants will gain hands-on experience in soil preparation, learning to use both machinery (tractor and rotovator) and hand tools. The session will cover soil correction, mineralization, and fertility preparation for new and existing areas. Students will also learn in-field soil monitoring tests such as VESS, earthworm counts, identifying compaction layers, infiltration tests, and spading ease. This comprehensive approach ensures that participants can adapt techniques based on the tools available and the specific needs of their land.

Design and Implementation of New Beds

This session focuses on creating new agroforestry beds from scratch, covering the finer details of pegging out fields, keeping lines straight across larger areas, and ensuring raised beds have the right shape and dimensioning. Participants will learn the critical steps of soil preparation, bed making, and bed covering. Practical demonstrations will include planting tree lines with seedlings and 'muvuca' seed nests, a method that enhances biodiversity and soil health. By the end of this session, participants will be able to design and implement resilient and productive agroforestry beds.

Agroforestry Design, Management, and Economics

In this theoretical class, students will delve into concepts of agroforestry design and management. Topics will include agroecological zoning, landscape planning, and the integration of diverse plant communities. Additionally, the basic economics of agroforestry systems will be explored, providing participants with strategies to make their systems both sustainable and profitable. This class will equip students with the knowledge to plan and manage agroforestry projects effectively. The session will also cover different irrigation systems and the differences between rain-fed and irrigated agroforestry systems, highlighting the benefits and challenges of each approach.

Pruning Techniques and System Maintenance

Participants will receive a detailed overview of pruning tools suitable for different stages of agroforestry systems, from hand tools to power tools. The session will include demonstrations and hands-on practice in pruning, managing plant health, and renovating existing modules, with a key focus on arranging and organizing the pruned biomass for maximum efficiency and rate of decomposition. This practical knowledge is essential for maintaining and enhancing the productivity of agroforestry systems as they grow and mature.

Compost Tea Preparation

This session will teach participants how to prepare compost tea inoculated with beneficial microbiology. The activity will include adding feedstock and bubbling for 24 hours to create a nutrient-rich solution. The session will also cover setting up the brewer, purifying water for microbiology using humic acids, and other techniques to enhance the compost tea's effectiveness. By the end of this session, participants will understand how to create and use compost tea to improve soil health and plant growth.

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Day Two Activities and Theoretical Classes

Composting Techniques

Participants will learn composting techniques, including hot composting, the Johnson-Su model, and vermiculture. The session will cover creating and managing compost piles, focusing on the role of earthworms in the Johnson-Su method, and making compost extracts. Detailed demonstrations will include setting up Johnson-Su bioreactors, monitoring compost pile temperatures, and managing moisture and carbon levels. By the end of this session, students will be equipped to produce high-quality compost to enhance soil fertility.

Farm Design and Planning

This theoretical class will cover the principles of designing sustainable agroforestry systems. Topics will include selecting appropriate species, planning for succession, and integrating agroforestry components into existing landscapes. Participants will develop a comprehensive plan for implementing new agroforestry systems and managing maturing ones. This session provides the strategic insights needed to create and sustain productive agroforestry projects.

Soil Studies and Microscopy

In this hands-on session, participants will conduct microscopic analysis of soil samples to understand soil microbiology. They will examine prepared compost tea and verify the presence of beneficial microorganisms. This activity enhances knowledge of the soil food web, allowing participants to ensure the quality of their soil amendments before application. Understanding the microbial life in the soil is crucial for maintaining soil fertility, building soil structure, improving nutrient cycling, and how these in turn affect plant health.

Application of Compost Tea and Agroforestry Maintenance

Participants will learn to apply compost tea in the field, ensuring it is of high quality by verifying the presence of beneficial microorganisms with a microscope. The session will also cover ongoing maintenance practices, pest management, and module renovation. By the end of this session, participants will be able to ensure the long-term health and productivity of their agroforestry systems.

Course Conclusion and Certification

The course will conclude with a review of the content covered, an opportunity for participants to clarify doubts, and a discussion to reinforce learning. Certificates will be awarded to participants who successfully complete the course.