

THEORY

Agronomy of field crops - importance - origin - soil and climatic requirement – area, production and productivity in World, India and Tamil Nadu. Systems of cultivation. Crop management - season, varieties, seed rate, seed treatment, sowing, density and geometry, growth stages, critical stages for input requirement - nutrient, irrigation and weed management - after cultivation - harvest and processing- storage - byproducts - cropping systems.

Cereals-Major crops:	<ul style="list-style-type: none"> Rice, Wheat, Maize,
Cereal- Minor crops:	<ul style="list-style-type: none"> Oats, Barley, Rye, Triticale*
Millet –Major	<ul style="list-style-type: none"> Sorghum, Pearl millet, Finger millet, Minor: Barn yard millet, Foxtail millet, Little millet, Kodo millet, Common millet
Pulses	<ul style="list-style-type: none"> Redgram, Blackgram, Greengram, Bengalgram, Soybean, Cowpea, Lab-lab, Beans, Horsegram, Lentil, Grain peas
Forages	<ul style="list-style-type: none"> Guinea grass, Cumbu Napier, Water grass, Cenchrus, Dinanath grass, Fodder Sorghum, Pearl millet, maize, Teosinte, Lucerne, Berseem, Desmanthus, Stylosanthus, Cowpea, Siratro, Fodder trees* - preservation
Green manures*	<ul style="list-style-type: none"> <i>Sesbania spp</i>, Sunnhemp, Kolinji (Tephrosia), Pillipesara,
Green leaf manures*	<ul style="list-style-type: none"> Gliricidia, Pungam, Neem, Calotropis, Ipomoea

* Short account only

PRACTICAL

Maintenance of crop cafeteria - Identification of crop plants, varieties and seeds - Acquiring skill in different operations for various crops - nursery preparation - seed treatment - sowing - preparation of main field - methods and depth of sowing / planting - use of sowing equipments - maintenance of plant density and geometry - time and methods of application of manures and fertilizers, biofertilizers, irrigation and weed management - after cultivation. Assessment of maturity - Harvest and processing – Hay and Silage making -Cost of cultivation and economics for important crops - Observations on growth and estimation of yield. Visit to farmers' field.

LECTURE SCHEDULE

1. Importance of cereals, millets, pulses, green manure, green leaf manures and forage crops.
2. Area, production and productivity of major cereals, millets, pulses and forage crops of India and Tamil Nadu.
3. Rice - importance - origin, distribution - soil and climatic requirement, season and varieties.
4. Rice - growth stages - systems of rice cultivation - methods of sowing - nursery preparation and management - seed rate, seed treatment and sowing in nursery.
5. Rice - main field preparation for wet and dry cultivation, Methods of crop establishment - Direct sowing under wet and dry condition – Transplanting,

- Throwing seedlings, plant density and geometry, management of aged seedlings.
6. Nutrient management in rice – manures and manuring - time and method of fertilizer application - application of biofertilizers - Azolla, Bluegreen algae, Azospirillum and Phosphobacteria.
 7. Rice - weed control - irrigation - after cultivation - cropping system - harvesting, threshing, drying and storage - byproducts.
 8. Rice - cultivation of Hybrid rice - deep water rice – Ratoon management.
 9. Maize - origin and distribution - soil and climatic requirements - season, varieties – types of maize - field preparation - sowing - manures and manuring - weed control.
 10. Maize - irrigation - after cultivation - harvest, threshing, drying and storage - Agronomic practices for Baby corn - cropping system.
 11. Wheat - origin and distribution - soil and climatic requirements - season, varieties.
 12. Wheat - field preparation - seeds and sowing, seed treatment - manures and manuring - weed control - irrigation - after cultivation - harvest, threshing, drying and storage - cropping system.
 13. Oats, Barley, and Rye - origin and distribution - soil and climatic requirements - season, varieties - field preparation - sowing - manures and manuring - weed control - irrigation - after cultivation - harvest, threshing, drying and storage - cropping system - Trticale (Short account only).
 14. Sorghum - importance - origin and distribution - soil and climatic requirements – season, varieties -seeds and sowing – nursery preparation.
 15. Sorghum - main field preparation - transplanting – manures and manuring - weed control - after cultivation – irrigation - harvest and storage.
 16. Sorghum - Agronomic practices for rainfed and ratoon sorghum - cropping system.
 17. MID SEMESTER EXAMINATION.
 18. Pearl millet - importance - origin and distribution - soil and climatic requirements - season, varieties - nursery - seeds and sowing – main field preparation and planting.
 19. Pearl millet - manures and manuring - weed control - after cultivation - irrigation - harvest and storage – Agronomic practices for rainfed pearl millet - cropping system.
 20. Finger millet - importance - origin and distribution - soil and climatic requirements - season, varieties - nursery - seeds and sowing - main field preparation and planting - manures and manuring - weed control - after cultivation - irrigation - harvest and storage – Agronomic practices for rainfed crop - cropping system.
 21. Barnyard millet - Foxtail millet - Kodo millet - importance - origin and distribution - soil and climatic requirement - season - varieties - field preparation - seeds and sowing - manures and manuring - weed control - after cultivation – harvest.
 22. Little millet and Common millet - importance - origin and distribution - soil and climatic requirements - season, varieties - field preparation - seeds and sowing - manures and manuring - weed control - after cultivation - harvest and storage.
 23. Redgram – importance - origin and distribution - season, varieties - field preparation – seeds and sowing - manures and manuring - weed control - after cultivation – irrigation - harvest and storage - cropping system.
 24. Blackgram and Greengram - importance - origin and distribution - season,

- varieties - field preparation - seeds and sowing - manures and manuring - weed control - after cultivation – irrigation - harvest and storage.
25. Bengalgram and Horsegram - importance - origin and distribution - season, varieties - field preparation - seeds and sowing - manures and manuring - weed control - after cultivation - irrigation - harvest and storage.
 26. Cowpea, Lab-lab, Beans and peas - importance - origin and distribution - season, varieties - field preparation - seeds and sowing - manures and manuring - weed control - after cultivation - irrigation - harvest and storage.
 27. Soybean - importance - origin and distribution - season, varieties - field preparation - seeds and sowing - manures and manuring - weed control - after cultivation - irrigation – harvest and storage.
 28. Agronomy of Lentil and Lathyrus - Agronomy of rice fallow pulses.
 29. Green manure crops* - importance - soil and climatic requirement for *Sesbania aculeata*, *Sesbania speciosa* and *Sesbania rostrata*, Sunnhemp, Kolinji, Pillipesara, - Agronomic practices - biomass production - time and method of incorporation and nutrient content.
 30. Green leaf manure crops* - importance - Gliricidia, Pungam, Neem, Calotropis and Ipomoea - method of incorporation and nutrient content.
 31. Forage crops – Forage grasses - importance - soil and climatic requirement for Guinea grass, Napier grass, Bajra Napier hybrid, Water grass, Blou-buffel grass, Dinanath grass - season, varieties – agronomic practices - time of harvest – biomass production (fodder yield) and nutrient content.
 32. Cereal and legume forage crops - importance - soil and climatic requirement for Fodder sorghum - pearl millet - maize and teosinte and legumes such as lucerne, berseem, *desmanthus*, *stylosanthes*, *siratro* and cowpea – agronomic practices - harvest - biomass production (fodder yield) and nutrient content.
 33. *Fodder trees and their importance:
 34. Preservation of fodder – hay and silage - Seasonal pastures Byproduct of crops studied above.

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