

**CALENDAR OF
TRAINING PROGRAMMES**

2006 - '07

CENTRAL TRAINING INSTITUTE



**DIRECTORATE OF EXTENSION
KERALA AGRICULTURAL UNIVERSITY
MANNUTHY - 680 651, THRISSUR, KERALA**

English

CALENDAR OF TRAINING PROGRAMMES 2006 -'07

August 2006

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CENTRAL TRAINING INSTITUTE

The Central Training Institute was established at Mannuthy in 1986 with its sub-unit at Vellayani as a special sub-project under National Agricultural Extension Project (NAEP).

This Institute imparts four categories of training programmes such as In-service, Vocational, Stipendiary and HRD for various client/target groups. The client organizations of this institute are Department of Agriculture, Animal Husbandry, Fisheries, Dairy Development, Forestry, Commodity Boards, Nationalised Banks, Local bodies etc. Stipendiary training programmes are also conducted on subjects related to Meat and Dairy technology. Training of pre-release defence personnel in Dairying is yet another regular training activity under taken as a commitment to the nation. Training is also imparted to less privileged sections of the society like unemployed youth, rural housewives, etc. Further in recent years the institute has been recognised by the Government of India as a centre for National Training in specialised areas.

The Kerala Agricultural University has a strong faculty for conducting the various training programmes in the disciplines of Agriculture, Animal Husbandry, Dairying, Fisheries, Agricultural Engineering, Co-operation, Home Science, Forestry, etc. For certain topics, the services of experts outside Kerala Agricultural University are also made use of in training courses.

In addition to the training programmes in the Training Calendar; additional programmes can be conducted on request subject to the approval by the Vice-Chancellor. Fee at standard rates will be charged for all training programmes.

For further information please contact.

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GUIDELINES FOR THE CONDUCT OF TRAINING PROGRAMMES

1. Based on the training calendar sanction will be accorded for the conduct of the training and funds. The funds will be placed at the disposal of the Head of the Institution concerned who will be the drawing and disbursing officer, unless otherwise mentioned. When placed at the disposal of the head of the Institution the funds for the training programme can be obtained from the Comptroller by sending demand.
2. A training programme may commence only after receiving the training course fee from the sponsoring agency/candidates and remitting the same in Comptroller's account. The Course Director may propose the exact date of commencement of each training course, which should be confirmed in due course. The Course Director shall ensure participation of at least 75% of the deputed candidates for the training through personal correspondence with them. The Course Director may make changes in the dates of conduct of the training programme in concurrence with the sponsoring agency and the Central Training Institute, Mannuthy if the situation so warrants.
3. Training courses should necessarily be discussion oriented giving at least 50%-60% weightage for practicals.
4. **EXPENDITURE HAS TO BE LIMITED TO THE FUNDS ALLOTTED. UNDER NO CIRCUMSTANCES, EXCESS EXPENDITURE SHOULD BE INCURRED AND DEVIATED FROM THE ESTIMATE SANCTIONED.**
5. Honorarium may be disbursed by the Course Director to the resource persons after obtaining a receipt from them on which the Course Director shall also furnish a certificate as follows:
“Certified that the resource person has actually engaged theory and Practical sessions over and above normal duties fulfilling all the criteria laid down for the payment of honoraria”
6. **Scheduling of training programme may be avoided in the month of March as it would cause delay in settlement of advances and claiming fees from the sponsoring organisations in time. Course Directors are requested to co-operate by settling all advances at least by February.**
7. Trainings realising registration fees have to be conducted strictly on-no loss basis, and the University will not bear any expenses for these trainings.
8. Leave availed by the trainees during training period has to be reported to the sponsoring agency. No leave other than medical leave should be granted to the trainees during the training period.
9. A pre-training evaluation should be conducted on the first day of the training course and a post-training evaluation on the last day to measure the gain in knowledge and skill of each trainee. Suggestions to improve the training course should also be collected along with the post-training evaluation. The evaluation reports and the suggestions of the trainees should be sent to the Central Training Institute immediately after the completion of the training.
10. Based on the evaluation, a certificate duly signed by the Course Director, Dean/Head of the Institution concerned and Director of Extension will be issued to the candidates who have successfully completed the course. Blank certificates can be obtained from the Central Training Institute by a responsible person only on submitting a request and list of trainees for whom the certificates are to be issued.
11. The Course Director will submit two copies each of the following documents to the Professor of Extension, Central Training Institute, Mannuthy immediately after the training: report of training, list of trainees with official address, schedule of sessions and resource persons, lecture notes/course material and feedback/evaluation report.
12. The Course Director will also ensure that the statement of expenditure along with bills and stock book are submitted without delay to enable adjustment of the advance and/or realisation of fees.

BEST COURSE DIRECTOR AWARD

The Central Training Institute, Mannuthy is the nodal point of Kerala Agricultural University's training activity and decided to duly recognise the Training Course Directors who have contributed significantly to the training activities of the university in terms of performance, quality and revenue generation through trainings. The Best Course Director Award was commenced in the year 2002 –2003. The committee constituted by the Honourable Vice Chancellor to select the Best Course Director has approved the criteria fixed for evaluating the training programmes. The criteria for selection of Best Course Director are as follows:

<i>Sl.No.</i>	<i>Criteria</i>
1	Number of training course proposed
2	Number of training course actually conducted New training Old training
3	Duration
4	Overhead charges, Revenue generated
5	Number of classes handled by Course Director - theory or practical
6	Training notes/resource material etc.,
7	National level training/ State level training
8	Feed back of the participants Utility of the training Conduct of the training Effectiveness of the training Subject matter coverage Timeliness of the training Future scope for development
9	Presentation of bills settlement of advance

The above criteria was evaluated and finalized by the committee and approved by the Honourable Vice – Chancellor.

Mannuthy

Sd/-
Director of Extension

PROPOSAL FOR TRAINING PROGRAMME

(For consideration at the Joint Training Committee Meeting)

FORM A

1. Category of Training Proposal
(Tick option A, B or C)

- A. In service Training:** training cost i.e. actual expenditure plus 20% institution overheads would have to be borne by the sponsoring Agency/ Department.
- B. Vocational Training:** training cost i.e. actual expenditure plus 20% overhead charges would be collected from the candidates by the way of fees such that no loss is incurred to the KAU on account of the training. The overhead charges need to be remitted to Comptroller's Account.
- C. Stipendiary Training:** In cases where the KAU stands to benefit from the services of the trainees a monthly stipend sanctioned by the Vice Chancellor is paid to the trainees. Sufficient funds should be available with the institution proposing stipendiary trainings under the head of account 842 Stipend.
- D. Sponsored Training Programmes:** The clients like unemployed youths, farmers, women or entrepreneurs sponsored by a government or non-government organisation/agency will be imparted training on the intended subjects demanded by the agency or clients. The actual training cost plus 20% overhead charges will be levied from the agency.

2. Title of the training programme:

Training on.....
.....

3. Category of personnel to be trained:
.....
(AOs/ADAs/VS/FO/UY/W/F/E etc.)

- AO = Agrl. Officer
ADA = Asst. Director of Agriculture
VS = Veterinary Surgeon
FO = Field Officer
UY = Unemployed Youth
W = Women
F = Farmers
E = Entrepreneurs

4. No. of batches:
5. No. of trainees per batch:
6. Duration:
 (To be given in WD/W/M/Y)
 WD = Working Days
 W = Weeks
 M = Months
 Y = Year
7. Proposed Period:.....
 (Specific dates in the case of in service training, proposed month in the case of vocational training)
8. Venue:
9. Course Director:
 Name :.....
 Designation :.....
10. No. of lecture sessions :.....
 (one hour sessions)
11. No. of practical sessions :.....
12. Expenditure (To be provided under the following heads: The estimate given will not be altered once Approved)
- a. Honorarium @Rs.50/- per hour lecture & Rs.50/-per 2 hours of practicals
- b. Teaching aids and stationery
- c. POL charges, if any
- d. Other items (to be specified)
- e. 20% Overhead charges
- Total _____

(Practical Utility and Training Syllabus should be enclosed in Form B attached herewith)

Signature:

Date:

Name:

Station:

Designation:

FORM B

Category of Training: In service/Vocational/Stipendiary

Title of the Training Programme:.....

.....

.....

.....

Duration:(WD/W/M/Y)

Category of personnel to be trained:

.....

Practical utility of the training:

(One paragraph of approximately 100 words)

.....

.....

.....

Training Syllabus:

(One paragraph of approximately 200 words)

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CLASSIFICATION OF TRAINING PROGRAMMES

- A. **IN SERVICE TRAINING:** training cost i.e. actual expenditure plus 20% institution overheads would have to be borne by the Sponsoring Agency/Department.
- B. **VOCATIONAL TRAINING:** training cost i.e. actual expenditure alone would be collected from the candidates by way of fees such that no loss is incurred to the KAU on account of the training. In case the candidates are sponsored by an agency, 20% institutional overheads would also be charged.
- C. **STIPENDIARY TRAINING:** In cases where the KAU stands to benefit from the services of the trainees a monthly stipend sanctioned by the Vice Chancellor is paid to the trainees. Sufficient funds should be available with the institution proposing stipendiary trainings under the head of account 842 stipend.

Abbreviations

WD	- Working Day
CRS	- Cashew Research Station
AO	- Agricultural Officer
AD	- Assistant Director
ADAH	- Assistant Director of Animal Husbandry
FO	- Field Officer
IPM	- Integrated Pest Management
CTI	- Central Training Institute
RARS	- Regional Agricultural Research Station
ADA	- Assistant Director of Agriculture
M	- Month
TSS	- Training Service Scheme
TOT	- Transfer of Technology
DDA	- Deputy Director of Agriculture
COA	- College of Agriculture
COF	- College of Forestry
CoV&AS	- College of Veterinary & Animal Sciences
VS	- Veterinary Surgeon
SVS	- Senior Veterinary Surgeon
VO	- Veterinary Officer
KAU	- Kerala Agricultural University
COH	- College of Horticulture
COF	- College of Fisheries
ARS	- Agricultural Research Station
UY	- Unemployed Youth
W	- Women
F	- Farmer
E	- Entrepreneur

*Inservice
Training Programme*

TRAINING SCHEDULE 2006 -'07

INSERVICE TRAINING: DEPARTMENT OF AGRICULTURE

1. PRECISION FARMING TECHNIQUES

Duration	: 2 WD
Dates	: 12 th to 13 th June 2006
Venue	: KCAET, Tavanur
No. of Batch	: 1
Trainees	: AOs of Kannur District
No. of Trainees/Batch	: 30
Course Director	: Dr. Jippu Jacob, Dean i/c

Syllabus

Precision Farming – Guide lines on implementation of MI and NHM schemes – Nature of scheme – Pattern of Assistance – Scheme components – Drip irrigation – Sprinkler irrigation – Scheme administration – Beneficiary selection – Disbursement of assistance – Manufacturers – quality control – After sales service – Requirement of materials for drip irrigation – variation with crop spacing and area of cultivation – Estimation of water and power requirement for installation of drip irrigation – Protected cultivation – Green House for Kerala – Machinery and equipments related to Precision Farming – Problems related to the working of machinery in specific sites – Post harvest operations of horticultural crops – Processing techniques of horticultural produces – Equipments for post harvest processing etc.,

2. PRECISION FARMING TECHNIQUES

Duration	: 2 WD
Dates	: 20 th to 21 st June 2006
Venue	: KCAET, Tavanur
No. of Batch	: 1
Trainees	: AOs of Kasaragod & Wyanad Districts
No. of Trainees/Batch	: 30
Course Director	: Dr. Jippu Jacob, Dean i/c

Syllabus

Precision Farming – Guide lines on implementation of MI and NHM schemes – Nature of scheme – Pattern of Assistance – Scheme components – Drip irrigation – Sprinkler irrigation – Scheme administration – Beneficiary selection – Disbursement of assistance – Manufacturers – quality control – After sales service – Requirement of materials for drip irrigation – variation with crop spacing and area of cultivation – Estimation of water and power requirement for installation of drip irrigation – Protected cultivation – Green House for Kerala – Machinery and equipments related to Precision Farming – Problems related to the working of machinery in specific sites – Post harvest operations of horticultural crops – Processing techniques of horticultural produces – Equipments for post harvest processing etc.,

3. PRECISION FARMING TECHNIQUES

Duration	:	2 WD
Dates	:	July to December 2006
Venue	:	KCAET, Tavanur
No. of Batch	:	9
Trainees	:	AOs
No. of Trainees/Batch	:	30
Course Director	:	Dr. Jippu Jacob, Dean i/c

Syllabus

Precision Farming – Guide lines on implementation of MI and NHM schemes – Nature of scheme – Pattern of Assistance – Scheme components – Drip irrigation – Sprinkler irrigation – Scheme Administration – Beneficiary selection – Disbursement of assistance – Manufacturers – quality control – After sales service – Requirement of materials for drip irrigation – variation with crop spacing and area of cultivation – Estimation of water and power requirement for installation of drip irrigation – Protected cultivation – Green House for Kerala – Machinery and equipments related to Precision Farming – Problems related to the working of machinery in specific sites – Post harvest operations of horticultural crops – Processing techniques of horticultural produces – Equipments for post harvest processing etc.,

4. ENTREPRENEURSHIP DEVELOPMENT IN AGRICULTURE

Duration	:	6 WD
Dates	:	July 2006 to February 2007
Venue	:	CTI, Mannuthy
No. of Batch	:	
Trainees	:	AO's and ADAs
No. of Trainees/Batch	:	20
Course Director	:	Dr. P. Indira Devi, Assistant Professor (SS)

Syllabus

Theory:

1. Agribusiness in Kerala – Scope and Present status.
2. Professional management as an essential input in agribusiness (entrepreneurship, production and marketing management)
3. Entrepreneurial support programmes in agribusiness sector (technical and capital)
4. Forms of business organisations
5. Legal aspects and procedural formalities for starting a business unit
6. Risk management and insurance
7. Export markets and WTO provisions
8. New Agricultural Policy and Agribusiness

Practicals:

1. Participatory exercise in identifying potential agribusiness ventures in the Kerala perspective.
2. Visit to agribusiness units and case studies
3. Formulation and appraisal of agribusiness ventures /Preparation and analysis of balance sheets.

5. QUALITY VEGETABLE SEED PRODUCTION

Duration	:	6 WD
Dates	:	25 th to 30 th September 2006
Venue	:	CTI, Mannuthy & COH, Vellanikkara
No. of Batch	:	1
Trainees	:	AO's/ ADAs/DDAs
No. of Trainees/Batch	:	20
Course Director	:	Associate Professor & Head

Syllabus

Status of Vegetable seed production in Kerala – Principles of quality seed production in different tropical vegetable crops – Integrated Nutrient Management for vegetable seed production – Integrated Pest and Diseases Management – Harvesting and processing of vegetable seeds – Scientific seed storage – Seed treatment and invigoration techniques – Nursery techniques etc., - Classes on different types of seed – Isolation distance to be followed in the field rouging techniques to be undertaken will be included in the syllabus

6. ORGANIC FARMING IN MAJOR SPICES

Duration	:	6 WD
Dates	:	15 th to 20 th January 2007
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	DDAs/ADAs and AO's
No. of Trainees/Batch	:	20
Course Director	:	Dr. K. Vasanthakumar, Associate Professor

Syllabus

Theory:

Current scenario on spices of Kerala – area, production and export of organic spices and organic spice products – Crop management practices in organic cultivation of black pepper, cardamom, ginger, turmeric, vanilla, chillies, tree spices and herbal spices – use of bio fertilizers viz., *Azospirillum*, *Mycorrhiza* – large scale production and application of microbial inoculants like *Trichoderma*, *Pseudomonas* in spice crops – Production and use of bio pesticides in effective control of insect pests, nematodes etc., - Preparation and use of effective botanicals like panchagavya pest and disease control of spices – processing and development of organic spice products – Quality control and specifications for organically produced raw spices and products – detailed discussions on organic certification for spices – Marketing and export of organic spices

Practical:

Visit to progressive farmer's spice gardens adopting organic cultivation– familiarizing organic practices – Practical sessions on preparation and application of bio fertilizers – demonstrations on production and use of microbial inoculants – Preparation of “Panchagavya” – Visits to Peerumedu Development Society and Organic plots of cardamom and black pepper in Idukki District – Visit to INDOCERT, Alwaye and Spices Board – Visit to auction/marketing centres of spices to analyze the potential of organic spices in domestic and export trading

7. PROMOTION OF PUBLIC PRIVATE PARTNERSHIP

Duration	: 6 WD
Dates	: Mutually convenient dates
Venue	: CTI, Mannuthy
No. of Batch	: 1
Trainees	: AOs/ADAs/DDAs
No. of Trainees/Batch	: 20
Course Director	: Dr. Alexander George Assistant Professor

Syllabus

Change and the Impediments to Change within a Public system – Comparison of working environments: Public and Private – The changing Global situation and the need for networking – Experience sharing of initiatives in Public-Private Partnerships – Personality and System Inertia. Motivational Dynamics in a Public Private Interface. Synergy in Networking.

8. WOMEN FRIENDLY TECHNOLOGIES IN AGRICULTURE

Duration	: 5 WD
Date	: Mutually convenient dates
Venue	: CTI, Mannuthy
No. of Batch	: 1
Trainees	: AOs/ADAs/DDAs
No. of Trainees/Batch	: 20
Course Director	: Dr. P.S. Geethakutty Associate Professor

Syllabus

Theory:

Advanced floricultural technology - Bio control agents – Hardening – Fodder cultivation – Vermicomposting, Coir pith and Azolla production – Mushroom cultivation and spawn production – Cashew processing – Pala plate, bana fibre – Apiculture- Chocolate production – Nursery management – Advanced technology in Animal husbandry – Women friendly implements – Processing fruits/vegetables.

Practical:

Bio-control agents – Hardening – Vermicomposting, Coir pith and Azolla production – Mushroom cultivation and spawn production.

9. RECENT ADVANCES IN SUSTAINABLE PRODUCTION OF SPICES

Duration	:	4 WD
Dates	:	22 nd to 25 th August 2006
Venue	:	CRS, Pampadumpara
No. of Batch	:	1
Trainees	:	AO's and ADAs
No. of Trainees/Batch	:	20
Course Director	:	Dr. G. Siva Kumar, Assistant Professor

Syllabus

Over all view of Organic Farming: Concept – Organic farming principles and practices – Scope and relevance of organic farming in spices – certification with reference to spices.

General cultivation practices of spices with reference to cardamom and black pepper: Varieties – Soil and Climate – Advanced production technologies of black pepper and cardamom.

Good agricultural practices of spices: IPR regulations

Biological control of insect pests of cardamom and black pepper: Insect pests of cardamom and black pepper, life cycle, occurrence, damage and control – Role of entomopathogenic nematodes (EPN) and other bio agents in pest control – Scope of EPN in spices pest management, mass multiplication and delivery methods of EPN. Botanicals and semiochemicals in pest management of spices.

Biological control of diseases of cardamom and black pepper: Diseases of cardamom and black pepper, occurrence, symptoms and Management – Role of *Trichoderma* sp and *Pseudomonas* sp in cardamom ecosystem – Mass multiplication and delivery methods of fungal and bacterial bio control agents.

Processing: On farm processing and value addition of spices with reference to black pepper, cardamom, ginger and turmeric.

10. PROCESSING AND PRODUCT DEVELOPMENT OF SPICES

Duration	:	6 WD
Dates	:	20 th to 25 th November 2006
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	ADAs and AO's
No. of Trainees/Batch	:	25
Course Director	:	Dr. K. Vasanthakumar, Associate Professor

Syllabus

Theory:

Current scenario on spices of Kerala – area, production and export of spices and spice products harvest indices of spices for various products – cleanliness in handling, storage and processing – discussions on farm level processing – utilization of conventional solar energy for on farm processing – grading of raw (dried) spices – packaging of spices – product diversification in black pepper, cardamom, ginger, turmeric, vanilla, chillies, clove, nutmeg, cinnamon, all spice and other minor spices – spice extracts – oleoresins – oils – spice powders – curry powders (masal mixes) – recent innovations in product diversification – quality control of spices and spice products – microbial contamination of spices during storage and their control – production, processing and certification for organic spices – marketing of spices and export – future perspectives of spices products.

Practical:

Visit to progressive farmer's spice gardens – familiarizing the stages of harvesting – farm level processing or clean spice production – grading at farm level – packaging, storage and marketing of raw spices – visit to centres of dry ginger production – visit to small, medium and large industrial units of curry powders – visit to industrial units like Synthite, Kancor, Cochin Spices, Plant lipids etc., - Visit to Spices Board, Quality Control Laboratory for acquainting quality specifications of spices – visit to Agmark Laboratory, Cochin for familiarizing grades of spices – Visit to auction/marketing centres of spices.

11. INNOVATION IN PRODUCTION, PROCESSING AND MARKETING OF PLANTATION CROPS

Duration	:	6 WD
Dates	:	25 th to 30 th September 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	ADAs and AO's
No. of Trainees/Batch	:	20
Course Director	:	Dr. K. Vasanthakumar, Associate Professor

Syllabus

Theory:

Cultivation of Plantation crops in India, an overview – present scenario on statistics (Area, Production and Export) of Plantation crops – analysis – new varieties/clones in plantation crops, Viz, Coconut, Cashew, Rubber, Coffee, Tea, Cocoa – improved methods in crop husbandry of plantation crops – innovations in manorial practices, water management, Pest and disease control – thrust on bio – control agents viz., *Azospirillum*, *Rhizobium* etc., - modern technology adopted in on farm processing and product diversification – development of organic plantation products – trends in marketing of plantation products and export – WTO regulations and its impact on exports – debate on problems facing plantation crops – suggestions on improvement of production and export.

Practical:

Visit to experimental farms of College of Agriculture, Vellayani – Coconut Research Station, Balaramapuram – Visit to plantations of progressive farmers that are adopting high technology – Visit to processing factories undertaking diversified products in plantation crops – Visit to organic plots and acquainting organic cultivation practices – certification for organic products – Visit to small and big industrial units dealing with production of edible oils.

Study tours to oil palm India Ltd., Anchal, CPCRI Regional Station, Palode, Hi Tech cashew factories of Kollam district and other industrial processing units of plantation crops

12. TISSUE CULTURE BANANA FOR SUSTAINED PRODUCTION

Duration	:	4 WD
Dates	:	4 th to 7 th December 2006
Venue	:	COH, Vellanikkara
No. of Batch	:	1
Trainees	:	ADAs
No. of Trainees/Batch	:	15
Course Director	:	Dr. P. A. Valsala, Associate Professor

Syllabus

Introduction to plant tissue culture – are axis maintenance – media preparation and explants handling – Micro propagation technique of popular commercial cultivars – Management of Tissue culture plants in Nursery and Field – Clonal fidelity checking and virus indexing of Banana Tissue Culture Plants – Establishment of banana Tissue Culture based entrepreneurships and economics of mass multiplication – Practical classes about media preparation and other various micro propagation aspects.

13. TISSUE CULTURE BANANA FOR SUSTAINED PRODUCTION

Duration	:	4 WD
Dates	:	4 th to 7 th December 2006
Venue	:	COH, Vellanikkara
No. of Batch	:	1
Trainees	:	AOs
No. of Trainees/Batch	:	15
Course Director	:	Dr. P. A. Valsala, Associate Professor

Syllabus

Introduction to plant tissue culture – are axis maintenance – media preparation and explants handling – Micro propagation technique of popular commercial cultivars – Management of Tissue culture plants in Nursery and Field – Clonal fidelity checking and virus indexing of Banana Tissue Culture Plants – Establishment of banana Tissue Culture based entrepreneurships and economics of mass multiplication – Practical classes about media preparation and other various micro propagation aspects.

14. RECENT TRENDS IN BIO-CONTROL RESEARCH AND ITS APPLICATION IN AGRICULTURE

Duration	:	15 WD
Dates	:	December 2006 – January 2007
Venue	:	CTI, Mannuthy
No. of Batch	:	2
Trainees	:	AOs/ADAs/DDAs
No. of Trainees/Batch	:	15
Course Director	:	Dr. S. Estel tta, Associate Professor

Syllabus

Introduction of Bio-control agents – their role in IPM – Conservation of natural enemies – Storage/transport and field releases of bio-control agents – Operation of heavy duty equipments involved in mass production of entomopathogenic nematodes – mass multiplication of important entomopathogenic fungi – Formulation of entomopathogenic fungi/bacteria/viruses – Mass multiplication of AMF/*Pseudomonas* sp., *Trichoderma* spp/*Fusarium pallidoroseum*, *Bacillus* spp., etc. – Mass production of formulation of *Azotobacter* sp., *Azospirillum* etc. – Bio-technological tools in pest management – Predators & Parasitoids – Mass multiplication of coccinellid predators/*Chrysoperla*/*Gouiozors*/*Nephantides* / *Trichogramma* spp. – Mass multiplication of *Helicoverpa armigera* / *Spodoptera litura* for NPV production. Bio-pesticides – their role – Registration – quality control and commercialisation of Bio-pesticides.

INSERVICE TRAINING : DEPARTMENT OF ANIMAL HUSBANDRY

15. HEALTH CARE MANAGEMENT AND CHEMICAL IMMOBILISATION OF CAPTIVE ELEPHANTS

Duration	:	6 WD
Dates	:	20-11-2006 to 25-11-2006
Venue	:	COV&AS Mannuthy
No. of Batch	:	1
Trainees	:	Vety. Surgeons
No. of Trainees/Batch	:	10
Course Director	:	Dr. P. C. Alex, Assoc. Professor

Syllabus

Domestication of elephants – General management – Diseases and treatment of elephants – Training and restraint of elephants – Operation technique in elephants – Musth in elephants – Elephant nutrition – Chemical immobilisation – Handling of dart equipments – Visit to elephant camp – Reproduction and captive breeding.

16. HOSPITAL MANAGEMENT, MODERN DIAGNOSTICS AND THERAPEUTICS

Duration	:	4WD
Dates	:	17-10-2006 to 20-10-2006 19.12.2006 to 22.12.2006
Venue	:	University Veterinary Hospital, Kokkalai & Elite Mission Hospital, Koorckencherry.
No. of Batch	:	2
Trainees	:	Vety. Surgeons
No. of Trainees/Batch	:	5
Course Director	:	Dr. G. Ajitkumar, Assistant Professor (SS)

Syllabus

Surgery (1) Setting up of X-ray unit (2) Radiographic positioning (3) Processing of X ray films (4) Radiographic interpretation (5) Establishing small animal surgery unit (6) Familiarization of otoscopic and Ophthalmologic examination (7) Electrosurgery (8) Cryosurgery (9) Physiotherapy - Short wave diathermy, electro diagnosis & electro therapy, ultrasound therapy (10) Exposure to surgical cases

Medicine (1) Veterinary medical record keeping and hospital management (2) Special diagnostic techniques like ECG, ultrasonography etc., (3) Special therapeutic procedure. (4) Advanced epidemiological investigations, Vaccination schedule, serological investigations etc. Attending to medical cases.

Gynaecology: 1) Diagnosis and treatment of infertility in bovines. 2) Examination of genitalia collected from slaughterhouse. 3) Diagnosis of Sub – Clinical endometritis (White side test). 4) Common obstetrical procedures including obstetrical suturing 5) Handling of gestational accidents – abortion, torsion of uterus, prolapse of genital organs, hydrops of fetal membranes etc., 6) Handling of Post mortem complications. 7) AI in Goats and pregnancy diagnosis. 8) Handling of cases of infertility in bitches. 9) Management of pyometra and Pseudopregnancy 10) Study of vaginal cytology in bitches.

Elite Mission hospital, Koorckencherry

Familiarization of the latest advancements in medical diagnostic techniques.

17. POSTMORTEM TECHNIQUES

Duration	:	6 WD
Dates	:	13.11.2006 to 18.11.2006 11.12.2006 to 16.12.2006
Venue	:	COV & AS, Mannuthy
No. of Batch	:	2
Trainees	:	VS
No. of Trainees/Batch	:	10
Course Director	:	Dr. C. Lalithakunjamma Director i/c

Syllabus

Study of post-mortem technique in different species of animals and birds, laboratory tests, preparation of post-mortem reports and discussion, collection and processing of pathological materials for diagnosis, collection of tissues for histopathological examination, study of histopathological techniques and interpretation of slides.

18. MODERN DIAGNOSTIC TECHNIQUES OF EMERGING PARASITIC DISEASES

Duration	:	5 WD
Dates	:	20.11.2006 to 24.11.2006 11.12.2006 to 15.12.2006
Venue	:	COV & AS, Pookot
No. of Batch	:	2
Trainees	:	VS
No. of Trainees/Batch	:	10
Course Director	:	Dr. H. Subramanian Professor & Head, Dept. of Vety. Parasitology

Syllabus

The proposed syllabus encompasses the various aspects of recent trends in diagnosis of emerging parasitic diseases. Economic importance of parasitic disease will be briefly addressed. There will be detailed discussion on haemoprotozoan and haemoretic diseases like babesiosis, theileriosis, ehrlichiosis, anaplasmosis etc. The lecture schedules will also include sharing of the current updates in emerging tissue cyst coccidian like neosporosis and cryptosporidiosis. The role of vectors in disease transmission, anti-parasitic vaccines and current strategies in the treatment of haemoparasitic diseases will be dealt with in detail. Lecture classes will be arranged to detail the latest aspects of intestinal schistosomiasis. The training schedules also aim to create awareness in the emergence of anthelmintic resistance and its management under field conditions. The practical sessions will include preparation of blood and lymph node smear and demonstration of haemoparasites. Practical will also be conducted on vector identification, detection of cryptosporidium oocysts in clinical samples and demonstration of polymerase chain reaction as a diagnostic tool.

INSERVICE TRAINING : OTHER DEPARTMENTS

19. SKILL UPGRADATION IN WATER QUALITY MONITORING FOR HIGH SCHOOL SCIENCE CLUB TEACHERS

Duration	:	6 WD
Dates	:	28 th Aug to 2 nd Sep.2006, 18 th to 23 rd Sep 2006, 25 th to 30 th Sep 2006, 9 th to 14 th Oct 2006, 23 rd to 28 th Oct 2006
Venue	:	COVAS, Mannuthy
No. of Batch	:	5
Trainees	:	High School Teachers
No. of Trainees/Batch	:	20
Course Director	:	Dr. V. R. Raghunandan, Associate Professor

Syllabus

Theory:

1. Water: Sources, availability, requirement – domestic, irrigation, industry and recreation.
2. Water quality:
 - a) Physical quality
 - b) Chemical quality
 - c) Biological quality
 - d) Quality Standards
3. Water pollution: Sources, pollutants, health hazards
4. Microbial contaminations: Sources
5. Water quality management and remedial measures

Practical:

1. Sampling procedures
2. Preservation
3. Physical, Chemical and Biological quality analysis
4. Laboratory setting for water studies

20. TRANSFER OF TECHNOLOGY TECHNIQUES

Duration	:	6 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	Officers of the Coir Board
No. of Trainees/Batch	:	25
Course Director	:	Dr. Alexander George, Assistant Professor

Syllabus

Introduction to Personality and Communication Dynamics affecting Groups - Better Living Habits - Interpersonal Communication for TOT - Self Help Groups as a vehicle of TOT - Basic Introduction to use of Computers and Power Point for TOT - Motivation Techniques - Entrepreneurship Development in clientele - Challenges and Opportunities in the Agricultural Sector in the context of Globalization and WTO - Development Paradigms [with special reference to Coir] in the changing Global Scenario.

21. COMMUNICATION SKILLS

Duration	:	3 WD
Dates	:	7 th to 10 th June 06, 5 th to 17 th June 06, 26 th to 28 th June 06 3 rd to 5 th July 06
Venue	:	COA, Vellayani
No. of Batch	:	4
Trainees	:	District Sericulture Officers & Asst. Sericulture Officers
No. of Trainees/Batch	:	25
Course Director	:	Dr. B. Seema, Assistant Professor (SS)

Syllabus

Communication process, trends of communication, Non verbal communication Interpersonal communication, one way versus two way communication, communication barriers, experiencing effective delivery, listening skills – Media communication.

22. REFRESHER TRAINING ON EXTENSION, COMMUNICATION AND COMPUTERS FOR DAIRY EXTENSION OFFICERS

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	9
Trainees	:	Dairy Extension Officers
No. of Trainees/Batch	:	20
Course Director	:	Dr. Alexander George, Assistant Professor

Syllabus

Motivational Techniques, Communication and Group Dynamics, Interpersonal Communication, Preparation of Aids and Basic Introduction to use of Computers and Power Point Presentations for Extension, Leadership Development, Stress Management, Personal Effectiveness, Entrepreneurship Development, Cyber extension and private extension in India: Myths, Realities, Apprehensions and Approaches - New Paradigm of IT and their applications in Agriculture, Site specific Agriculture and Expert Systems in Agriculture, Better Living Habits, Management Games and Time Management

23. REFRESHER TRAINING ON EXTENSION, COMMUNICATION AND COMPUTERS FOR DAIRY FARM INSTRUCTORS

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	11
Trainees	:	Dairy Farm Instructor
No. of Trainees/Batch	:	25
Course Director	:	Dr. Alexander George, Assistant Professor

Syllabus

Motivational Techniques, Communication and Group Dynamics, Interpersonal Communication, Preparation of Aids and Basic Introduction to use of Computers and Power Point Presentations for Extension, Leadership Development, Stress Management, Personal Effectiveness, Entrepreneurship Development, Cyber extension and private extension in India: Myths, Realities, Apprehensions and Approaches - New Paradigm of IT and their applications in Agriculture, Site specific Agriculture and Expert Systems in Agriculture, Better Living Habits, Management Games and Time Management

24. IT ENABLED SERVICES IN AGRICULTURE

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	2
Trainees	:	Officers of the Rubber Board
No. of Trainees/Batch	:	20
Course Director	:	Dr. Alexander George, Assistant Professor

Syllabus

Basic Introduction to use of Computers and Power Point Presentations for Agricultural Extension - Basic Introduction to Internet and Videoconferencing - Preparation of Power Point Presentation with Back Home Utility Basic - IT knowledge for setting up of Information Technology Kiosks in rural areas for access to various agricultural related portals Cyber extension and private extension in India: Myths, Realities, Apprehensions and Approaches - New Paradigm of IT and their applications in Agriculture, Site specific Agriculture and Expert Systems in Agriculture IT enabled Services in Agriculture: A bottom up approach - GIS and GPS in Agriculture - Retrieval of information using IT enabled services - Role of IT in Agribusiness - Farmer Knowledge Management Systems E-Commerce and IT based Agri-Marketing - Agriculture Web - Portals Development Paradigms [with special reference to Rubber] in the Changing Global Scenario - Challenges and Opportunities in the Agricultural Sector in the context of Globalization and WTO

25. AUDIO – VISUAL AIDS IN EXTENSION

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	2
Trainees	:	Officers of the Rubber Board
No. of Trainees/Batch	:	20
Course Director	:	Dr. Alexander George, Assistant Professor

Syllabus

Preparation of Audio Visual Aids, Hands on use of computers for preparation of Power Point Presentations for Extension, Understanding the Nuances of Communication and Group Dynamics, Transactional Analysis in Interpersonal Communication, Motivational Techniques

26. SELF HELP GROUPS

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	2
Trainees	:	Officers of the Rubber Board
No. of Trainees/Batch	:	20
Course Director	:	Dr. Alexander George, Assistant Professor

Syllabus

Introduction to Personality and Communication - Dynamics affecting Groups - Organization of Self Help Group and its Management - Leadership for Self Help Groups - Interpersonal Communication in Self Help Groups - Self Help Group Formation - Management Conflict Management and Negotiations for SHGs - Dynamics of Self Help Group - Management Development Paradigms [with special reference to Rubber] and relevance of SHGs in the Changing Global Scenario.

27. HRD IN HORTICULTURE: TRAINING FOR ENTREPRENEURS / SUPERVISORS

Duration	:	1 Year
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	Entrepreneurs/Supervisors
No. of Trainees/Batch	:	25
Course Director	:	Sri. M. Israel Thomas, Assistant Professor

Syllabus

Productivity improvement, post harvest management, processing and marketing of Banana, Pineapple, Mango, Gooseberry, Ginger, Turmeric, Nutmeg, Pepper, Cashew, Cocoa, Vegetables and Flowers. Entrepreneurship Skills.

28. HRD IN HORTICULTURE: TRAINING FOR DISTRICT HORTICULTURE MISSION AND EXTENSION OFFICERS

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	District Horticulture Mission and Extension Officers
No. of Trainees/Batch	:	25
Course Director	:	Sri. M. Israel Thomas, Assistant Professor

Syllabus

Productivity improvement, post harvest management, processing and marketing of Bar ana, Pineapple, Mango, Gooseberry, Ginger, Turmeric, Nutmeg, Pepper, Cashew, Cocoa, Vegetables and Flowers. Management and Entrepreneurship Skills Development.

29. TRAINING FOR NON TECHNICAL STAFF ON MOTIVATIONAL TECHNIQUES

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	Non Technical staff of SERIFED
No. of Trainees/Batch	:	25
Course Director	:	Sri. M. Israel Thomas, Assistant Professor

Syllabus

Better Living Habits – Personal Time Management – Motivational Techniques for Self and Others – Transactional Analysis – Paradigm shifts – Development perspectives in the changing Global Scenario

30. EFFECTIVE CORPORATE MANAGEMENT

Duration	:	5 WD
Dates	:	Mutually convenient dates
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	Officers of CADA
No. of Trainees/Batch	:	20
Course Director	:	Sri. M. Israel Thomas, Assistant Professor

Syllabus

Better Living Habits – Personal Time Management – Motivational Techniques for Self and Others – Transactional Analysis – Paradigm shifts – Development perspectives in the changing Global Scenario.

HRD Training

H R D TRAINING

31. TELEPHONE SKILLS FOR PAs/STENOS

Duration	:	2WD
Dates	:	3 rd to 4 th August 2006
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	PAs/Stenos
No. of Trainees/Batch	:	15
Course Director	:	Dr. Alexander George, Assistant Professor (SS)

Syllabus

Receiving calls – Making calls – Transferring calls – Taking messages voice modulation – Listening skills – Courteous Assertiveness responding to people under stress/in crisis – Opening and closing courtesy – Responding to technical enquiries – Mistakes often made during telephonic conversation

32. TELEPHONE SKILLS FOR CLASS IV EMPLOYEES

Duration	:	2 WD
Dates	:	10 th to 11 th August 2006
Venue	:	CTI, Mannuthy
No. of Batch	:	1
Trainees	:	Class IV Employees
No. of Trainees/Batch	:	15
Course Director	:	Dr. Alexander George, Assistant Professor (SS)

Syllabus

Receiving calls – Making calls – Transferring calls – Taking messages voice modulation – Listening skills – Courteous Assertiveness responding to people under stress/in crisis – Opening and closing courtesy – Responding to technical enquiries – Mistakes often made during telephonic conversation.

BIO TECHNOLOGY/TISSUE CULTURE TRAINING FOR GRADUATES

(For Graduates other than Agricultural University)

33. PLANT TISSUE CULTURE TECHNIQUE/PLANT BIOTECHNOLOGY

Duration	:	1 Month
Dates	:	August, October, December 06 & January 07
Venue	:	ORARS, Kayamkulam.
No. of Batch	:	4
Trainees	:	UY/Students
No. of Trainees/Batch	:	8
Course Director	:	Dr. M. R. Bindu, Assistant Professor (Sr. Scale)

Syllabus

Theory:

Introduction to Plant Biotechnology, History of Plant Biotechnology. Scope and its importance in Agriculture/Horticulture. Introduction to Agricultural Microbiology – General Techniques – application in Agriculture – General techniques of plant tissue culture – Equipment used – Lay out of a model PTC laboratory – Culture vessels – Sterilization. Culture media – Components role – Conditions – Role. Micro propagation methods – different stages – Explants selection – Culture establishments – Shoot proliferation – Rooting – Hardening. Protoplast Isolation, fusion, Somatic hybridisation. Anther culture. Organic farming – Waste recycling – Microbial degradation. Application of Genetic Engineering in Crop Improvement – Intellectual Property Rights.

Practical:

Handling of different equipment in Biotechnology laboratory – Preparation of stock solution. Preparation of media for Organogenesis – Sterilization, washing, cleaning – sterilization of glasswares & instruments. Explant selection – Inoculation – Media preparation for Callus induction. Production of axenic seedlings in tomato, rice. Preparation of media for root induction. Inoculation for rooting. Hardening and planting out of rooted plantlets. Suspension culture. Protoplast isolation, culturing and fusion in Orchids.

34. PLANT TISSUE CULTURE TECHNIQUE / PLANT BIOTECHNOLOGY

Duration	:	3 Months
Dates	:	Sep – Nov 06 Dec 06 - January 07
Venue	:	ORARS, Kayamkulam.
No. of Batch	:	2
Trainees	:	UY/Students
No. of Trainees/Batch	:	3
Course Director	:	Dr. M. R. Bindu, Assistant Professor (Sr. Scale)

Syllabus

Theory:

Introduction to Plant Biotechnology, History of Plant Biotechnology. Scope and its importance in Agriculture/Horticulture. Introduction to Agricultural Microbiology – General Techniques – application in Agriculture – General techniques of plant tissue culture – Equipment used – Lay out of a model PTC

laboratory – Culture vessels – Sterilization. Culture media – Components role – Conditions – Role. Micro propagation methods – different stages – Explants selection – Culture establishments – Shoot proliferation – Rooting – Hardening. Protoplast Isolation, fusion, Somatic hybridisation. Anther culture. Organic farming – Waste recycling – Microbial degradation. Application of Genetic Engineering in Crop Improvement – Intellectual Property Rights.

Practical:

Handling of different equipment in Biotechnology laboratory – Preparation of stock solution. Preparation of media for Organogenesis – Sterilization, washing, cleaning – sterilization of glasswares and instruments. Explant selection – Inoculation – Media preparation for Callus induction. Production of axenic seedlings in tomato, rice. Preparation of media for root induction. Inoculation for rooting. Hardening and planting out of rooted plantlets. Suspension culture. Protoplast isolation, culturing and fusion in Orchids.

35. TECHNIQUES AND APPLICATION OF TISSUE CULTURE

Duration	: 1 Month
Dates	: 15 th May to 15 th June, 2006
Venue	: CoH, Vellanikkara
No. of Batch	: 1
Trainees	: M.Sc. Bio-technology students
No. of Trainees/Batch	: 7
Course Director	: Dr. P. A. Nazeem, Associate Professor & Head

Syllabus

Theory:

Introduction to Plant Biotechnology, History of Plant Biotechnology. Scope and its importance in Agriculture/Horticulture. Introduction to Agricultural Microbiology – General Techniques – application in Agriculture – General techniques of plant tissue culture – Equipment used – Lay out of a model PTC laboratory – Culture vessels – Sterilization. Culture media – Components role – Conditions – Role. Micro propagation methods – different stages – Explants selection – Culture establishments – Shoot proliferation – Rooting – Hardening. Protoplast Isolation, fusion, Somatic hybridisation. Anther culture. Organic farming – Waste recycling – Microbial degradation. Application of Genetic Engineering in Crop Improvement – Intellectual Property Rights.

Practical:

Handling of different equipment in Biotechnology laboratory – Preparation of stock solution. Preparation of media for Organogenesis – Sterilization, washing, cleaning – sterilization of glasswares & instruments. Explants selection – Inoculation – Media preparation for Callus induction. Production of axenic seedlings in tomato, rice. Preparation of media for root induction. Inoculation for rooting. Hardening and planting out of rooted plantlets. Suspension culture. Protoplast isolation, culturing & fusion in Orchids.

36. TECHNIQUES AND APPLICATION OF TISSUE CULTURE

Duration	: 1 Month
Dates	: 17 th April to 17 th May, 2006
Venue	: CoA, Padannakkad
No. of Batch	: 1
Trainees	: M.Sc. Bio-technology students
No. of Trainees/Batch	: 3
Course Director	: Dr. T. Pradeepkumar, Assistant Professor (SS) & Head

Syllabus

Theory:

Introduction to Plant Biotechnology, History of Plant Biotechnology. Scope and its importance in Agriculture/Horticulture. Introduction to Agricultural Microbiology – General Techniques – application in Agriculture – General techniques of plant tissue culture – Equipment used – Lay out of a model PTC laboratory – Culture vessels – Sterilization. Culture media – Components role – Conditions – Role. Micro propagation methods – different stages – Explants selection – Culture establishments – Shoot proliferation – Rooting – Hardening. Protoplast Isolation, fusion, Somatic hybridisation. Anther culture. Organic farming – Waste recycling – Microbial degradation. Application of Genetic Engineering in Crop Improvement – Intellectual Property Rights.

Practical:

Handling of different equipment in Biotechnology laboratory – Preparation of stock solution. Preparation of media for Organogenesis – Sterilization, washing, cleaning – sterilization of glasswares and instruments. Explants selection – Inoculation – Media preparation for Callus induction. Production of axenic seedlings in tomato, rice. Preparation of media for root induction. Inoculation for rooting. Hardening and planting out of rooted plantlets. Suspension culture. Protoplast isolation, culturing and fusion in Orchids.

37. APPLICATION OF BIO TECHNOLOGY FOR MASS PRODUCTION OF BIO FERTILIZERS AND BIO CONTROL AGENTS

Duration	:	15 WD
Dates	:	3 rd to 20 th July, 2006
Venue	:	CoH, Vellanikkara
No. of Batch	:	2
Trainees	:	PG (UY)
No. of Trainees/Batch	:	7
Course Director	:	Dr. P.C.Rajendran, Associate Professor & Head

Syllabus

Scope and advances in bio-fertilizer production – Isolation, culture and enumeration of important N_2 – fixing bacteria – Mass production of azolla, spirulina and micormia – Mass production of Trichoderma and pseudomonas – Biological control of crop pests with predators, pathogens and parasitoids – Mass production of Trichogramma (Tricho card), Baculovirus and Green muscardine fungus – Isolation, culturing and virus indexing on serious virus diseases of agri-horti crops – N_2 fixation genes and their regulation in N_2 fixation – Genetic modification of nif genes for biological N_2 fixation in plants. Application of panchagavya and dasagavya in plant growth and pest control – Fungicidal and insecticidal properties of medicinal plant origin – Weedicide resistance through biotechnology.

NET WORK PROGRAMME

38. FARMERS AWARENESS PROGRAMME ON RURAL GODOWNS

Duration	:	3 days
Dates	:	July 2006
Venue	:	CTI, Mannuthy
No. of Batch	:	3
Trainees	:	Farmers
No. of Trainees/Batch	:	3
Course Director	:	Dr. S. Bhaskaran, Professor of Extension

Syllabus

Objective Function and Scope of Rural Godown - Financial aspects of warehouse - Code of Godown practices and handling of produce - Pest control and disinfections - Stacking of goods and documentation for storage - Security measures at rural Godown - Quality Assurance i.e. Grading and Standardization - Warehouse Receipt System, Issuance and Transferability etc., - Legal Frame work i.e. Acts SWA, Weights & Measurement - Role of Banks and Warehouse Receipt System - Pledge loan schemes - Future Trading of Agriculture Commodities - National Rural Godown Schemes and other schemes.

Stipendiary Training

STIPENDIARY TRAINING

39. VETERINARY PHARMACY AND ARTIFICIAL INSEMINATION FOR VHSE CERTIFICATE HOLDERS (Dairying and Animal Husbandry)

Duration	:	6 Months
Dates	:	May 2006 to March 2007
Venue	:	KAU Veterinary Hospital, Kokkalai
No. of Batch	:	1
Trainees	:	VHSE Certificate holders
No. of Trainees/Batch	:	5
Course Director	:	Dr. P. C. Alex, Associate Professor & Head

Syllabus

Elementary Knowledge on Anatomy & Physiology of domestic animals – Collection and preservation of clinical materials – Routine laboratory procedures – Pharmacy – Feeding and management of domestic animals – Basic knowledge on diseases of animals and birds – Sterilisation of instruments – Restraint of animals – Veterinary first aid – Semen processing – Artificial Insemination – Maintenance of records & Registers

40. MEAT PROCESSING TECHNOLOGY & WHOLESOME MEAT PRODUCTION

Duration	:	1 year
Dates	:	December 2006
Venue	:	Meat Technology Unit, Mannuthy
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	8
Course Director	:	Dr. P. Kuttinarayanan, Assoc. Professor & Head

Syllabus

Hygienic meat production - different sections of an abattoir and their uses – plant personnel hygiene – slaughtering techniques for different species of animals – meat cutting and packaging techniques – meat plant sanitation – preparation of different meat products and their packaging – preservation and storage of meat and meat products – Rendering of slaughter house by-products.

41. MEAT PLANT OPERATION AND MAINTENANCE

Duration	:	1 year
Dates	:	December 2006
Venue	:	Meat Technology Unit, Mannuthy
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	4
Course Director	:	Dr. P. Kuttinarayanan, Assoc. Professor & Head

Syllabus

Broad outline of different sections of abattoir and general aspects of slaughter and meat products preparation. Different section and operation procedures of refrigeration plant. Maintenance and repair of compressors and split unit Air conditioning - Defrosting techniques of the deep freezer rooms – filter cleaning, oil changing and leakage testing procedures – operation and maintenance of slaughter house rail system and equipments, meat processing equipments and rendering plant. Refrigerants – different types.

42. MEAT PROCESSING-CUM-PLANT OPERATION

Duration	:	2 years
Dates	:	December 2006
Venue	:	Meat Technology Unit, Mannuthy
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	3
Course Director	:	Dr. P. Kuttinarayanan, Assoc. Professor & Head

Syllabus

General aspects of meat production – Maintenance of different sections of an abattoir – plant personal hygienic – maintenance of animals in the lairage – Slaughtering techniques of different species of animals – Sanitation of the meat plant and surroundings – Maintenance of refrigeration system – Meat cutting and packaging techniques – Methods for preparation of different meat products and their storage – Recovery and storage of slaughter house by products.

43. OPERATION AND MAINTENANCE OF DAIRY EQUIPMENT

Duration	:	1 Year
Dates	:	1.07.06 to 30.06.07
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	ITI certificate holders
No. of Trainees/Batch	:	4
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – cleaning and sanitization – duties and responsibilities. Reception of milk – sampling – chilling – storage. Pasteurisation of milk – HTST method – operation of pasteurizer – maintenance of pasteurizer. Packaging of milk – operation of Automatic milk Packing machine – care and maintenance of packing machine. Cream separator – operation and maintenance. Homogenizer and Ice cream freezer – operation and maintenance. Butter churn – operation and maintenance. CIP cleaning of pipelines and storage tanks. Operation of product manufacturing equipment such Khoa pan and Ghee boiler. Milk condensing equipment- operation of vacuum evaporator – maintenance of evaporator. Milk drying equipments - Roller drier – spray drier – operation and maintenance. Boilers – Hot water boiler and steam boiler – operation and maintenance – Refrigeration plant - Ammonia compressor – operation and maintenance – Cleaning and maintenance of condenser – cooling tower – maintenance of evaporator – Operation of Valves and other controls in the system. Diesel generator – operation and maintenance.

44. PREPARATION AND QUALITY ASSURANCE OF MILK AND MILK PRODUCTS

Duration	:	1 Year
Dates	:	1.07.06 to 30.06.07
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	VHSE certificate holders in Dairying
No. of Trainees/Batch	:	2
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – cleaning and sanitization – personal hygiene – duties and responsibilities. Preparation of reagents for the testing of milk and milk products. Introduction to various unit operations in milk processing

Reception of milk – platform tests – detection of adulterants, preservatives and neutralizers. Testing of milk – estimation of fat, acidity, SNF, total solids. Analysis of Pasteurised and sterilized milk. Preparation of various milk products such as Khoa, Paneer, curd, sambharam, ghee, flavoured milk etc., Analysis of milk products for acidity, fat, total solids and comparison of constituents of the products with the legal standards. Legal standards for the milk and milk products

45. PREPARATION AND PACKAGING OF INDIGENOUS MILK PRODUCTS

Duration	:	1 Year
Dates	:	01.01.07 to 31.12.07
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	4
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – cleaning and sanitation – personal hygiene – duties and responsibilities. Handling of milk in the raw milk reception dock - Importance of chilling milk and study of milk chillers. Cleaning of dairy equipments, pipelines and maintenance of sanitary conditions in the dairy plant CID cleaning. Pasteurisation of milk – its importance. Sampling techniques for drawing milk sample from milk storage tank, pasteuriser and packing machine. Familiarization of various unit operations such as cream separation, homogenization, etc. Preparation of various milk products such as Ice cream, khoa, lassi, sambharam, paneer, butter, ghee, rassogolla, gulabjamun, milk powder etc. Packaging of milk and various milk products. Utilization of by-products – whey – buttermilk. Familiarization of various milk testing techniques.

46. HYGIENIC PRACTICES IN HANDLING AND PROCESSING OF MILK AND PREPARATION OF MILK PRODUCTS

Duration	:	1 Year
Dates	:	01.01.07 to 31.12.07
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	4
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – Cleaning and sanitation – personal hygiene – duties and responsibilities. Handling of milk in the raw milk reception dock – Cleaning of floors – cleaning agents used – Washing and sterilization of cans – methods used. - Importance of chilling milk and operation of milk chillers - Cleaning of dairy equipments, pipelines and maintenance of sanitary conditions in the dairy plant. Pasteurization of milk – its importance – operation and cleaning of pasteurizer. Sampling techniques for drawing milk sample from milk storage tank, pasteurizer and packing machine. Familiarization of various unit operations such as cream separation, homogenisation etc. Preparation of various milk products such as Ice cream, khoa, curd, lassi, sambharam, paneer, butter, ghee, rassogolla, gulabjamun, milk powder etc. Packaging of milk and various milk products. Utilization of by-products – Whey – buttermilk - Familiarisation of various milk testing techniques.

47. VEGETABLE SEED PRODUCTION AND NURSERY PRACTICES

Duration	:	6 Months
Dates	:	Nov/Dec 2006 to May/June 2007
Venue	:	ARS, Chalakudy
No. of Batch	:	1
Trainees	:	VHSE (Agri) – Fruits & Vegetables/Nursery Management & Ornamental Gardening
No. of Trainees/Batch	:	6
Course Director	:	Dr. V. S. Devadas, Associate Professor & Head

Syllabus

Theory

a) Plant Propagation

1. Plant propagation practices – basic methods
2. Seed Propagation
3. Vegetative propagation methods
4. Types of cuttings and rooting
5. Media and weather conditions for rooting
6. Lay out of seed and Nursery Farm
7. Layering methods

8. Grafting methods
9. Budding methods
10. Nursery and Gardening techniques
11. Tissue culture propagation

b) Seed Production:

1. Scope of seed and nursery programme on commercial basis
2. Natural resources and inputs – selection of site and season for seed production.
3. Seed Act and Regulations
4. Seed quality parameters and quality enforcement
5. Seed testing and maintaining records
6. Type of pollination, classification
7. Field standards, crop standards and seed standardization
8. Seed production of solanaceous vegetables
9. Seed production of cucurbits
10. Seed production of bhindi, legumes & amaranthus
11. Improved varieties and their characters
12. Seed production of tuber vegetables
13. Maturity standards for seed extraction
14. Seed extraction and processing
15. Scientific seed storage
16. Seed treatments
17. Seed extraction and plant protection equipments
18. Commercial seed companies at national and international levels
19. Farm records, Labour management and Farm Accounting
20. Marketing and sales promotion
21. Techniques in Hybrid seed production

c) Organic farming:

1. Organic farming
2. Eco friendly plant protection measures
3. Soil and water conservation measures
4. Agro Chemicals and their use

B. Practical:

Hands-on practical training will be imparted in the seed production field, lab and nursery daily on various crops covering all the above aspects. This is a practical oriented training and more than 85% sessions will be devoted to practicals. Apart from the training at this station, trainees will be taken to seed testing labs, commercial seed production plots, tissue culture labs, commercial nurseries etc., also.

48. HATCHERY MANAGEMENT

Duration	:	1 Year
Dates	:	February 2007 to January 2008
Venue	:	CAPS, COVAS, Mannuthy
No. of Batch	:	1
Trainees	:	VHSE Certificate Holders in Poultry Science
No. of Trainees/Batch	:	5
Course Director	:	Dr. A. Jalaludeen, Director

Syllabus

Hatchery – Lay out – Incubator – Setter – Hatcher – incubation – period of eggs of difference species – physical conditions of incubator – selection of hatching eggs – Handling of hatching eggs – setting of eggs – candling of eggs – Disinfection of hatchery – Hatchery equipments – Fumigation – Management of Hatchery – Record keeping – Hatch day operations – Calculation of hatchability percentage – Management of layers, Broilers and quails – Economics.

Vocational Training

VOCATIONAL TRAINING

49. FRUIT AND VEGETABLE PROCESSING

Duration	:	5 WD
Dates	:	3 rd to 7 th April, 2006
Venue	:	CoH, Vellanikkara
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	20
Course Director	:	Dr. Jacob John, Associate Professor & Head

Syllabus

Introduction to causes of spoilage - various techniques in fruit and vegetable processing - handling of fruits and vegetable for processing – application of heat in processing – chemical preservatives and their application – fermentation and various fermented fruit and vegetable products – ready to serve and ready to eat product – Packaging and marketing of fruits and vegetable products – FPO license – How to obtain it

Practical Preparation of various fruit and vegetable products like jams, jelly, squash, RTS beverages – Thermal processing – minimal processing etc.,

50. PRECISION FARMING TECHNIQUES

Duration	:	1 day
Dates	:	1 st week of June 2006
Venue	:	CRS, Pampadumpara
No. of Batch	:	1
Trainees	:	Cardamom farmers
No. of Trainees/Batch	:	30
Course Director	:	Dr. Jippu Jacob, Dean i/c

Syllabus

Water scenario of Kerala – Water Management need and techniques – Advantages of Micro irrigation over surface irrigation methods – Different types of micro irrigation systems – Drip irrigation – Sprinkler irrigation – Requirement of materials for drip irrigation – variation with crop spacing and area of cultivation – Estimation of water and power requirement for installation of drip irrigation – Establishment and maintenance - Protected cultivation – Green House for Kerala – Machinery and equipments related to Precision Farming – Problems related to the working of machinery in specific sites – Post harvest operations of horticultural crops – Processing techniques of horticultural produces – Equipments for post harvest processing etc.

51. BIO RESOURCES FOR SCHOOL CHILDREN

Duration	:	22 days
Dates	:	24 th April to 20 th May, 2006
Venue	:	CoA, Vellayani
No. of Batch	:	1
Trainees	:	School children
No. of Trainees/Batch	:	
Course Director	:	Dr. K. Rajmohan, Associate Professor

52. TRAINING FOR FERTILIZER DEALERS OF MANGALORE CHEMICALS AND FERTILIZERS LTD.

Duration	: 3 WD
Dates	: 27 th to 29 th June, 2006
Venue	: CTI, Mannuthy
No. of Batch	: 1
Trainees	: Fertilizer dealers
No. of Trainees/Batch	: 25
Course Director	: Dr. Alexander George, Assistant Professor

Syllabus

Balanced use of Fertilizers – Integrated Nutrient Management – Packages of Practices for Paddy and Coconut – Benefits and use of Micro Nutrients – Important Crop Diseases, Pest and their control – followed by field visit – Package of Practices for Rubber – Fertilizer Control Order

53. PRECISION FARMING TECHNIQUES

Duration	: 1 day
Dates	: June to November 2006
Venue	: Various centres
No. of Batch	: 5
Trainees	: Farmers
No. of Trainees/Batch	: 30
Course Director	: Dr. Jippu Jacob, Dean i/c

Syllabus

Water scenario of Kerala – Water Management need and techniques – Advantages of Micro irrigation over surface irrigation methods – Different types of micro irrigation systems – Drip irrigation – Sprinkler irrigation – Requirement of materials for drip irrigation – variation with crop spacing and area of cultivation – Estimation of water and power requirement for installation of drip irrigation – Establishment and maintenance - Protected cultivation – Green House for Kerala – Machinery and equipments related to Precision Farming – Problems related to the working of machinery in specific sites – Post harvest operations of horticultural crops – Processing techniques of horticultural produces – Equipments for post harvest processing etc.,

54. POST HARVEST HANDLING AND VALUE ADDITION OF COCONUT

Duration	: 3 WD
Dates	: June 2006 to January 2007
Venue	: CTI, Mannuthy
No. of Batch	: 10
Trainees	: W
No. of Trainees/Batch	: 20
Course Director	: Dr. P. B. Pushpalatha, Assistant Professor (SS)

Syllabus

ഇളനീർ ലഘു സംസ്കരണം - ഇളനീരിനെ അടിസ്ഥാനപ്പെടുത്തിയുള്ള ഉൽപ്പന്നങ്ങൾ - തേങ്ങയിൽ നിന്നും ഗുണമേന്മയാർന്ന കൊപ്ര - വെളിച്ചെണ്ണ - തേങ്ങ കാമ്പിനെ അടിസ്ഥാനപ്പെടുത്തിയുള്ള ഉൽപ്പന്നങ്ങൾ. (ചിപ്സ്, ഡെഡിക്ക്കേഡ് കോക്കനട്ട്) തേങ്ങാപ്പാൽ അടിസ്ഥാനപ്പെടുത്തിയുള്ള ഉൽപ്പന്നങ്ങൾ (പാനീയങ്ങൾ, ദിറായി) നാളികേര വെള്ളത്തിൽ നിന്നും തേൻ, വിനാഗിരി, ലഘു പാനീയങ്ങൾ - ചകിരിച്ചോർ സംസ്കരണം, കരകൗശല വസ്തുക്കൾ.

55. MUSHROOM SPAWN PRODUCTION

Duration	: 1 Day
Dates	: September/October 2006
Venue	: COH, Vellanikkara
No. of Batch	: 5
Trainees	: UY
No. of Trainees/Batch	: 20
Course Director	: Dr. T. Sheela Paul, Associate Professor

Syllabus

General aspects – Preparation of Media – Isolation and Culturing, Spawn Production.

56. MUSHROOM CULTIVATION

Duration	: 1 Day
Dates	: September/October 2006
Venue	: COH, Vellanikkara
No. of Batch	: 5
Trainees	: UY/W/F
No. of Trainees/Batch	: 20
Course Director	: Dr. T. Sheela Paul, Associate Professor

Syllabus

Cultivation of oyster mushrooms – Milky mushroom – Crop Management – Processing technology – Economics of mushroom cultivation.

57. MUSHROOM CULTIVATION

Duration	: 2 WD
Dates	: 10, 11 August, 2006
Venue	: College of Horticulture, Vellanikkara
No. of Batch	: 1
Trainees	: E
No. of Trainees/Batch	: 10
Course Director	: Dr. T. Sheela Paul, Associate Professor

Syllabus

Isolation – Culturing – Spawn production – Cultivation of oyster mushrooms, Milky mushrooms – Economics of cultivation, etc.

58. FABRICATION AND INSTALLATION OF KAU MICROSPRINKLER

Duration	:	1 Day
Dates	:	October 2006 to February 2007
Venue	:	WMRU, Vellanikkara & ARS, Chalakudy
No. of Batch	:	4
Trainees	:	Kudumbasrees/trusts & Progressive farmers like Kudumbasrees/trusts and Staff of KAU
No. of Trainees/Batch	:	20
Course Director	:	Dr. P. Suseela, Assistant Professor

Syllabus

Introduction to KAU Micro sprinkler – components of KAU Micro Sprinkler – technical aspects of fabrication and installation of KAU Micro sprinklers – merits and demerits – field visit.

Practical: Practical training on the fabrication of the sprinkler heads and installation of KAU Micro Sprinkler Irrigation System.

59. TECHNOLOGIES FOR CASHEW APPLE PROCESSING

Duration	:	1 Day
Dates	:	January to February 2007
Venue	:	CRS, Madakkathara
No. of Batch	:	1
Trainees	:	Members of Kudumbasree units and SHGs and Woman Farmers
No. of Trainees/Batch	:	15
Course Director	:	Dr. Jose Mathew, Associate Professor & Head

Syllabus

Theory:

1. Principles of Cashew Apple Processing
2. Preparation of different products
3. Establishment of commercial Processing Units

Practical:

1. Collection and Preparation of Cashew Apple for Processing
2. Methods of Preparation of different Cashew Apple Products

60. ECONOMIC CASHEW CULTIVATION WITH EMPHASIS ON ORGANIC PRODUCTION

Duration	:	1 Day
Dates	:	December 06 to January 2007
Venue	:	CRS, Madakkathara
No. of Batch	:	1
Trainees	:	Cashew Farmers
No. of Trainees/Batch	:	15
Course Director	:	Dr. Jose Mathew, Associate Professor & Head

Syllabus

Theory:

1. Emerging trends in crop management tactics in cashew
2. Effective utilization of high yielding and improved varieties in cashew
3. Economic and safe crop protection strategies in cashew

Practical:

1. Crop Management and Varieties in Kerala – Hands on training in field
2. Practical aspects of managing TMB and CSRB

61. HOME SCALE PROCESSING OF FRUITS AND VEGETABLES

Duration	:	4 Days
Dates	:	In anticipation
Venue	:	COA, Padannakkad
No. of Batch	:	4
Trainees	:	W
No. of Trainees/Batch	:	10
Course Director	:	Dr. P. Anitha, Assistant Professor

Syllabus

Importance of fruits and vegetable processing – Products prepared from fruits and vegetables – Principles and methods of preservation – fermented and unfermented beverages – Jam, Jelly, Pickles, Chutneys and Sauces – F.P.O specifications for fruits and vegetable products. Preparation of squash, crush, fruit syrups, jams, jelly, tomato sauce, tomato chutney, pickles, preserves and fruit cheese.

62. SKILL DEVELOPMENT IN HANDLING OF NEWER AGRICULTURAL CHEMICALS, FERTILIZERS AND BIOLOGICAL PRODUCTS

Duration	:	2 Days
Dates	:	2 nd and 3 rd Week of November 2006
Venue	:	COA, Padannakkad
No. of Batch	:	2
Trainees	:	E
No. of Trainees/Batch	:	10
Course Director	:	Dr. K. M. Sreekumar, Assistant Professor

Syllabus

Classification of Pesticides, newer chemicals – mode of action – environmental effects – role in pest management – use of growth regulators and hormones – use of Trichoderma, Pseudomonas – Bio fertilizers – Fertilizers – Fungicides – Bactericides.

63. COCONUT HYBRID PRODUCTION

Duration	:	7 Days
Dates	:	November 2006
Venue	:	COA, Padannakkad
No. of Batch	:	1
Trainees	:	UY/W/E
No. of Trainees/Batch	:	20
Course Director	:	Dr. Minimol. J. S., Assistant Professor

Syllabus

Introduction – Different breeding methods employed – Maternal Selection – Exploitation of heterosis – Different types of hybrids – Floral biology and pollination – Mother palm selection and selection of pollen parent – Pollen grain collection and methods to preserve pollen grain – Collection and storage of nuts – Field planting of nuts and criteria for selection of seedlings – Field planting of hybrid seedlings.

64. TECHNIQUES IN PLANT TISSUE CULTURE

Duration	:	5 Days
Dates	:	September 06, December 06
Venue	:	COA, Padannakkad
No. of Batch	:	2
Trainees	:	UY/E
No. of Trainees/Batch	:	10
Course Director	:	Dr. T. Pradeepkumar, Assistant Professor (SS)

Syllabus

Establishment of tissue culture laboratory equipment, machineries, tools and implements involved in tissue culture work – Sterilization of equipment and other tools – Tissue culture media – preparation, sterilization and storage – Collection handling and treatment of explant – Inoculation and incubation of explant – Tissue culture of Banana – Tissue culture of Orchids – Tissue culture of Vanilla – *Ex vitro* establishment of tissue culture plantlets.

65. SPAWN PRODUCTION AND CULTIVATION OF EDIBLE MUSHROOMS

Duration	:	3 Days
Dates	:	September 06, December 06
Venue	:	COA, Padannakkad
No. of Batch	:	2
Trainees	:	UY/W/E
No. of Trainees/Batch	:	20
Course Director	:	Dr. M. Govindan, Associate Professor

Syllabus

Introduction – different types of mushrooms – edible, poisonous, hallucinogenic and medicinal mushrooms – Mushroom spawn, pure culture, mother spawn and bed spawn preparation, setting up of a mushroom spawn production laboratory- Different types of edible mushrooms – Cultivation of oyster mushroom and milky mushroom, substrate preparation, Preparation of mushroom house, spawn running, harvesting, processing – Nutritive value of mushrooms, preparation of mushroom recipes – Pest and Disease problems in mushrooms – Visit to a mushroom farm.

66. ENTREPRENEURSHIP DEVELOPMENT IN DAIRY PROCESSING INDUSTRY

Duration	:	3 days
Dates	:	January 2007
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	Prospective Entrepreneurs
No. of Trainees/Batch	:	10
Course Director	:	Sri. P. Sudheer Babu, Assistant Professor

Syllabus

Market Milk Industry in India – distinctive features – Reception and processing of milk practices followed such as HTST pasteurisation, UHT processing etc., - Indigenous milk products – product descriptions and methods of manufacture – Ice cream and frozen deserts – Technological aspects of ice cream manufacture – Other major dairy products – Cheese, Condensed milk, Dried milk etc. – Manufacturing techniques – Project preparation – Scheduling of information for the installation of a dairy plant – Marketing Management – Demand estimation and analysis – forecasting of market potentials.

67. PREPARATIONS OF INDIGENOUS MILK PRODUCTS

Duration	:	2 days
Dates	:	January 2007
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	Prospective Entrepreneurs and Candidates deputed by Voluntary Organizations/NGOs
No. of Trainees/Batch	:	10
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – cleaning and sanitation – Familiarization of various milk testing techniques and quality control of milk and milk products – Familiarization of various milk processing operations - Preparation of various milk products such as khoa, curd, lassi, sambharam, paneer, Ice cream, rassogolla, gulabjamun, etc. – Selection of equipment for mini milk product manufacturing units – preparation of project report.

68. PREPARATIONS AND MARKETING OF MILK PRODUCTS

Duration	:	6 days
Dates	:	November 2006
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	Prospective Entrepreneurs and Candidates deputed by Voluntary Organizations/NGOs
No. of Trainees/Batch	:	10
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – cleaning and sanitation – Personal hygiene – Familiarization of various milk testing techniques– Familiarization of various milk processing operations such as Pasteurization, cream separation, homogenisation etc., and equipment related to this - Preparation of various milk products such as khoa, curd, lassi, sambharam, paneer, Ice cream, rassogolla, gulabjamun, Sreekhand etc. – Selection of equipment for mini milk product manufacturing units – Economic function of dairy units – Planning and managing a mini milk product manufacturing unit - preparation of project report.

69. PREPARATIONS AND QUALITY CONTROL OF INDIGENOUS MILK PRODUCTS

Duration	:	4 days
Dates	:	December 2006
Venue	:	KAU Dairy Plant, Mannuthy
No. of Batch	:	1
Trainees	:	Prospective Entrepreneurs and Candidates deputed by Voluntary Organizations/NGOs
No. of Trainees/Batch	:	10
Course Director	:	Dr. P. I. Geevarghese, Associate Professor & Head

Syllabus

Introduction – Importance of milk and milk products – cleaning and sanitation – Personal hygiene – Familiarization of various milk testing techniques and quality control of milk and milk products -Familiarization of various milk processing operations - Preparation of various milk products such as khoa, curd, lassi, sambharam, paneer, Ice cream, rassogolla, gulabjamun etc. – Selection of equipment for mini milk product manufacturing units – Packaging of milk and various milk products – Selection of equipment for mini milk product manufacturing unit - preparation of project report.

70. BEE KEEPING WITH INDIAN BEES

Duration	:	2 WD
Dates	:	August, September, October & November 2006
Venue	:	College of Agriculture, Vellayani.
No. of Batch	:	4
Trainees	:	F
No. of Trainees/Batch	:	20
Course Director	:	Dr. S. Devanesan, Associate Professor

Syllabus

Theory

Introduction to beekeeping, Scope of beekeeping with resistant strain of Indian bees, Beehives and appliances, Honey extraction, processing and marketing, advanced scientific management of India bees, Bee diseases and their control, pests and their management.

Practical

Acquaintance with Indian bees, Handling, management during dearth period, brood rearing season and honey flow period. Artificial feeding of bee colonies, division of colonies, uniting colonies, queen rearing and disease and pest management.

71. VEGETABLE CULTIVATION ON HOUSE TERRACE IN URBAN AREAS

Duration	:	4 WD
Dates	:	August 2006 and October 2006
Venue	:	House of one trainee in urban area in Thiruvananthapuram
No. of Batch	:	2
Trainees	:	W
No. of Trainees/Batch	:	15
Course Director	:	Dr. V. B. Padmanabhan, Associate Professor

Syllabus

Potentialities of vegetable cultivation on house terrace, preparation of potting mixtures, filling the plastic sacks and lay out of vegetable garden on house terrace. Varieties and Seeds of different vegetables for cultivation on house terrace, preparation of nursery raising seedlings, transplanting and stages of transplanting. Plant nutrients, manures and manuring, role of organic manures in vegetable cultivation on house terrace, vermin-composting, azolla cultivation, poultry rearing and quail rearing on house terrace. Irrigation, low cost methods of irrigation on house terrace – Pests and diseases of vegetables, plant protection management, preparation and use of organic pesticides.

72. PROFITABLE BANANA CULTIVATION

Duration	:	2 WD
Dates	:	September 2006 - October 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	Farmers and Housewives
No. of Trainees/Batch	:	20
Course Director	:	Dr. Sheela. K. R., Associate Professor Dr. Geethakumari. V. L., Associate Professor

Syllabus

Theory:

Banana Cultivation – Scope and economics – Use of Tissue Culture Plants – Agro Techniques for Banana – Double Sucker planting – intercropping practices – plant protection practices – organic farming in banana

Practical:

Familiarisation of cultivation practices for tissue culture banana and double sucker planted banana – intercrops suitable – intercropping practices – practical aspects on pest and disease management – organic farming in banana.

73. MIXED FARMING AND FARMING SYSTEMS

Duration	:	2 WD
Dates	:	October 2006 - November 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	Dairy Farmers and Housewives
No. of Trainees/Batch	:	20
Course Director	:	Dr. Elizabeth K. Syriac, Associate Professor Dr. R. Pushpakumari, Associate Professor

Syllabus

Theory:

Importance and Scope of mixed farming and other important farming systems like Integrated Farming System – Suitability of homesteads/Coconut gardens for intercropping, mixed cropping, multistoried cropping etc., - Mixed farming with emphasis on fodder production, biogas production – Integrated Farming System models suited to Southern Kerala – Recycling of crop residues through composting – vermicomposting etc.

Practical

Visit to a model mixed farm/Integrated farm unit for familiarization of various enterprises – their proper integration and scientific management to suit the farmer's requirements and resource availability – practical utilization of crop/livestock waste for composting and vermicomposting.

74. UTILIZATION OF WEEDS AS POTENTIAL MEDICINAL PLANTS

Duration	:	2 WD
Dates	:	October 2006 - November 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	20
Course Director	:	Sri. D. Sajith Babu, Assistant Professor Dr. K. Prathapan, Assistant Professor (SS)

Syllabus

Theory

Importance and scope of using weeds as medicinal plants – Identification, Collection, Preservation and Value addition of weeds to suit market demand – Sites for marketing

Practical

Visit to different ecosystems for the on field exposure of medicinal herbs – Identification, Collection, Preservation and Value addition of weeds

75. PRODUCTION AND UTILIZATION OF TUBER CROPS

Duration	:	2 WD
Dates	:	October 2006 - November 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	UY and Farm Women
No. of Trainees/Batch	:	20
Course Director	:	Dr. O. Kumari Swadija, Associate Professor Dr. V. Jayakrishna Kumar, Assistant Professor (SS)

Syllabus

Theory:

Importance and scope of using Tuber Crops – Identification, Cultivation, Preservation and Value addition of tuber crops to suit market demand

Practical:

Field exposure to different tuber crops

76. PRODUCTION AND UTILIZATION OF AZOLLA

Duration	:	1 WD
Dates	:	October 2006 - November 2006
Venue	:	COA, Vellayani
No. of Batch	:	2
Trainees	:	UY and Farm Women
No. of Trainees/Batch	:	15
Course Director	:	Dr. O. Kumari Swadija, Associate Professor Dr. V. Jayakrishna Kumar, Assistant Professor (SS)

Syllabus

Theory

Importance and scope of Azolla Cultivation – Cultivation Practices in the Field and on terrace

Practical

Establishment of Azolla tanks in the field and on terrace

77. ORGANIC VEGETABLE PRODUCTION

Duration	:	2 WD
Dates	:	September 2006 - October 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	Farmers and Housewives
No. of Trainees/Batch	:	20
Course Director	:	Dr. Annamma George, Associate Professor Dr. Sansamma George, Associate Professor

Syllabus

Theory:

Importance of Organic farming – importance vegetables suited for cultivation in Kerala – different organic farming practices for vegetable cultivation – organic manures – preparation of composts – recycling of home waste – pest and disease management in vegetable through bio pesticides – use of bio fertilizers in vegetables – organic farming and quality of vegetables

Practicals:

Method of preparation of vermicompost, vermi-wash, coir pith compost cultivation practices for important vegetable crops – preparation and use of bio pesticides.

78. VERMITECHNOLOGY A PROFITABLE AGRIBUSINESS

Duration	:	2 WD
Dates	:	December 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	F/W/UY
No. of Trainees/Batch	:	20
Course Director	:	Dr. K. Ushakumari, Asst. Professor (SS) Dr. Usha Mathew, Asst. Professor (SS)

Syllabus

Earthworms – Introduction – different types – mass multiplication of earthworms – Vermicomposting of domestic solid waste in housing colonies – flats – homesteads – Field vermicomposting techniques – Vermicomposting of agro – industrial wastes and market wastes – Vermicomposting insitu in crop production – Production of enriched vermicompost – Application of vermicompost to field crops – Model project for vermicomposting and economics of vermicompost production – preparation of vermiwash – different methods – properties and applications

79. SOIL HEALTH MANAGEMENT

Duration	:	2 WD
Dates	:	December 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	F
No. of Trainees/Batch	:	20
Course Director	:	Dr. C. R. Sudharmaidevi, Associate Professor Dr. R. S. Shehana, Associate Professor

Syllabus

Soil as a medium for plant growth – components of soil – Soil texture and its importance – soil structure – different types of structure – importance of structure – physical, chemical and biological properties of soil – soil organic matter and its relation to soil health – Composting – Vermicomposting – indicators soil health – biological activity – store house of nutrients – Soil P_H and its importance – liming availability of nutrients in soil – factors of nutrients availability – soil fertility – methods for improving soil fertility – soil conservation – mulching – moisture conservation – pesticide residues in soil bio pesticides – pollution problems – Importance of soil testing – Integrated Nutrient Management and its importance for sustaining productivity.

80. SOIL TESTING AND FERTILIZER RECOMMENDATION

Duration	:	2 WD
Date	:	November 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	F
No. of Trainees/Batch	:	20
Course Director	:	Dr. Usha P. B., Associate Professor Dr. Sumam Susan Varghese, Associate Professor

Syllabus

Need for soil sampling – How to collect soil samples – Processing – labelling – packing – soil sample information sheet to be filled – Details on soil parameters to be tested – familiarization with soil test fertilizer recommendation report – Reading soil fertility map – how to and when to apply manures, fertilizers and lime – Integrated Nutrient Management system – Organic Farming – Vermicomposting – fertilizer and manure application for major crops of Kerala.

81. ORGANIC FARMING FOR SOIL HEALTH AND FOOD QUALITY

Duration	:	2 WD
Date	:	December 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	F/W/UY
No. of Trainees/Batch	:	20
Course Director	:	Dr. K. Ushakumari, Asst. Professor (SS) Dr. Usha Mathew, Asst. Professor (SS)

Syllabus

Organic farming – concepts – principles and practices – relevance of practising organic farming in the context of soil health and food quality – Different components of organic farming – Different organic nutrient sources – Bio pesticides – Bio fertilizers – Liquid organic manures in organic farming – Quality control of Organic Manures – Need for organic certification – Certifying agencies and standards

82. COMPOSTING TECHNIQUES

Duration	:	2 WD
Date	:	December 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	F/W/UY
No. of Trainees/Batch	:	20
Course Director	:	Dr. Sumam Susan Varghese, Associate Professor Dr. K. C. Manorama Thampatti, Asst. Professor (SS)

Syllabus

Composting – Necessity and Scope – Different wastes – crop residues – animal wastes – house wastes – market wastes – street garbage – agro industrial wastes – their characterisation and availability – different techniques – ordinary composting – vermicomposting – coir pith composting – reinforced composts – compost accelerators – bio activators – compost maturity – quality indices – standardisation techniques – suitability to different soils and crops – Establishment of commercial units – production marketing.

83. EXPORT ORIENTED FRUIT AND VEGETABLE CULTIVATION

Duration	:	3 WD
Dates	:	12 th to 14 th June 2006
Venue	:	COA, Vellayani
No. of Batch	:	1
Trainees	:	F
No. of Trainees/Batch	:	30
Course Director	:	Dr. G. Sobhana, Associate Professor

Syllabus

Constraints in production, processing and marketing of banana, vegetables and pineapple – Importance of soil, leaf and water analysis in production technology – selection of quality seeds/planting materials – IPM and INM in fruit and vegetable production – optimum utilization of irrigation water – vegetable production in poly house – post harvest handling of fruits and vegetables for exporting

84. CULTIVATION TECHNOLOGY OF TROPICAL MUSHROOMS

Duration	:	2 WD
Dates	:	September and October 2006
Venue	:	College of Agriculture, Vellayani.
No. of Batch	:	4
Trainees	:	UY
No. of Trainees/Batch	:	30
Course Director	:	Dr. M. Suharban, Associate Professor

Syllabus

Isolation and spawn production
Cultivation of mushrooms
Mushroom house design
Pests and diseases of mushrooms and their management
Nutritive value, processing and preservation techniques

85. HERBAL GARDENS AND HOME REMEDIES

Duration	:	1 WD
Date	:	October 2006
Venue	:	College of Agriculture, Vellayani.
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	30
Course Director	:	Dr. A.S. Anilkumar, Assistant Professor

Syllabus

Scope and importance of domestication of medicinal plants – Visit to herbal garden and identification of medicinal plants – Important uses of medicinal plants – Conservation of medicinal plants – Home remedies – Establishment of homestead herbal gardens.

86. VERMICOMPOST AND VERMIWASH

Duration	:	2 WD
Date	:	September 2006
Venue	:	College of Agriculture, Vellayani.
No. of Batch	:	1
Trainees	:	F, E, UY
No. of Trainees/Batch	:	30
Course Director	:	Dr. A.S. Anilkumar, Assistant Professor

Syllabus

Theory

Basic features of organic agriculture

In situ input generation for organic agriculture

Importance of vermin-compost and vermi-wash in organic agriculture – Establishment of vermicomposting units – Selection of site – Construction of sheds etc. – Earthworm – species, biology and efficiency – Collection of farm wastes – Preparation of farm waste – Predigestion – Filling the trenches – Introduction of earthworms – care and management – Drying, sieving and packing – Vermi-wash production – Vermiculturing – Economics of vermicompost production – Organic inputs for cropping systems

Practical

Crop residue management – Vermicomposting, vermiculturing, Vermiwash and enrichment of composts Azolla cultivation – Bio manure production – Organic certification

87. PRODUCTION, PROCESSING AND MARKETING OF MEDICINAL PLANTS

Duration	:	2 WD
Date	:	September 2006
Venue	:	College of Agriculture, Vellayani.
No. of Batch	:	1
Trainees	:	UY
No. of Trainees/Batch	:	30
Course Director	:	Dr. A.S. Anilkumar, Assistant Professor

Syllabus

Scope and importance of medicinal plants – Introduction of medicinal plants into the existing cropping systems – Identification and uses of medicinal plants – Agro techniques for: - Stevia, Long pepper – Koduveli – Chittaratha – Nagadanthi – Kacholam – Kasthurivenda – Adhathoda – Brahmi – Chakkarakolli – Neelaamari – Asparagus, Adapathiyam etc.

Infrastructure facilities for processing – marketing of medicinal plants – Economics of mediculture – Export of nutraceuticals – Special problems.

88. CULTIVATION AND MANAGEMENT OF ANTHURIUM

Duration	:	4 WD
Dates	:	September, December 2006 & February 2007
Venue	:	COA, Vellayani
No. of Batch	:	3
Trainees	:	UY/W/E
No. of Trainees/Batch	:	20
Course Director	:	Dr. P. Mayadevi, Associate Professor

Syllabus

Theory

Introduction of the Crop – Origin, distribution of species, habitat, and classification.

Varieties and general characters, floral morphology

Cultivation practices – potting and potting materials, spacing, shading, watering, fertilizer application and general maintenance.

Methods of vegetative reproduction – Topping, discung, sucker splitting etc.,

Hybridisation and hybrid production

Harvesting and post harvest handling and marketing.

Pest Management

Disease Management

Meristem culture for micro propagation

Financing – Bank loan, Project preparation & Loan repayments etc.,

Practical

Varieties, cultivation practices i.e. potting, repotting, watering, shading, fertilizer application, Vegetative propagation, Top cutting, Discing, sucker splitting and plant protection. Hybridisation and Hybrid production. Tissue culture. Farm visit to observe method of commercial green house cultivation.

89. TRAINING ON ADVANCES IN BREEDING MANAGEMENT OF PIGS

Duration	:	1 WD
Dates	:	November 2006 & February 2007
Venue	:	COVAS, Pookot
No. of Batch	:	2
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	30
Course Director	:	Dr. Usha. A. P., Associate Professor

Syllabus

Theory

Pigs and their breeds – Synthetic breeds – Breeding management of pigs – Reproduction – feeding – breeding – diseases

Practical

Scientific management practices in pigs.

90. TRAINING ON BROILER RABBIT KEEPING

Duration	:	1 WD
Dates	:	Nov, Dec 2006, Jan & Feb 2007
Venue	:	COVAS, Pookot
No. of Batch	:	4
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	40
Course Director	:	Dr. K. Anilkumar, Associate Professor

Syllabus

Theory

Different types of rabbits and their breeds – advances in management of rabbits – feeding – reproduction – breeding – diseases etc.

Practical

Management practices of broiler rabbitry.

91. TRAINING ON ADVANCES IN BREEDING MANAGEMENT OF GOATS

Duration	:	1 WD
Dates	:	Dec 2006 & Jan 2007
Venue	:	COVAS, Pookot
No. of Batch	:	2
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	40
Course Director	:	Dr. Radhika. G., Assistant Professor

Syllabus

Theory

Goats and their breeds – Breeding management of goats – reproduction – feeding – breeding – diseases – milk and meat products

Practical

Scientific management practices

92. TRAINING ON BROILER RABBIT KEEPING

Duration	:	2 WD
Dates	:	Nov 2006 & Jan 2007
Venue	:	COVAS, Pookot
No. of Batch	:	2
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	30
Course Director	:	Dr. C. N. Dinesh, Assistant Professor

Syllabus

Theory

Advantages and disadvantages of broiler rabbit keeping – Rabbits and their breeds – Management of rabbits – Feeding – reproduction – breeding – diseases

Practical

Handling of rabbits – Sexing – Management practices – Feeding – Identification of common problems.

93. PRODUCTION OF PAPER BAGS/PALA PLATES/PANTANUS LEAF FILES FROM UNUTILIZED NATURAL PRODUCTS

Duration	:	10 WD
Dates	:	Nov., Dec., 2006, Jan., & Feb. 2007
Venue	:	Communication Centre, Mannuthy
No. of Batch	:	6
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	30
Course Director	:	Dr. S. Estelitta, Associate Professor

Syllabus

Introduction to eco-friendly approach – Plastic hazards/its pollution – Production of paper bags, paper covers, office files, medicine covers, Pala plates, Pantanus leaf files, Teak leaf plates – Seeking employment – marketing aspects – financial assistance etc.

94. TERRACE CULTIVATION OF VEGETABLES IN URBAN AREAS

Duration	:	3 WD
Dates	:	Nov., Dec., 2006, & Jan. 2007
Venue	:	Communication Centre, Mannuthy
No. of Batch	:	5
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	25
Course Director	:	Dr. S. Estelitta, Associate Professor

Syllabus

Layout of vegetable garden – Preparation of potting mixtures, specific for terrace – Application of organic manures – organic pesticides – its preparation, etc.

95. EXPORT ORIENTATION IN PRODUCTION AND MARKETING OF VEGETABLES AND FLORICULTURE

Duration	:	5 WD
Dates	:	Aug., Nov., 2006, & Feb. 2007
Venue	:	Communication Centre, Mannuthy
No. of Batch	:	3
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	25
Course Director	:	Dr. S. Estelitta, Associate Professor

Syllabus

Current scenario of vegetables, floriculture in Kerala – Area, production and export of vegetables, floriculture – harvest indices of vegetables for various products, cleanliness in handling, storage – processing – grading – packaging – product diversification – quality maintenance – production – processing and certification of organic vegetables – marketing and export – future perspectives.

96. FLOWER ARRANGEMENT AND BOUQUET MAKING

Duration	:	3 WD
Dates	:	August, November & December 2006
Venue	:	Communication Centre, Mannuthy
No. of Batch	:	3
Trainees	:	UY/W/F/E
No. of Trainees/Batch	:	20
Course Director	:	Dr. S. Estelitta, Associate Professor

Syllabus

Flower arrangement – different types with different flowers – its scope – preservation methods – packing methods etc.

97. BIO-INTENSIVE INTEGRATED PEST MANAGEMENT IN RICE

Duration	:	5 WD
Dates	:	November & December 2006
Venue	:	Communication Centre, Mannuthy
No. of Batch	:	2
Trainees	:	F/E
No. of Trainees/Batch	:	15
Course Director	:	Dr. S. Estelitta, Associate Professor

Syllabus

Introduction to BIPM, its objectives – Methods – Host plant resistance, cultural methods, burning of debris, water management – mechanical and physical measures – Regulating measures – Chemical measures – Biological measures – Success against weeds, etc.

98. PRODUCTION AND MARKETING OF ORGANIC PESTICIDES

Duration	:	5 WD
Dates	:	January, February 2007
Venue	:	Communication Centre, Mannuthy
No. of Batch	:	3
Trainees	:	UY/W
No. of Trainees/Batch	:	20
Course Director	:	Dr. S. Estelitta, Associate Professor

Syllabus

Organic pesticides – Preparation of Tobacco decoction – Neem products viz., Neem kernel suspension, Neem garlic emulsion – Garlic emulsion – Preparation of Bordeaux mixture – Preparation of traps – Fruit traps, Tulsi traps, Fish trap etc. – Marketing aspects.

99. DAIRY CATTLE MANAGEMENT

Duration	:	2 WD
Dates	:	16, 17 & 23, 24 August, 2006
Venue	:	College of Vety. & AS, Mannuthy
No. of Batch	:	2
Trainees	:	E
No. of Trainees/Batch	:	10
Course Director	:	Dr. Aravinda Ghosh, Associate Professor

Syllabus

Dairy Cattle Management – Major problem in Dairying – Farm Management – Health Cover – Artificial Insemination – First Aid – Major diseases in cattle – Interaction with Farmers

100. CULTIVATION OF TROPICAL MUSHROOMS

Duration	:	2 WD
Dates	:	September, October 2006
Venue	:	C.S.R.C., Karamana
No. of Batch	:	4
Trainees	:	UY
No. of Trainees/Batch	:	30
Course Director	:	Dr. M. Vijayan, Associate Professor

Syllabus

Isolation and spawn production, Cultivation of mushrooms, Mushroom house design, Pests and disease of mushrooms and their management, Nutritive value, Processing and preservation techniques.

101. VERMICOMPOST AND VERMIWASH

Duration	:	2 WD
Date	:	September 2006
Venue	:	C.S.R.C., Karamana
No. of Batch	:	4
Trainees	:	F, E, UY
No. of Trainees/Batch	:	30
Course Director	:	Dr. M. Vijayan, Associate Professor

Syllabus

Theory:

Basic features of organic agriculture *In situ* input generation for organic agriculture, Importance of vermicompost and vermiwash in organic agriculture – Establishment of vermicomposting units – Selection of site – Construction of sheds etc. - Earthworm – Species, biology and efficiency – Collection of farm wastes – Preparation of farm waste – Predigestion – Filling the trenches – Introduction of earthworms – Care and management – Drying, sieving and packing – Vermiwash production – Vermiculturing – Economics of vermicompost production, Organic inputs for cropping systems.

Practical:

Crop residue management, Vermicomposting, vermiculturing, vermiwash production and enrichment of composts, Azolla cultivation, Biomanure production, Organic certification.

102. MUSHROOM PRODUCTION TECHNOLOGY

Duration	:	3 WD
Dates	:	October, November 2006
Venue	:	C.S.R.C., Karamana
No. of Batch	:	2
Trainees	:	UY/W in rural areas of Kannur & Kasaragod
No. of Trainees/Batch	:	15
Course Director	:	Dr. Madhu Subramanian, Assistant Professor

Syllabus

Relevance of mushrooms to nutritional and economics needs of society, Important edible mushrooms, their botany and life cycle, Spawn production, Mushroom Production, Infrastructure required for mushroom production and economics of mushroom production, Pest and disease management, Coir pith compost preparation using mushrooms.

103. PRODUCTION AND MARKETING OF HERBAL PLANTS

Duration	:	3 WD
Dates	:	November, December 2006
Venue	:	R.A.R.S., Pilicode
No. of Batch	:	1
Trainees	:	UYW/SHG members under Kudumbasree
No. of Trainees/Batch	:	20
Course Director	:	Dr. M. P. Giridharan,

Syllabus

Identification of medicinal plants and their use, Propagation and multiplication, nursery management Cultivation practices, Harvesting, Curing and Storage, Commercial importances and market demands of herbs and herbal products, Institutional linkage in promotion of cultivation herbs.

104. HOME SCALE CASHEWNUT PROCESSING AND MARKETING STRATEGIES

Duration	:	3 WD
Dates	:	December 2006 to March 2007
Venue	:	R.A.R.S., Pilicode
No. of Batch	:	6
Trainees	:	Members of Kudumbasree & SHGs of Kannur & Kasaragod
No. of Trainees/Batch	:	15
Course Director	:	Dr. B. Jayaprakash Naik, Associate Professor

Syllabus

Importance of cashew nut production, High yielding varieties and their yield, Food values of kernel and uses, Importance of Kernel, CSNL, Testa, Shell, etc, Nut quality for processing, (Drum roasting, Stam method, drying, peeling, etc.), Grading, packing and marketing, Quality standards or local and international markets.

105. ORGANIC CASHEW PRODUCTION TECHNOLOGY

Duration	:	3 WD
Dates	:	August, September, October 2006
Venue	:	R.A.R.S., Pilicode
No. of Batch	:	3
Trainees	:	F
No. of Trainees/Batch	:	20
Course Director	:	Dr. B. Jayaprakash Naik, Associate Professor

Syllabus

Importance of organic farming, Methods of organic arming, Farmers practice of management of cashew, Certification and certifying agencies, Importance of cashew nut production, High yielding varieties and their yield, Organic management techniques in cashew, Propagation methods – Vegetative – Sot wood grafting, Pruning and training, Bio-pesticides in pest and disease control, Collection of seed nuts and maintenance quality of nuts for the industry

106. ORNAMENTAL FISH CULTURE

Duration	:	5 WD
Date	:	First week of October 2006
Venue	:	College of Fisheries, Panangad
No. of Batch	:	1
Trainees	:	F
No. of Trainees/Batch	:	20
Course Director	:	K. Dinesh, Assistant Professor

Syllabus

Present status of ornamental fish culture in India – Ornamental fish species – Aquarium tank construction and aquarium accessories – Aquarium plants and their role – Water quality and health management in aquarium – Aquasrium setting and maintenance – Brood stock management of ornamental fishes – Breeding of ornamental fishes – Live bearers, barbs, tetras, gold fish, koi carp, angel fish, gouramies, indigenous fishes etc. – Live feed culture – Artificial feeds for aquarium fishes – rearing of ornamental fish seed – Diseases in ornamental fishes – Ornamental fish trade and establishment of a commercial ornamental fish culture unit – Modern concepts in aquarium management – Introduction to marine aquaria.

107. ORNAMENTAL FISH CULTURE

Duration	:	5 WD
Date	:	Last week of October 2006
Venue	:	College of Fisheries, Panangad
No. of Batch	:	1
Trainees	:	UY (ST)
No. of Trainees/Batch	:	10
Course Director	:	K. Dinesh, Assistant Professor

Syllabus

Present status of ornamental fish culture in India – Ornamental fish species – Aquarium tank construction and aquarium accessories – Aquarium plants and their role – Water quality and health management in aquarium – Aquasrium setting and maintenance – Brood stock management of ornamental fishes – Breeding of ornamental fishes – Live bearers, barbs, tetras, gold fish, koi carp, angel fish, gouramies, indigenous fishes etc. – Live feed culture – Artificial feeds for aquarium fishes – rearing of ornamental fish seed – Diseases in ornamental fishes – Ornamental fish trade and establishment of a commercial ornamental fish culture unit – Modern concepts in aquarium management – Introduction to marine aquaria