AGR 304  Principles and Practices of Cropping and Farming System  2+1

Theory

Unit I: Cropping system
Cropping systems - Definition - Principles - Concepts - Classification – mono cropping – intensive cropping - cropping systems of India and Tamil Nadu - Interaction between different cropping systems – Cropping system management – Resource management – land, nutrient, water and weed - Indices for evaluation of cropping systems - Land use - yield advantages - Economic evaluation

Unit II: Farming systems

Unit III: Dryland farming and rainfed farming
Dryland farming and rainfed farming - Significance of dry farming in India- History of dry land agriculture- Distribution of Arid and semiarid regions in World, India and Tamil Nadu – Major crops of Dryland in India and Tamil Nadu - Characteristics - constraints

Unit IV: Drought and its management
Drought – Definition - Types and effects of Drought on crop production - Drought management - Contingent crop planning – Mid season correction – Mulching – anti-tranpirants - Soil moisture conservation techniques and approaches - Water harvesting, storage and recycling - Integrated dry land technologies – Mechanization - Watershed management

Unit V: Resource management in drylands

Practical
Preparation of cropping scheme - working out input requirements for crops, cropping systems - preparation of calendar of operations for wetland, irrigated upland and dry land cropping system - visit to cropping system experiments – working out indices for evaluation of cropping systems – visit to different units: dairy, goat, poultry, fishery. Mushroom, sericulture and biogas - study on evaluation indicators on farming system - preparation of integrated farming system models for different eco-systems - on farm field visit - analysis of farming system models

Zonation of Dry farming regions of Tamil Nadu, India and World. - study of tools and implements and machineries for tillage, sowing and after cultivation - assessing their efficiencies -study of drought management technologies in dryland agriculture - Preparation of contingency crop plan for aberrant rainfall situations - Visit to watershed area to study the impact of various soil and moisture conservation methods.

References
Theory schedule
1. Cropping system: Definition, Principles and basic concepts
2. Classification of cropping system - Mono cropping, intensive cropping, multiple cropping, mixed cropping
3. Major cropping systems prevailing in India and Tamil Nadu for different agro eco-systems
4. Complementary and competitive interaction in different cropping system – light, nutrient, water and weed
5. Cropping system management: agronomic requirement for crops and cropping system – selection of crops and varieties, tillage and land shaping, plant population and crop geometry
7. Indices for evaluation of cropping system – land use, yield advantage and economics
8. Farming system: definition, principles and concepts
9. Farming system - factors influencing choice and size of enterprises
10. Allied enterprises for wetland, irrigated upland and dryland – selection and management
12. Resource recycling in integrated farming system
13. Integrated Farming System evaluation indicators
14. Integrated farming system - models for wetland, irrigated upland and dryland eco-system

Mid Semester Examination
18. LEIA & HEIA- concepts and principles
19. Significance and scope of dry farming in India and History of dryland agriculture
20. Dry farming and rainfed farming: Definition and Characteristics
21. Distribution of arid and semi-arid regions in World, India and Tamilnadu
22. Major crops of dryland in India and Tamilnadu
23. Characteristics of dryland farming and major constraints for crop production
24. Drought: definition, types and effects of drought on crop production
25. Drought management strategies and contingent crop planning: mid season correction, mulching, anti transpirants, in-situ soil moisture conservation techniques and approaches
26. Water harvesting, storage and recycling
27. Integrated dryland technologies and farm mechanization
28. Watershed: definition, principles ,classification and management
29. Resource management under constraint situations for irrigated and rainfed farming
30. Cost reduction strategies in crop production – cropping system, integrated farming system and dry farming
31. Non-monetary inputs and low cost technologies for crop production
32. Crop and livestock residue management
33. Labour management in farming system
34. Conservation agriculture – principles, concepts and scope

Practical schedule
1. Visit to cropping system experiments in wetland, irrigated upland
2. Preparation of cropping scheme for wetland and working out input requirement
3. Preparation of cropping scheme for irrigated upland and working out input requirement
4. Calendar of operations for wet land and irrigated upland cropping system
5. Working out indices for evaluating the cropping system
6. Visit to dairy, goat and poultry units
7. Visit to fishery unit
8. Visit to mushroom unit
9. Visit to sericulture and biogas unit
10. Preparation and evaluation of integrated farming system models : wetland eco-system
11. Preparation and evaluation of integrated farming system models: irrigated upland and dryland eco systems
12. On-farm visit to cropping fields and integrated farming system units
13. Zonation of Dry farming regions of Tamil Nadu, India and World.
14. Study of tools, implements, and machineries for tillage, sowing and after cultivation and assessing their efficiencies
15. Drought management technologies in dryland agriculture - Preparation of contingency crop plan for aberrant rainfall situations
16. Visit to watershed area to study the impact of various soil and moisture conservation methods.
17. Final Practical Examination
Theory

Unit I: Concepts of Soil Survey

Unit II: Remote Sensing and GIS
Remote Sensing - principles and basic concepts – sensors and platforms – Aerial and satellite remote sensing – Use of aerial and satellite data in soil resource inventory – Principles of GIS, GPS and GPRS

Unit III: Soil Taxonomy

Unit IV: Land Use Classification
Soil survey reports – Interpretation and interpretative groupings - Land capability, irrigability and suitability classifications – Storie index – Productivity potential – Land suitability for field crops, horticultural crops and forest trees.

Unit V: Soil Related Constraints

Practical

References

Web resources

5. www.oosa.unvienna.org/pdf/sap/centres/rscurrE.pdf
6. en.wikipedia.org/wiki/Geographic_information_system
8. www.csre.iitb.ac.in/~dd/detail.html
10. inkinghub.elsevier.com/retrieve/pii/S0166248197800335
12. www.angrau.net/BSc(Ag)CourseCurriculum.htm
13. ww.springerlink.com/index/BJG00EL8FLNTFUNL.pdf
15. inkinghub.elsevier.com/retrieve/pii/S0166248197800335
16. www.springerlink.com/index/R177R744722222UUN.pdf - Similar
17. content.alterra.wur.nl/Internet/webdocs/ilri-publicaties/.../Bib10.pdf
18. www-wds.worldbank.org/external/.../INDEX/multi_page.txt - Cached
Theory schedule
1. Early and modern concepts of soil resource inventory
2. Concepts of Standard Soil Survey, its scope and objectives
3. Soil systematics – pedon, polypedon, control section and three dimensional nature of soil body
4. Soil mapping units – soil series, soil association, soil complex, variants, inclusions and miscellaneous land types.
6. Types of soil survey – detailed and semi detailed
7. Remote sensing – basic principles and concepts
8. Remote sensing sensors and platforms
9. Aerial remote sensing – kinds of aerial photographs, stereovision and air-photo interpretation
10. Satellite remote sensing – data acquisition, kinds of satellite data and image interpretation and principles of GIS, GPS and GPRS
14. Soil taxonomy – structure and differentiating characters and limitations
15. Soil orders and their characteristics
16. Soil orders and their distribution in world
17. Soils of India and Tamil Nadu
18. Mid Semester Examination
19. Aerial and Satellite remote sensing and soil mapping
20. Soil maps, kinds of soil maps and their preparation
21. Soil survey report preparation and interpretation
22. Interpretative groupings of soils. Land capability classification
23. Land irrigability classification, Storie index and productivity potential
24. Land suitability classification for field crops, horticultural crops and forest trees
25. Soil physical constraints – slow permeable, excessively permeable soils, characteristics and management
26. Soil crusting, sub soil hard pan and fluffy paddy soils, characteristics and management
27. Acid soil – genesis and characteristics.
28. Lime requirement of acid soil, liming materials and reclamation of acid soil
29. Genesis and classification of saline sodic soils
30. Saline soil – characteristics and their management
31. Sodic soil – characteristics, gypsum requirement and reclamation
32. Quality of irrigation waters and quality criteria
33. Irrigation water quality appraisal – USDA system, SAR, RSC, SSP, PSI and PS
34. Effect of poor quality waters on soils and crop growth and management.

Practical schedule
1. Profile description
2. Study of base maps – topo-sheets and cadastral maps
3. Aerial photographs and satellite imagery interpretation
4. Estimation of lime requirement of acid soil
5. Estimation of CEC in sodic soil part I
6. Estimation of CEC in sodic soil part II
7. Estimation of Exchangeable cations and working out ESP
8. Estimation of gypsum requirement of sodic soil
9. Land suitability for field crops, horticultural crops and forest trees
10. Estimation of pH, EC, TSS and chloride in irrigation water
11. Estimation of carbonate and bicarbonate in irrigation water
12. Estimation of sulphate in irrigation water by turbidimetry
13. Estimation of calcium and magnesium in irrigation water
14. Estimation of sodium and potassium in irrigation water
15. Classification of irrigation waters as per USSL and other systems
16. Field visit to problem soils area and soil survey unit
17. **Final Practical Examination**
PBG 301 Principles and Methods of Plant Breeding  2+1

Theory

Unit I: Reproductive systems in plant breeding

Unit II: Breeding methods of self pollinated crops

Unit III: Breeding methods of cross pollinated crops and clonally propagated crops

Unit IV: Special breeding methods
Polyploidy breeding – classification – induction of polyploidy – diploid x tetraploid and diploid x hexaploid crosses - achievements – limitations. Wide hybridization-history-importance-

**Unit V: Maintenance breeding**


**Practical**


**References**


**Further reading**


**Web resources**

Theory schedule
1. Objectives and role of plant breeding - historical perspective – activities in Plant Breeding.
8. TGMS, PGMS, Gametocides, Transgenic Male sterility and applications.
10. Basic biometrics-nature and significance of qualitative and quantitative variation-phenotypic, genotypic and environmental-heritability and genetic advance
17. Mid Semester Examination
28. Wide hybridization-history-importance-barriers and techniques for overcoming barriers-utilization
30. Somaclonal variation - utilization in crop improvement; In vitro selection techniques — Use of doubled haploids in crop improvement.
32. Types of cultivars – procedure for release of new varieties – stages in seed multiplication – seed certification and TC plants certification.
33. Maintenance Breeding: General seed production techniques – steps in nucleus and breeder seed production – varietal rundown and renovation.
34. Breeding for biotic and abiotic stresses; Current trends in Plant Breeding - Marker assisted breeding -Transgenic crops - Varietal protection and geographical indications – DUS.

Practical schedule
1. Pollination and reproduction in plants - Alternation of generation and life cycle.
2. Description and drawing different pollination systems - Mechanisms enforcing self and cross pollination in crops; Pollen morphology - Exine structure of different crops. Fertility and sterility in A, B, R and TGMS lines.
3. Breeder kit and its components – uses; Basic steps of selfing and crossing techniques.
4. Emasculation and pollination techniques in field crops.
5. Emasculation and pollination techniques in horticultural crops.
6. Studies on segregating generations and maintenance of records.
7. Maintenance of A, B and R line and TGMS lines - Hybrid seed production techniques
10. Studies on different wild species in crop plants and wide hybridization.
12. Germplasm preservation – conservation - records maintained in research stations
13. Calculation of PCV, GCV, heritability, genetic advance, genetic divergence
14. Layout of different yield trials - Observing the experimental plots; Visit to nucleus and breeder seed production plots.
15. Screening methods – laboratory and field – for biotic and abiotic stresses.
17. Final Practical Examination.
HOR 312 Production Technology of Flower Crops, Medicinal and Aromatic Crops 2+1

Theory
Unit I: Scope, importance, production and post harvest technology of commercial flower crops


Unit II: Production and post harvest technology of cutflowers


Unit III: Landscape gardening and lawn making


Unit IV: Production technology of medicinal crops


Unit V: Production technology of aromatic crops

Practical

Identification of varieties-propagation-special practices- nutrient management and disorders in rose, jasmine, crossandra, chrysanthemum, marigold, tuberose, cut rose, gladiolus, carnation, gerbera, anthurium and tropical orchids – visit to commercial floricultural units / floral oil extraction units and flower markets. Study of various components of garden – Lawn and Lawn making – identification of important trees – shrubs, creepers, annuals, biennials and herbaceous perennials used in gardening. Identification of varieties-propagation-special practices - nutrient management, processing of medicinal and aromatic crops - senna, periwinkle, glory lily, ashwagandha, phyllanthus, medicinal coleus, aloe, medicinal dioscorea, medicinal solanum, ocimum, davana, mint, lemon grass, citronella, geranium, eucalyptus, palmarosa and vetiver – visit to commercial medicinal and aromatic plants fields and processing units

References

Journals
1. Amruth
2. Journal of Medicinal and Aromatic Plants

Web resources
3. http://www.webct.uark.edu
5. http://www.bestgarden.net/
10. www.herbs.org
11. www.nmpb.nic.in
Theory schedule

1. Importance, scope and future prospects - area and production and commercial floriculture industry
2. Export potential of commercial flowers.
3. Protected cultivation – Importance and constraints in flower production
16. Scope and Importance of medicinal & aromatic crops– current status - conservation methods
17. Mid Semester Examination.
18. Importance of gardening and designing a garden
19. Components of garden and basic principles of landscaping
20. Lawn and Lawn making
21. Important trees, shrubs and climbers used in ornamental gardening
22. Annuals, biennials and herbaceous perennials used in ornamental gardening.
23. GAP and organic production of medicinal and aromatic crops and certification
24. Senna, periwinkle - varieties — soil and climate – propagation- sowing and planting, nutrient, water and weed management - harvest, and processing – post harvest handling
26. Medicinal coleus, aloe - soil and climate – propagation - planting, nutrient, water and weed management – harvest, yield and processing – post harvest handling
29. Methods of extraction of secondary metabolites from medicinal plants
34. Methods of distillation of essential oil from aromatic crops

**Practical schedule**
1. Identification and description of varieties in rose, jasmine and chrysanthemum.
2. Identification and description of varieties of crossandra, marigold and tuberose.
3. Identification and description of varieties of cut rose, anthurium, carnation and gerbera.
4. Media preparation and potting of cut flowers
5. Study of various components of garden
6. Lawn and lawn making
7. Identification of important trees, shrubs and creepers used in garden.
8. Identification of important annuals, biennials and herbaceous perennials used in garden.
9. Identification of medicinal and aromatic plants – study on economic parts used and their products
10. Propagation techniques of senna and periwinkle, glory lily, aswagandha and phyllanthus.
11. Propagation techniques of medicinal coleus, isabgol and aloe.
12. Propagation techniques of medicinal Dioscorea, and Solanum
13. Identification of species/varieties and propagation techniques of ocimum, eucalyptus, davana and mint.
14. Identification of varieties and propagation techniques of lemon grass, palmarosa, vetiver, citronella and geranium
15. Visit to commercial floriculture and floral oil extraction units
16. Visit to commercial medicinal and aromatic crops field and extraction unit.
17. **Final Practical Examination.**
AEX 301 Extension Methodologies and Transfer of Agricultural Technology 1+1

Theory
Unit I: Communication and Programme Planning

Unit II: Extension Teaching Methods

Unit III: Modern Communication Gadgets
Modern communication sources – internet, video and teleconferencing, Interactive Multimedia Compact Disk (IMCD), village kiosks, Kissan Call Centre (KCC), mobile phone

Unit IV: Diffusion and Adoption
Diffusion – meaning and elements. Adoption – meaning – adopter categories and factors influencing adoption, stages of adoption, Innovation decision process and attributes of innovation consequences of adoption.

Unit V: Capacity building
Capacity building of extension personnel and farmers – meaning – definition, types of training, training to farmers, farm women and rural youth, FTC & KVK.

Practical


References

Journals
1. Indian Journal of Social Sciences, Serials Publications, New Delhi
2. Agricultural Extension Review, Department of Agriculture and Co-operation, Ministry of Agriculture, New Delhi
3. Journal of Rural Development, NIRD, Rajendra Nagar, Hyderabad
4. MANAGE, NAARM, Hyderabad
5. Yojana, Ministry of Rural Development, New Delhi

Web resources
Theory schedule

1. Communication-meaning, definition, functions, elements and their characteristics.
2. Types and barriers of communication and models of communication.
3. Programme planning-definition, scope, principles, importance, steps, evaluation, keys for evaluation.
4. Extension teaching methods-definition, meaning, functions, selection and classification.
5. Individual contact methods-farm and home visit, office call, telephone call and personal letter-observation and result demonstration.
6. Group contact methods-method demonstration, meeting, lecture, debate, workshop, seminar, forum and conference.
7. Group contact methods-symposium, panel, brainstorming, buzz session, role playing and simulation games.
8. Mass contact methods-campaign, exhibition, farmers day and field trips - purpose, procedures, advantages and limitations.
9. Mid Semester Examination.
11. Audio visual aids-definition, scope and importance, classification-merits and demerits-factors influencing planning and selection.
13. Modern communication sources (e-extension)-multimedia devices-mobile phone, Kisan Call Centre, Village Knowledge Centre/information kiosks, portal, websites.
15. Innovation-decision process, functions, adopter categories-factors influencing adoption-impact and constraints in technology transfer programmes.
16. Capacity building of extension personnel and farmers-meaning, definition and importance.
17. Training-types, institutions training for farmers, farm women and rural youths and importance.

Practical schedule

1. Understanding the communication pattern in State Department of Agriculture/Horticulture.
2. Study on communication pattern in University TOT Centres.
3. Study of on going agricultural development programmes.
5. Visit to the State Department of Agricultural Engineering to study the transfer of technology efforts in farm mechanization.
6. Visit to village and fixing the priorities and selecting a most important problem for preparation of a project.
7. Visit to ATMA implemented village.
8. Studying the role of print media communication in publishing the activities of agriculture and allied fields.
9. Visit to Educational Media Centre.
10. Practicing skill on photo journalism.
11. Studying the distance learning efforts of Directorate of ODL/Educational Media Centre.
12. Studying the role of Community Radio Centre in TOT.
14. Preparation of interview schedule to study the spread and acceptance of farm technologies at village level.
15. Data collection and tabulation.
16. Presentation of reports.
17. Final Practical Examination.
Theory

Unit I: Agricultural Marketing – Nature and Scope


Unit II: Marketing Functions and SCP Paradigm

Marketing functions: buying and selling- packaging and transportation --grading and standardization--storage and warehousing -- processing and value addition. Market Structure--Conduct--Performance paradigm (SCP) – Market Structure meaning, components, dynamics of conduct and performance.

Unit III: Marketing Efficiency and Marketing Institutions


Unit IV: Trade in Agricultural Products

Theories of Trade: Absolute and Comparative Advantage - Status of Agricultural exports/ imports from India and their share. Barriers to trade – tariff and non tariff measures. Role of institutions like UNCTAD and WTO in promoting trade in agricultural products. Free Trade Agreements -Implications of AoA- Market access, Domestic support and export subsidies. New EXIM policy of India – Advantages of AEZs. – Export promotion organization: APEDA, MPEDA, NHB, Commodity boards .

Unit V: Agricultural Prices and Risk Analysis


Practical

Farm Survey-Preparation of survey schedules- Farmers’ marketing practices- Regulated market and its role in marketing of farm produce- Cooperative marketing society — Farmers' Market- Estimation of marketed and marketable surplus- Identification of marketing channels- Price spread estimation for agricultural / horticultural / livestock products-Role of Food Corporation of India (FCI)/Civil Supplies Corporation in Marketing of Agricultural Produce-Central Warehousing Corporation (CWC) / State Warehousing Corporation (SWC) and their role in storage of farm produce – Functions of NAFED and TANFED - Agmark Laboratory/Grading institutions-Commodity Boards- Export oriented units- Analyzing the implications of trade liberalization-Time series analysis of prices - trend and seasonal variations, cyclical and irregular variations -Index numbers.

References
Theory schedule
4. Marketing functions- buying and selling- packaging and transportation –grading and standardization--storage and warehousing -- processing and value addition
5. Market SCP paradigm. Market Structure, Conduct & Performance - definitions-components and their dynamics
8. Factor market--marketing of various agricultural inputs-channel of distribution- Input market promotional activities by firm.

9. Mid Semester Examination
15. New EXIM policy of India - Role of Agri. Export Zones – Export promotion Councils – APEDA, MPEDA and ITPO.

Practical schedule
1. Farm Survey-Preparation of survey schedules for collection of data.
2. Farm visit to collect information on marketing practices of agricultural commodities and marketing problems.
3. Visit to weekly shandy/vegetable market/ farmers market.
4. Regulated market and its role in marketing of farm produce – field visit.
5. A visit to Cooperative marketing society to study the services and marketing of farm produce.
7. Estimation of marketable and marketed surplus
8. Price spread estimation for major agricultural and agri-allied products
9. Estimation of marketing efficiency and market integration
10. Visit to FCI / CSC
11. CWC/ SWC and their role in storage of farm produce.
12. Agmark Laboratory/Grading institutions-visit.
13. Marketing of farm inputs - visit to farm input dealer
14. Visit to commodity boards/ AEZ/Export oriented Units.
15. Time series analysis of prices - TCSI variations.
16. Index number-construction and uses.
17. **Final Practical Examination.**
Unit I:
Soft skills and hard skills – career skills and corporate skills – lateral thinking - ego styles – different types – on being a professional.

Unit II:
1. **Attitude**
   Psychological and Sociological definitions – types of attitude (positive and negative) and consequences – suggestions to keep a good attitude.

2. **Emotional Intelligence (EI)**
   Introduction and Definitions – four branch model of EQ and its detailed explanation - five point scale to measure EI – suggestions to improve EI

3. **Interpersonal skills**
   Study of character traits - discussion of formal interpersonal skills like greeting, enquiring, answering, complimenting and acknowledging.

4. **Self Development/Empowerment**
   Self awareness and motivation – Maslow's theory of hierarchy and needs - Self analysis through SWOC and Johari Window – Elements and seven rules of motivation – Goal setting based on principle of SMART – Strategies of self motivation – Knowledge enhancing through reading of Newspapers, magazines and journals.

Unit III: Communication Skills

5. **Process of communication**
   Objectives of communication – Types of communication – Formal Vs informal communication – LSRW components of communication – Barriers to communication

6. **Listening skills**
   Purpose and significance of listening – Process of listening – Different types of listening - How to be a good listener – Guidelines for effective listening – Barriers to listening – Tips to overcome the barriers

7. **Reading skills**
   Purpose and significance of Reading – Benefits of reading – Process/Types of reading – Understanding/Inferring/Note making – SQ3R technique –How to be a good reader – Barriers/Distractions to good reading – Tips to overcome the barriers

8. **Speaking Skills**
   Purpose and significance of speaking clearly –Verbal code and visual code - Benefits of good speaking - Process/ components of good speech – Informative speaking & its types – persuasive speaking & its types –Presentation skills – Barriers of speaking - Tips to overcome the barriers

9. **Writing skills**
10. Telephone skills
   The right environment – formal greetings - telephone courtesies – effective listening skills – interpersonal skills – concluding formality.

11. Mid Semester Examination

UNIT IV: Employability Skills

12. Interview skills - I
   Definitions of interview – two types of group interview – preliminary requirements for success – telephone interview – specially designed interviews.

13. Interview skills - II
   Five stages of interview – how to answer the questions

14. Group discussion

UNIT V: Corporate Skills

15. Leadership qualities
   Definition - basic requirements – ( responsibility - self – knowledge - knowledge of, and rapport with subordinates- knowledge of the assignment- goal setting- decision making – team work ) leadership with primates – leadership and vision.

16. Negotiation skills
   Select definitions – functions of negotiation – two kinds of negotiation – phases of the process – rules – steps to improve negotiation skills.

17. Time management
   Basic skills of time management – relationship between stress management and time management – time management techniques for prudent time management – tips for time management.

Stress management

PRACTICAL SESSIONS

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**References**


**Web resources**

1. www.softskills.com
2. www.reportingskills.com
3. www.writing-skills.com
4. www.negotiation.com
5. www.businessballs.com
6. www.study-habits.com
7. www.timethoughts.com
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<td>2. Description and drawing different pollination systems - Mechanisms enforcing self and cross pollination in crops; Pollen morphology - Exine structure of different crops. Fertility and sterility in A, B, R and TGMS lines.</td>
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<td>3. Breeder kit and its components – uses; Basic steps of selfing and crossing techniques.</td>
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<td>4. Emasculaion and pollination techniques in field crops.</td>
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<td>5. Emasculaion and pollination techniques in horticultural crops.</td>
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<td>6. Studies on segregating generations and maintenance of records.</td>
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<td>7. Maintenance of A, B and R line and TGMS lines - Hybrid seed production techniques</td>
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<td>10. Studies on different wild species in crop plants and wide hybridization.</td>
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<td>12. Germplasm preservation – conservation - records maintained in research stations</td>
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<td>13. Calculation of PCV, GCV, heritability, genetic advance, genetic divergence</td>
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<td>14. Layout of different yield trials - Observing the experimental plots; Visit to nucleus and breeder seed production plots.</td>
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<td>15. Screening methods – laboratory and field – for biotic and abiotic stresses.</td>
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# Practical Schedule

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<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td></td>
<td>1. Identification and description of varieties in rose, jasmine and chrysanthemum.</td>
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<td>2. Identification and description of varieties of crossandra, marigold and tuberose.</td>
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<td>3. Identification and description of varieties of cut rose, anthurium, carnation and gerbera.</td>
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<td>4. Media preparation and potting of cut flowers</td>
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<td>5. Study of various components of garden</td>
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<td>6. Lawn and lawn making</td>
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<td>7. Identification of important trees, shrubs and creepers used in garden.</td>
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<td>8. Identification of important annuals, biennials and herbaceous perennials used in garden.</td>
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<td>9. Identification of medicinal and aromatic plants – study on economic parts used and their products</td>
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<td>10. Propagation techniques of senna and periwinkle, glory lily, aswagandha and phyllanthus.</td>
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<td>11. Propagation techniques of medicinal coleus, isabgol and aloe.</td>
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<td>12. Propagation techniques of medicinal Dioscorea, and Solanum</td>
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<td>13. Identification of species/varieties and propagation techniques of ocimum, eucalyptus, davana and mint.</td>
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<td>14. Identification of varieties and propagation techniques of lemon grass, palmarosa, vetiver, citronella and geranium</td>
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<td>15. Visit to commercial floriculture and floral oil extraction units</td>
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<td>16. Visit to commercial medicinal and aromatic crops field and extraction unit.</td>
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