

National Horticulture Mission

Human Resource Development
Special Project on Training Programmes
for Farmers in Maharashtra

Vidarbha Marathawada
Western Maharashtra Konkan

Prepared by Special Task Group

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For

Maharashtra State Horticulture and Medicinal Plants Board

Government of Maharashtra,

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Acknowledgment

National Horticulture Mission Programme has unique importance for horticulture development in Marathwada. Lack of adequate irrigation facilities and paucity of quality planting material has been the main cause of decline in horticultural crops in Vidarbha. However NHM has helped in boosting the adoption of improved cultivation practices for Mandarin Oranges, Sweet Orange, Mango, Banana, Grape, Custard apple, Aonla, Sapota & other fruit crops, vegetables and flower crops in recent years with a huge financial provision of Rs. 3845 Lakhs. Still there is a long way to go in educating the potential farmers about improved & high-tech Horticulture so that it becomes truly remunerative. The proportion of small and marginal farmers and dependent on rain fed farming is very large. Changing the mindset of these farmers to opt for horticulture is important task before the extension functionary. Hence for empowering farmers through change in knowledge, skill and attitude towards NHM programmes is considered necessary. This document is an outcome of this need to help Marathwada farmers for horticultural development.

We are happy to submit the need based crop wise training plans & designs for 6 districts of Marathwada namely Aurangabad, Beed, Jalna, Latur, Nanded and Parbhani with the document of Farmer's Field School on Sweet Orange for Marathwada farmers. We feel grateful to Shri. Nanasaheb Patil, Principal Secretary (Agriculture) MS for giving this opportunity to us. His inspiration and ideas helped us tremendously in preparing these need based training programmes. We express our heartfull thanks to Shri. B.V. Gopal Reddy, MD, MSH & MP Board, Pune for his regular guidance, persuasion, constructive criticism and financial assistance for this assignment. We are thankful for important suggestions & comments given by Dr. Krishna Lavekar, Commissioner of Agriculture M.S. which were very useful in preparing these training plans. The help rendered in assessment of training needs & subsequent planning by all JDAs, DSAOs, SDAOs, TAOs, progressive farmers, NGOs and SAU & NRC scientists is hereby acknowledged. Hope their wholehearted co-operation and involvement in execution of proposed training programmes will be showing a new way to Marathwada farmers to adopt horticulture as a remunerative enterprise, with the support of NHM.

Dr. P.O. Ingle ■ V. S. Kolekar ■ Dr. P.S. Joshi
Special Task Group

Preamble

A comprehensive programme of human Resource Development was needed for the motivation of farmers for accelerating adoption of various technologies being promoted by the National Horticulture Mission. In order to bring proficiency in beneficiary farmers and to insure in them, desirable change in knowledge skill and Attitude for growing Horticulture Crops, training programme have been planned & designed by the Task Group specially constituted for this purpose.

The district-wise and crop-wise training programme have been planned for 29 NHM districts in Maharashtra. The fruit crops covered are Orange, Mango, Kagzi lime, Sweet Orange, Cashew, Pomegranate, Sapota, Grapes, Guava, Aonla, Custard Apple, Banana and Strawberry. Flowers and vegetable seed production has also been covered. These training programmes also cover the special activities of NHM namely Pack house, Protected Cultivation in green and Poly-houses and community tanks.

District-wise situation Specific Training Need Assessment (TNA) was done for each crop. For this purpose SRFP reports of all districts were reviewed initially. However, for confirmation of training needs discussion meetings with officers of Dept. of Agriculture Progressive farmers, farmers' representatives, and scientist were held.

On the basis of training needs specific objectives of each training programmes have been decided. The priority of each training was decided on the basis of its importance & urgency. Course curriculum and plan of work was then prepared. Care has been taken to include agenda practical demonstrations, hands on exercises to ensure change in undertaking and skill of the trainees. To ensure effectiveness of training programmes duration ranging from 1 to 3 days depending upon the course content of respective programme has been fixed.

For execution of these training programmes, it is expected that Master Trainers from the department of Agriculture will be useful however a comprehensive list of SMS & Scientists resource persons from SAUs has been appended.

In addition to these training programmes looking to the importance & hectarage of major fruit crop Farmer's Field Schools have been designed separately. The fruit crops selected for this purpose are Orange, Pomegranate, Mango and Sweet Orange. FFS is a season long (one year) on field participatory training programme. This comprehensive multistage & yearlong training programme will therefore be useful to attain the NHM objectives in future.

In Marathwada region major fruit crops are Mango, Sweet orange, Banana, Pomegranate, Grapes, Sapota and Aonla. In addition to these fruit crops area under Vegetables and Horticulture is also remarkable. Hence considering the needs of NHM beneficiaries in this regard 170 training courses have been planned for six district of Marathwada. These also include training courses about special activities namely Community tanks, Green house and Pack house technologies. A sample copy of calendar of work is appended at appendix I which can be used by course co-ordinator as a guideline for preparing the calendar of work for a respective course

The individual farmers, Farmers Interest Groups, SHGs, NGOs & other beneficiaries should come forward to take advantage of this programme.

General Operational Guidelines for Execution of the Training Programme

1. A separate calendar of work for one, two and three days as shown in a sample copy appended herewith at Appendix I be prepared.
2. 70% time be allotted to practical, field visits, demonstration and hand on exercises, and 30% time for theory and other work. While preparing calendar of work this should be strictly followed.
3. Reading material & calendar of work should be distributed to the trainees at the time of their registration for training.
4. Flexibility should be only towards unforeseen situations and exigencies.
5. Pre and post evaluation of trainees about knowledge, skill & attitude should be done without fail. The schedules for the same are appended herewith at Appendix II.
6. Suggestive list of some resource persons is attached herewith however before each training confirmation about availability of resource person be done.
7. Arrangement of training resources be made in advance. e.g. Demonstration material, Practical kits, inputs etc.
8. All concerned DSAOs are to prepare estimates of trainings and to select the trainees from the beneficiaries of NHM.
9. Monitoring of ongoing trainings shall be done by independent officer nominated by the MSH & MP Board for each district. Provision of third party monitoring has to be made by the Board.
10. Each Batch of trainees should be of 30 NHM beneficiaries related to a particular technology.

**Proposed
Farmers Training Programmes
Under NHM
For
Marathwada Region**

AURANGABAD

A. Mango

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	AURMT-01	Plant Protection in Mango	One	I
2	AURMT-02	Integrated Nutrient Management in Mango	One	II
3	AURMT-03	Canopy Management in Mango	One	III
4	AURMT-04	Pre and Post harvest Management of fruit	One	IV
5	AURMT-05	Value addition and Processing of Mango	Two	V
6	AURMT-06	Rejuvenation of old mango trees	One	VI
7	AURMT-07	Export Management in Mango	One	VII

B. Sweet Orange

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	AURSOT-01	Establishment of Sweet Orange Orchard	One	I
2	AURSOT-02	Integrated Nutrient Management in Sweet Orange	One	II
3	AURSOT-03	Production of disease free planting material in Sweet Orange	One	III
4	AURSOT-04	Irrigation & Drainage management in Sweet Orange	One	IV
5	AURSOT-05	Canopy Management in Sweet Orange	One	V
6	AURSOT-06	Rejuvenation of old Sweet Orange trees	One	VI
7	AURSOT-07	Value addition of marketing in Sweet Orange	One	VII

C. Banana

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	AURBT-01	Production of quality planting material	One	I
2	AURBT-02	Integrated Nutrient management in Banana	One	II
3	AURBT-03	Micro irrigation in Banana	One	III
4	AURBT-04	Integrated Pest management in Banana	One	IV
5	AURBT-05	Post Harvest Management in Banana	One	V

D. Pomegranate

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	AURPT-01	Establishment of Pomegranate Orchard	One	I
2	AURPT-02	Integrated Nutrient management in Pomegranate	One	II
3	AURPT-03	Integrated Pest management in Pomegranate	One	III
4	AURPT-04	Micro irrigation in Pomegranate	One	IV
5	AURPT-05	Post Harvest management in Pomegranate	One	V

E. Special Activities

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	AURCTT-01	Establishment of Community Tanks	One	I
2	AURGHT-01	Construction & Management of Green House	Two	I
3	AURPHT-01	Establishment of Pack House	One	I

Design of Training Course

Mango

1) Course Code: AURMT-01

Title: Integrated Pest Management in Mango

- Target group: Mango growers
- Duration: One day
- Month: August to October
- Venue: District Training Center/ Agropolyclinic / Horticulture nursery/ Mango grower's orchard

Objectives

- To develop knowledge about different diseases and pests on Mango
- To impart knowledge and skill for integrated management of pests and diseases on Mango

Course Content

- Concept of Integrated Pest management in Mango
- Pests & Diseases on Mango
- Control measures for pests
- Management of diseases
- Application of Bordeaux mixture/ paste
- Use of biopesticides
- Use of biocontrol agents

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

2) Course Code: AURMT-02

Title: Integrated Nutrient Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: June - July
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand uptake & requirement of nutrients for mango tree
- To select fertilizer & micronutrient grades as per nutrient requirement
- To prepare organic products like vermicompost & BD compost locally
- To apply the nutrients at proper place & time

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in mango production

- Preparation of vermicompost in mango orchard
- Preparation of BD compost

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

3) Course Code: AURMT-03

Title: Canopy Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: July-August
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand need for training and pruning in mango
- To perform different pruning practices in mango
- To prepare & apply Bordeaux paste to the pruned branches

Course Content

- Concept of canopy management
- Pruning technology & its benefits
- Methods of pruning
- Pesticide application & after care

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

4) Course Code: AURMT-04

Title: Pre and Post harvest Management of fruit

- **Target** group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To acquaint with pre & post harvest management practices
- To know techniques for uniform ripening of mango fruits
- To know grading & packaging techniques for mango

Course Content

- Maturity signs
- Harvesting techniques
- Post harvest care of mango fruits

- Fungicide treatment to mango fruits
- Ripening technology
- Keeping quality of mango
- Grading of mango fruits
- Packaging material for mango

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

5) Course Code: AURMT-05

Title: Value addition and Processing of Mango

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic /

Objectives

- To know principles of preservation of mango fruits
- To know processing technology for mango fruits
- To know procedure for small mango processing unit

Course Content

- Principles of preservation
- Processing of raw mango fruits
- Processing of ripe fruits
- Recipes of byproducts from mango
- Packaging of byproducts
- Establishment of small mango processing unit
- Project preparation

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Owners of Processing units

6) Course Code: AURMT-06

Title: Rejuvenation of old mango trees

- Target group: Mango Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To know causes of low productivity in old mango orchards
- To acquaint with the principles & practices of rejuvenation in mango
- To improve nutritional management of senile mango orchards

Course Content

- Causes of low productivity in old mango orchards
- Nutritional requirements of old mango trees
- Use of micronutrients old mango orchards
- Organic manuring in old mango orchards
- Canopy management of old mango trees
- Techniques for removal of parasites (Bandguls)
- Pest & disease management old mango orchards
- Water management old mango orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: AURMT-07**Title: Export Management in Mango**

- Target group: Mango Growers
- Duration: One day
- Month: October- November
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station

Objectives

- To sensitize the mango growers about the export process
- To make the growers aware about export standards required by the importing countries
- To enable the growers to manage pesticide residue in exportable fruits

Course Content

- Scope for export of mango
- Procedure for export of fruits
- Documents required
- Quality standards
- Residue Monitoring plan

Resource Persons

Master Trainers from DoA and Mango experts from SAU

Sweet Orange

1) Course Code: AURMSOT-01

Title: Establishment of Sweet Orange Orchard

- Target group: Farmers who have registered for Sweet Orange plantation
- Duration: One day
- Month: May to June
- Venue: District Training Center/ Agropolyclinic/ SAU / ARS/ NRC/ KVK

Objectives

- To impart knowledge about soil selection for Sweet Orange
- To impart knowledge and skill about digging & filling of pits
- To impart skill of selection of good planting material
- To develop skill of proper planting of Sweet Orange grafts

Course Content

- Site selection
- Soil testing
- Filling of pits
- Preparation of pot mixture
- Selection of planting material
- Planting
- After care
- Intercropping

Resource Persons

Master trainers, Mango Scientists from SAU & KVK & Progressive Sweet Orange growers

2) Course Code: AURMSOT-02

Title: Integrated Nutrient Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: June-July
- Venue: District Training Center/ Agropolyclinic / KVK / ARS/ NRC/ SAU Farm/ Progressive Farmers' Sweet Orange orchard

Objectives

- To impart knowledge & understanding to the trainees about nutrient requirement of Sweet Orange
- To impart knowledge & skill about preparation of micronutrients at field level
- To impart skill in use of biofertilizers, Organic matter & fertilizers

Course Content

- Role of major & micro nutrients in quality fruit production
- Assessment of soil health at field level

- Deficiency Symptoms of major & micronutrients
- Preparation of micronutrients at field level
- Use of Biofertilizers
- Use of liquid/ soluble fertilizers
- Schedule of major and minor elements
- Methods of application

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

3) Course Code: AURMSOT-03

Title: Production of Disease Free Planting Material

- Target group: Sweet Orange growers & Nursery owners(NHM)
- Duration: Three days
- Month: September to December
- Venue: Horticulture nursery/ District Training Center/ Agropolyclinic / KVK / NRC/ SAU Nursery

Objectives

- To help trainees to know about good quality stock & scion
- To help in gaining knowledge of establishment of primary nursery & secondary nursery
- To develop knowledge skill in solarization of soil
- To impart knowledge about hardening of plants

Course Content

- Need for quality planting material
- Selection of site for nursery
- Establishment of Mother Block of Stock & scion
- Establishment Of primary nursery (Seed-Seedlings)
- Establishment Of secondary nursery (Budding-Salable)
- Demonstration of solarization
- Use of fungicides
- Hardening of plants
- Green house & Polyhouse
- Management of nursery

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

4) Course Code: AURMSOT-12

Title: Canopy Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: One day
- Month: June- July

- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Sweet Orange orchard

Objectives

- To acquaint trainees to importance of training & pruning
- To develop knowledge and skill in training & pruning

Course Content

- Removal of site shoots on stock & scion in pre bearing orchard
- Proper training
- Thinning of branches
- Removal of water shoots

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

5) Course Code: AURMSOT-05

Title: Management of Irrigation and Drainage in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK /NRC/ SAU/ Progressive Farmers' Sweet Orange orchard

Objectives

- To develop understanding about water requirement of Sweet Orange at diff. stages
- To develop knowledge skill in water scheduling
- To inculcate in trainees importance of drainage for Sweet Orange

Course Content

- Different methods of irrigation
- Water requirement of Orange according to crop load, canopy & type of soil
- Scheduling of irrigation
- Testing of water holding capacity
- Permanent wilting point and field capacity
- Diff. Types of drainage systems
- Role of drainage
- Effect of bad drainage on fruit quality & plant health

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

6) Course Code: AURSOT-06

Title: Rejuvenation of old Sweet Orange trees

- Target group: Sweet Orange Growers
- Duration: One day
- Month: August- September
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive Sweet Orange grower

Objectives

- To know causes of low productivity in old Sweet Orange orchards
- To acquaint with the principles & practices of rejuvenation in Sweet Orange
- To improve nutritional management of senile Sweet Orange orchards

Course Content

- Causes of low productivity in old Sweet Orange orchards
- Nutritional requirements of old Sweet Orange trees
- Use of micronutrients old Sweet Orange orchards
- Organic manuring in old Sweet Orange orchards
- Canopy management of old Sweet Orange trees
- Pest & disease management old Sweet Orange orchards
- Water management old Sweet Orange orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: AURMSOT-07

Title: Value addition & Marketing of Sweet Orange

- Target group: Sweet Orange growers & agri- entrepreneurs(NHM)
- Duration: Two days
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / KVK / Sweet Orange Processing Unit

Objectives

- To develop knowledge & skill of trainee farmers in preparation of selected byproducts from Sweet Orange
- To develop knowledge about use of Sweet Orange in cosmetics, animal feed, peel oil & winery
- To motivate farmers to establishment Sweet Orange Growers Marketing & processing groups in rural area

Course Content

- Byproducts from Sweet Orange Juice
- Concentrated Juice
- Preservation of slices
- Use of orange in cosmetics

- Extraction of peel oil
- Establishment of Sweet Orange Growers' & Marketing Associations
- Formation of Processing & Marketing interest groups

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Owners of processing units, Progressive farmers

Banana

1) Course Code: AURBT-01

Title: Production of quality planting material

- Target group: Growers registered for plantation of Banana
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To enable the trainees to prepare good planting material locally

Course Content

- Importance of good quality planting material
- Quality parameters
- Selection of mother suckers
- Cultivation practices
- Treatment to suckers

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: AURBT-02

Title: Integrated Nutrient management in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To impart knowledge about nutrient requirement of Banana
- To enable the trainees to identify the deficiency symptoms of the major & micronutrients at field level
- To impart skill for use of biofertilizers, Organic matter & micronutrients

Course content

- Uptake & requirement of nutrients
- Deficiency symptoms
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in banana production
- Preparation of vermicompost
- Preparation of BD compost
- Methods of application of biofertilizers, organic matter & micronutrients

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: AURBT-03

Title: Micro irrigation in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To develop understanding about water requirement of Banana.
- To impart skill for water scheduling
- To impart knowledge & skill about installation and maintenance of drip irrigation system

Course Content

- Different methods of irrigation
- Water requirement of Pomegranate
- Scheduling of irrigation
- Drip irrigation system
- Maintenance of micro-irrigation systems
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

4) Course Code: AURBT-04

Title: Integrated Pest management in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To identify pests & diseases affecting Banana
- To understand the causes for outbreak of Cigatoka & other diseases on Banana
- To know measure to manage the pests & diseases on Banana

Course Content

- Agro ecosystem analysis
- Identification of Pests on Banana
- Identification of diseases affecting Banana
- Causes of Cigatoka
- Control measures for pest & diseases
- Sanitation in Banana plantation
- Preparation of spray solution of pesticides

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

5) Course Code: AURBT-05

Title: Post Harvest Management of Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / KVK/ Progressive farmers' plantation

Objectives

- To enable trainees in carrying out proper harvesting of Banana
- To impart knowledge & skill about storage, ripening & transportation techniques for Banana

Course Content

- Harvesting stage of Banana
- Storage Losses & remedies
- Ripening Technology
- Grading of Banana bunches

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Pomegranate

1) Course Code: AURMPT-01

Title: Establishment of Pomegranate Orchard

- Target group: Growers registered for plantation of Pomegranate
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To select and prepare proper land for pomegranate cultivation
- To prepare & fill proper pits for plantation of pomegranate grafts
- To select & plant good pomegranate grafts scientifically
- To prepare layout for drip irrigation system

Course Content

- Selection of site for pomegranate orchard
- Soil health analysis
- Layout for pomegranate orchard
- Preparation & Filling of pits
- Selection of good pomegranate grafts
- Planting techniques for pomegranate grafts
- Layout for drip irrigation system

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

2) Course Code: AURMPT-02

Title: Integrated Nutrient management in Pomegranate

- Target group: Pomegranate Growers
- Duration: One day
- Month: July and November
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To understand uptake & requirement of nutrients for Pomegranate tree
- To understand role of micronutrients in quality fruit production
- To prepare organic products like vermicompost & BD compost locally
- To know practices for better management of *bahar*

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in Pomegranate production
- Use of growth regulators

- Preparation of vermicompost in Pomegranate orchard
- Preparation of BD compost
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

3) Course Code: AURMPT-03

Title: Integrated Pest management in Pomegranate

- Target group: Pomegranate Growers
- Duration: One day
- Month: July -August
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To identify pests & diseases affecting Pomegranate plants
- To understand the causes for outbreak of Bacterial Oily spots (Telya) caused by Xanthomonas spp.
- To know measure to manage the pests & diseases on Pomegranate
- To acquaint with Pomegranate plant protection schedule

Course Content

- Agro ecosystem analysis
- Identification of Pests on Pomegranate
- Identification of diseases affecting Pomegranate
- Causes of Bacterial spot disease
- Control measures for pest & diseases
- Sanitation of Pomegranate orchard
- Plant protection schedule
- Preparation of spray solution of pesticides

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

4) Course Code: AURMPT-04

Title: Micro irrigation in Pomegranate

- Target group: Pomegranate Growers
- Duration: One day
- Month: December- January
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To develop understanding about water requirement of Pomegranate.
- To impart skill for water scheduling
- To impart knowledge & skill about installation and maintenance of drip irrigation system

Course Content

- Different methods of irrigation
- Water requirement of Pomegranate
- Scheduling of irrigation
- Drip irrigation system
- Maintenance of microirrigation systems
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

5) Course Code: AURMPT-05**Title: Post Harvest management in Pomegranate**

- Target group: Pomegranate Growers
- Duration: One day
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To enable trainees in carrying out post harvest management practices
- To impart knowledge & skill about grading & packaging techniques for Pomegranate

Course Content

- Keeping quality of Pomegranate
- Grading of Pomegranate fruits
- Packaging material for Pomegranate
- Packaging techniques for Pomegranate

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

Special Activities

1) Course Code: AURCTT-01

Title: Establishment of Community Tanks

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about selection of site for community tanks
- To enable the trainees to prepare estimates of construction of community tank
- To facilitate the trainees in planning for construction of community tank

Course Contents

- Selection of site
- Design of community tank
- Estimation of earthwork
- Preparation of estimate
- Planning for construction of community tank

Resource Persons

Master trainers from DoA

2) Course Code: AURGHT-01

Title: Construction & Management of Green House

- Target group: Beneficiaries under NHM
- Duration: Two days
- Month: October to December
- Venue: District Training Center / Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Green House Technology
- To know various components of Green House construction
- To facilitate the trainees in selection of crops to be grown under Green House conditions
- To impart skill for execution of various practices in Green House

Course Contents

- Principles of Green House construction
- Selection of site for Green House
- Components of Green House
- Selection of crop & varieties for cultivation in Green House
- Preparation of beds
- Fertigation management
- Plant protection in Green House

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

3) Course Code: AURPHT-01**Title: Construction & Management of Pack House**

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Pack House Technology
- To know various components of Pack House construction
- To impart skill for preparation of project for Pack House

Course Contents

- Scope for Pack House construction
- Selection of site for Pack House
- Components of Pack House
- Scheduling of crop & varieties for storage in Pack House
- Preparation of project proposal of Pack house

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center - Talegaon, Technologists from SAU / Private firms

BEED

A. Mango

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDMT-01	Plant Protection in Mango	One	I
2	BEEDMT-02	Integrated Nutrient Management in Mango	One	II
3	BEEDMT-03	Canopy Management in Mango	One	III
4	BEEDMT-04	Pre and Post harvest Management of fruit	One	IV
5	BEEDMT-05	Value addition and Processing of Mango	Two	V
6	BEEDMT-06	Rejuvenation of old mango trees	One	VI
7	BEEDMT-07	Export Oriented Mango Production	One	VII

B. Sweet Orange

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDSOT-01	Establishment of Sweet Orange Orchard	One	I
2	BEEDSOT-02	Integrated Nutrient Management in Sweet Orange	One	II
3	BEEDSOT-03	Production of disease free planting material in Sweet Orange	One	III
4	BEEDSOT-04	Irrigation & Drainage management in Sweet Orange	One	IV
5	BEEDSOT-05	Canopy Management in Sweet Orange	One	V
6	BEEDSOT-06	Rejuvenation of old Sweet Orange trees	One	VI
7	BEEDSOT-07	Value addition of marketing in Sweet Orange	One	VII

C. Custard Apple

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDCAT-01	Nutrition Management in Custard Apple	One	I
2	BEEDCAT-02	Processing of Custard Apple	One	II

D. Pomegranate

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDPT-01	Establishment of Pomegranate Orchard	One	I
2	BEEDPT-02	Integrated Nutrient management in Pomegranate	One	II
3	BEEDPT-03	Integrated Pest management in Pomegranate	One	III
4	BEEDPT-04	Micro irrigation in Pomegranate	One	IV
5	BEEDPT-05	Post Harvest management in Pomegranate	One	V

E. Aonla

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDAT-01	Production of Grafts of Aonla	One	I
2	BEEDAT-02	Establishment of Aonla orchard	One	II
3	BEEDAT-03	Processing of Aonla	One	III

F. Vegetables

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDVT-01	Nursery Management in Vegetables	Two	I
2	BEEDVT-02	Integrated Pest Management in Vegetables	One	II
3	BEEDVT-03	Post Harvest management in vegetables	One	III

G. Special Activities

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	BEEDCTT-01	Establishment of Community Tanks	One	I
2	BEEDGHT-01	Construction & Management of Green House	Two	I
3	BEEDPHT-01	Establishment of Pack House	One	I

Design of Training Courses Planned

Mango

1) Course Code: BEEDMT-01

Title: Integrated Pest Management in Mango

- Target group: Mango growers
- Duration: One day
- Month: August to October
- Venue: District Training Center/ Agropolyclinic / Horticulture nursery/ Mango grower's orchard

Objectives

- To develop knowledge about different diseases and pests on Mango
- To impart knowledge and skill for integrated management of pests and diseases on Mango

Course Content

- Concept of Integrated Pest management in Mango
- Pests & Diseases on Mango
- Control measures for pests
- Management of diseases
- Application of Bordeaux mixture/ paste
- Use of biopesticides
- Use of biocontrol agents

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

2) Course Code: BEEDMT-02

Title: Integrated Nutrient Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: June - July
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand uptake & requirement of nutrients for mango tree
- To select fertilizer & micronutrient grades as per nutrient requirement
- To prepare organic products like vermicompost & BD compost locally
- To apply the nutrients at proper place & time

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement

- Role of micronutrients in mango production
- Preparation of vermicompost in mango orchard
- Preparation of BD compost

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

3) Course Code: BEEDMT-03

Title: Canopy Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: July-August
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand need for training and pruning in mango
- To perform different pruning practices in mango
- To prepare & apply Bordeaux paste to the pruned branches

Course Content

- Concept of canopy management
- Pruning technology & its benefits
- Methods of pruning
- Pesticide application & after care

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

4) Course Code: BEEDMT-04

Title: Pre and Post harvest Management of fruit

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To acquaint with pre & post harvest management practices
- To know techniques for uniform ripening of mango fruits
- To know grading & packaging techniques for mango

Course Content

- Maturity signs
- Harvesting techniques

- Post harvest care of mango fruits
- Fungicide treatment to mango fruits
- Ripening technology
- Keeping quality of mango
- Grading of mango fruits
- Packaging material for mango

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

5) Course Code: BEEDMT-05

Title: Value addition and Processing of Mango

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic /

Objectives

- To know principles of preservation of mango fruits
- To know processing technology for mango fruits
- To know procedure for small mango processing unit

Course Content

- Principles of preservation
- Processing of raw mango fruits
- Processing of ripe fruits
- Recipes of byproducts from mango
- Packaging of byproducts
- Establishment of small mango processing unit
- Project preparation

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Owners of Processing units

6) Course Code: BEEDMT-06

Title: Rejuvenation of old mango trees

- Target group: Mango Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To know causes of low productivity in old mango orchards
- To acquaint with the principles & practices of rejuvenation in mango

- To improve nutritional management of senile mango orchards

Course Content

- Causes of low productivity in old mango orchards
- Nutritional requirements of old mango trees
- Use of micronutrients old mango orchards
- Organic manuring in old mango orchards
- Canopy management of old mango trees
- Techniques for removal of parasites (Bandguls)
- Pest & disease management old mango orchards
- Water management old mango orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: BEEDMT-07

Title: Export Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: October- November
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station

Objectives

- To sensitize the mango growers about the export process
- To make the growers aware about export standards required by the importing countries
- To enable the growers to manage pesticide residue in exportable fruits

Course Content

- Scope for export of mango
- Procedure for export of fruits
- Documents required
- Quality standards
- Residue Monitoring plan

Resource Persons

Master Trainers from DoA and Mango experts from SAU

Sweet Orange

1) Course Code: BEEDSOT-01

Title: Establishment of Sweet Orange Orchard

- Target group: Farmers who have registered for Sweet Orange plantation
- Duration: One day
- Month: May to June
- Venue: District Training Center/ Agropolyclinic/ SAU / ARS/ NRC/ KVK

Objectives

- To impart knowledge about soil selection for Sweet Orange
- To impart knowledge and skill about digging & filling of pits
- To impart skill of selection of good planting material
- To develop skill of proper planting of Sweet Orange grafts

Course Content

- Site selection
- Soil testing
- Filling of pits
- Preparation of pot mixture
- Selection of planting material
- Planting
- After care
- Intercropping

Resource Persons

Master trainers, Mango Scientists from SAU & KVK & Progressive Sweet Orange growers

2) Course Code: BEEDSOT-02

Title: Integrated Nutrient Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: June-July
- Venue: District Training Center/ Agropolyclinic / KVK / ARS/ NRC/ SAU Farm/ Progressive Farmers' Sweet Orange orchard

Objectives

- To impart knowledge & understanding to the trainees about nutrient requirement of Sweet Orange
- To impart knowledge & skill about preparation of micronutrients at field level
- To impart skill in use of biofertilizers, Organic matter & fertilizers

Course Content

- Role of major & micro nutrients in quality fruit production
- Assessment of soil health at field level

- Deficiency Symptoms of major & micronutrients
- Preparation of micronutrients at field level
- Use of Biofertilizers
- Use of liquid/ soluble fertilizers
- Schedule of major and minor elements
- Methods of application

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

3) Course Code: BEEDSOT-03

Title: Production of Disease Free Planting Material

- Target group: Sweet Orange growers & Nursery owners(NHM)
- Duration: Three days
- Month: September to December
- Venue: Horticulture nursery/ District Training Center/ Agropolyclinic / KVK / NRC/ SAU Nursery

Objectives

- To help trainees to know about good quality stock & scion
- To help in gaining knowledge of establishment of primary nursery & secondary nursery
- To develop knowledge skill in solarization of soil
- To impart knowledge about hardening of plants

Course Content

- Need for quality planting material
- Selection of site for nursery
- Establishment of Mother Block of Stock & scion
- Establishment Of primary nursery (Seed-Seedlings)
- Establishment Of secondary nursery (Budding-Salable)
- Demonstration of solarization
- Use of fungicides
- Hardening of plants
- Green house & Polyhouse
- Management of nursery

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

4) Course Code: BEEDSOT-12

Title: Canopy Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: One day
- Month: June- July

- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Sweet Orange orchard

Objectives

- To acquaint trainees to importance of training & pruning
- To develop knowledge and skill in training & pruning

Course Content

- Removal of site shoots on stock & scion in pre bearing orchard
- Proper training
- Thinning of branches
- Removal of water shoots

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

5) Course Code: BEEDSOT-05

Title: Management of Irrigation and Drainage in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK /NRC/ SAU/ Progressive Farmers' Sweet Orange orchard

Objectives

- To develop understanding about water requirement of Sweet Orange at diff. stages
- To develop knowledge skill in water scheduling
- To inculcate in trainees importance of drainage for Sweet Orange

Course Content

- Different methods of irrigation
- Water requirement of Orange according to crop load, canopy & type of soil
- Scheduling of irrigation
- Testing of water holding capacity
- Permanent wilting point and field capacity
- Diff. Types of drainage systems
- Role of drainage
- Effect of bad drainage on fruit quality & plant health

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

6) Course Code: BEEDSOT-06

Title: Rejuvenation of old Sweet Orange trees

- Target group: Sweet Orange Growers
- Duration: One day
- Month: August- September
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive Sweet Orange grower

Objectives

- To know causes of low productivity in old Sweet Orange orchards
- To acquaint with the principles & practices of rejuvenation in Sweet Orange
- To improve nutritional management of senile Sweet Orange orchards

Course Content

- Causes of low productivity in old Sweet Orange orchards
- Nutritional requirements of old Sweet Orange trees
- Use of micronutrients old Sweet Orange orchards
- Organic manuring in old Sweet Orange orchards
- Canopy management of old Sweet Orange trees
- Pest & disease management old Sweet Orange orchards
- Water management old Sweet Orange orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: BEEDSOT-07

Title: Value addition & Marketing of Sweet Orange

- Target group: Sweet Orange growers & agri- entrepreneurs(NHM)
- Duration: Two days
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / KVK / Sweet Orange Processing Unit

Objectives

- To develop knowledge & skill of trainee farmers in preparation of selected byproducts from Sweet Orange
- To develop knowledge about use of Sweet Orange in cosmetics, animal feed, peel oil & winery
- To motivate farmers to establishment Sweet Orange Growers Marketing & processing groups in rural area

Course Content

- Byproducts from Sweet Orange Juice
- Concentrated Juice
- Preservation of slices
- Use of orange in cosmetics

- Extraction of peel oil
- Establishment of Sweet Orange Growers' & Marketing Associations
- Formation of Processing & Marketing interest groups

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Owners of processing units, Progressive farmers

Custard Apple

1) Course Code: BEEDCAT-01

Title: Nutrition Management in Custard Apple

- Target group: Custard Apple Growers
- Duration: One day
- Month: August September
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To understand uptake & requirement of nutrients for Custard Apple
- To know techniques for preparation of organic products like vermicompost & BD compost locally
- To impart skill for application of nutrients to Custard Apple

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Preparation of vermicompost in Custard Apple orchard
- Preparation of BD compost
- Methods of application of fertilizers & organic manures

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: BEEDCAT-02

Title: Processing of Custard Apple

- Target group: Custard Apple Growers
- Duration: One day
- Month: June- July
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To understand scope for processing of Custard Apple
- To know techniques for extraction pulp from Custard Apple
- To enable the trainees to assess market demand for Custard Apple pulp

Course Content

- Scope for processing of Custard Apple
- Pulp extraction technology
- Equipments required & maintenance
- Packing of pulp
- Market management
- Economics of Custard Apple processing

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Owners of Custard Apple processing units.

Aonla

1) Course Code: BEEDAT-01

Title: Production of Grafts of Aonla

- Target group: Farmers registered for Aonla cultivation / Nursery owners
- Duration: One day
- Month: November- December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK /

Objectives

- To develop knowledge about selection stock and scion for Aonla
- To develop skill in grafting and budding in Aonla

Course Content

- Selection of stock and scion for Graft preparations
- Method Grafting or budding
- Selection of variety
- Time of Grafting
- Preparation of potting mixture
- Maintenance of grafts

Resource Persons

Master Trainers in DoA, Horticulture Officers, Crop Scientists from SAU/ KVK

2) Course Code: BEEDAT-02

Title: Establishment of Aonla orchard

- Target group: Growers registered for Aonla plantation
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To impart knowledge for selection of proper land for Aonla cultivation
- To impart skill for preparation & filling of pits for plantation of Aonla grafts
- To select & plant good Aonla grafts scientifically

Course Content

- Selection of site for Aonla orchard
- Soil health analysis
- Layout for Aonla orchard
- Preparation & Filling of pits
- Selection of good Aonla grafts
- Planting techniques for Aonla grafts
- Care of newly planted grafts

Resource Persons

Master Trainers in DoA, Horticulture Officers, Crop Scientists from SAU/ KVK

3) Course Code: BEEDAT-03**Title: Processing of Anola**

- Target group: Anola growers & entrepreneurs
- Duration: One day
- Month: November- December
- Venue: District Training Center/ Agropolyclinic / SAU/ KVK / Anola Processing Unit

Objectives

- To develop knowledge & skill in preparation of Anola byproducts
- To motivate trainees for establishment of Anola growers associations
- To impart knowledge about linkages with industry for marketing of Anola & it's products

Course Content

- Preparation of byproducts Supari, Jelly, Candy, Juice, Beverages
- Organisation of Anola Growers Association
- Contract farming in Anola
- Linkages with Buyers of Anola as Pharmaceutical co. & others

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK/ Owners of Anola processing unit.

Pomegranate

1) Course Code: BEEDPT-01

Title: Establishment of Pomegranate Orchard

- Target group: Growers registered for plantation of Pomegranate
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To select and prepare proper land for pomegranate cultivation
- To prepare & fill proper pits for plantation of pomegranate grafts
- To select & plant good pomegranate grafts scientifically
- To prepare layout for drip irrigation system

Course Content

- Selection of site for pomegranate orchard
- Soil health analysis
- Layout for pomegranate orchard
- Preparation & Filling of pits
- Selection of good pomegranate grafts
- Planting techniques for pomegranate grafts
- Layout for drip irrigation system

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

2) Course Code: BEEDPT-02

Title: Integrated Nutrient management in Pomegranate

- Target group: Pomegranate Growers
- Duration: One day
- Month: July and November
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To understand uptake & requirement of nutrients for Pomegranate tree
- To understand role of micronutrients in quality fruit production
- To prepare organic products like vermicompost & BD compost locally
- To know practices for better management of *bahar*

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in Pomegranate production
- Use of growth regulators

- Preparation of vermicompost in Pomegranate orchard
- Preparation of BD compost
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

3) Course Code: BEEDPT-03

Title: Integrated Pest management in Pomegranate

- Target group: Pomegranate Growers
- Duration: One day
- Month: July -August
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To identify pests & diseases affecting Pomegranate plants
- To understand the causes for outbreak of Bacterial Oily spots (Telya) caused by Xanthomonas spp.
- To know measure to manage the pests & diseases on Pomegranate
- To acquaint with Pomegranate plant protection schedule

Course Content

- Agro ecosystem analysis
- Identification of Pests on Pomegranate
- Identification of diseases affecting Pomegranate
- Causes of Bacterial spot disease
- Control measures for pest & diseases
- Sanitation of Pomegranate orchard
- Plant protection schedule
- Preparation of spray solution of pesticides

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

4) Course Code: BEEDPT-04

Title: Micro irrigation in Pomegranate

- Target group: Pomegranate Growers
- Duration: One day
- Month: December- January
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To develop understanding about water requirement of Pomegranate.
- To impart skill for water scheduling
- To impart knowledge & skill about installation and maintenance of drip irrigation system

Course Content

- Different methods of irrigation
- Water requirement of Pomegranate
- Scheduling of irrigation
- Drip irrigation system
- Maintenance of microirrigation systems
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

5) Course Code: BEEDPT-05**Title: Post Harvest management in Pomegranate**

- Target group: Pomegranate Growers
- Duration: One day
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To enable trainees in carrying out post harvest management practices
- To impart knowledge & skill about grading & packaging techniques for Pomegranate

Course Content

- Keeping quality of Pomegranate
- Grading of Pomegranate fruits
- Packaging material for Pomegranate
- Packaging techniques for Pomegranate

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Progressive farmers

Vegetables

1) Course Code: BEEDVT-01

Title: Nursery management in Vegetable

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees to select vegetable crops and varieties for seed/ seedling production
- To develop understanding about seedling production process
- To impart skill for management of seedling production plots

Course Content

- Selection of seeds
- Seed treatment
- Preparation of seedling in shed net house and in field
- Package of practices for seed/ seedling production
- Irrigation methods
- Mulching
- Preparation of seedlings of off season vegetables
- Preparation of seedlings of high value vegetables

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: BEEDVT-02

Title: Integrated Pest Management in Vegetables

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To impart knowledge and skill for identification of pests and diseases on vegetables
- To study different practices for pest management in vegetables

Course Content

- Pest and disease on vegetables
- Nature of damage of pests
- Integrated pest management
- Biological control of pests and diseases
- Use of safe pesticides

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: BEEDVT-03**Title: Post Harvest Management of Vegetables**

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To develop skill in grading, packing of Vegetables for marketing
- To sensitize the trainees about hygiene maintenance after harvest of vegetables

Course Content

- Maturity signs
- Cleaning of vegetables
- Methods of storage of vegetables
- Hormone sprays to increase shelf life
- Preservation of vegetables
- Use of Kanda Chal for Onion storage
- Packaging of vegetables for different markets

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Special Activities

1) Course Code: BEEDCTT-01

Title: Establishment of Community Tanks

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about selection of site for community tanks
- To enable the trainees to prepare estimates of construction of community tank
- To facilitate the trainees in planning for construction of community tank

Course Contents

- Selection of site
- Design of community tank
- Estimation of earthwork
- Preparation of estimate
- Planning for construction of community tank

Resource Persons

Master trainers from DoA

2) Course Code: BEEDGHT-01

Title: Construction & Management of Green House

- Target group: Beneficiaries under NHM
- Duration: Two days
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Green House Technology
- To know various components of Green House construction
- To facilitate the trainees in selection of crops to be grown under Green House conditions
- To impart skill for execution of various practices in Green House

Course Contents

- Principles of Green House construction
- Selection of site for Green House
- Components of Green House
- Selection of crop & varieties for cultivation in Green House
- Preparation of beds
- Fertigation management
- Plant protection in Green House

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms.

3) Course Code: BEEDPHT-01**Title: Construction & Management of Pack House**

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Pack House Technology
- To know various components of Pack House construction
- To impart skill for preparation of project for Pack House

Course Contents

- Scope for Pack House construction
- Selection of site for Pack House
- Components of Pack House
- Scheduling of crop & varieties for storage in Pack House
- Preparation of project proposal of Pack house

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

JALNA

A. Mango

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	JLNMT-01	Integrated Pest Management in Mango	One	I
2	JLNMT-02	Integrated Nutrient Management in Mango	One	II
3	JLNMT-03	Canopy Management in Mango	One	III
4	JLNMT-04	Pre and Post harvest Management of fruit	One	IV
5	JLNMT-05	Value addition and Processing of Mango	Two	V
6	JLNMT-06	Rejuvenation of old mango trees	One	VI
7	JLNMT-07	Export Oriented Mango Production	One	VII

B. Sweet Orange

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	JLNSOT-01	Establishment of Sweet Orange Orchard	One	I
2	JLNSOT-02	Integrated Nutrient Management in Sweet Orange	One	II
3	JLNSOT-03	Production of disease free planting material in Sweet Orange	One	III
4	JLNSOT-04	Irrigation & Drainage management in Sweet Orange	One	IV
5	JLNSOT-05	Canopy Management in Sweet Orange	One	V
6	JLNSOT-06	Rejuvenation of Sweet Orange trees	One	VI
7	JLNSOT-07	Value addition of marketing in Sweet Orange	One	VII

C. Vegetables

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	JLNVT-01	Nursery Management in Vegetables	Two	I
2	JLNVT-02	Integrated Pest Management in Vegetables	One	II
3	JLNVT-03	Post Harvest management in vegetables	One	III

E. Special Activities

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	JLNCTT-01	Establishment of Community Tanks	One	I
2	JLNGHT-01	Construction & Management of Green House	Two	I
3	JLNPH-01	Establishment of Pack House	One	I

Design of Training Courses Planned

Mango

1) Course Code: JLNMT-01

Title: Integrated Pest Management in Mango

- Target group: Mango growers
- Duration: One day
- Month: August to October
- Venue: District Training Center/ Agropolyclinic / Horticulture nursery/ Mango grower's orchard

Objectives

- To develop knowledge about different diseases and pests on Mango
- To impart knowledge and skill for integrated management of pests and diseases on Mango

Course Content

- Concept of Integrated Pest management in Mango
- Pests & Diseases on Mango
- Control measures for pests
- Management of diseases
- Application of Bordeaux mixture/ paste
- Use of biopesticides
- Use of biocontrol agents

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

2) Course Code: JLNMT-02

Title: Integrated Nutrient Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: June - July
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand uptake & requirement of nutrients for mango tree
- To select fertilizer & micronutrient grades as per nutrient requirement
- To prepare organic products like vermicompost & BD compost locally
- To apply the nutrients at proper place & time

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in mango production

- Preparation of vermicompost in mango orchard
- Preparation of BD compost

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

3) Course Code: JLNMT-03

Title: Canopy Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: July-August
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand need for training and pruning in mango
- To perform different pruning practices in mango
- To prepare & apply Bordeaux paste to the pruned branches

Course Content

- Concept of canopy management
- Pruning technology & its benefits
- Methods of pruning
- Pesticide application & after care

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

4) Course Code: JLNMT-04

Title: Pre and Post harvest Management of fruit

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To acquaint with pre & post harvest management practices
- To know techniques for uniform ripening of mango fruits
- To know grading & packaging techniques for mango

Course Content

- Maturity signs
- Harvesting techniques
- Post harvest care of mango fruits

- Fungicide treatment to mango fruits
- Ripening technology
- Keeping quality of mango
- Grading of mango fruits
- Packaging material for mango

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

5) Course Code: JLNMT-05

Title: Value addition and Processing of Mango

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic /

Objectives

- To know principles of preservation of mango fruits
- To know processing technology for mango fruits
- To know procedure for small mango processing unit

Course Content

- Principles of preservation
- Processing of raw mango fruits
- Processing of ripe fruits
- Recipes of byproducts from mango
- Packaging of byproducts
- Establishment of small mango processing unit
- Project preparation

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Owners of Processing units

6) Course Code: JLNMT-06

Title: Rejuvenation of old mango trees

- Target group: Mango Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To know causes of low productivity in old mango orchards
- To acquaint with the principles & practices of rejuvenation in mango
- To improve nutritional management of senile mango orchards

Course Content

- Causes of low productivity in old mango orchards
- Nutritional requirements of old mango trees
- Use of micronutrients old mango orchards
- Organic manuring in old mango orchards
- Canopy management of old mango trees
- Techniques for removal of parasites (Bandguls)
- Pest & disease management old mango orchards
- Water management old mango orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: JLNMT-07**Title: Export Management in Mango**

- Target group: Mango Growers
- Duration: One day
- Month: October- November
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station

Objectives

- To sensitize the mango growers about the export process
- To make the growers aware about export standards required by the importing countries
- To enable the growers to manage pesticide residue in exportable fruits

Course Content

- Scope for export of mango
- Procedure for export of fruits
- Documents required
- Quality standards
- Residue Monitoring plan

Resource Persons

Master Trainers from DoA and Mango experts from SAU

Sweet Orange

1) Course Code: JLNMSOT-01

Title: Establishment of Sweet Orange Orchard

- Target group: Farmers who have registered for Sweet Orange plantation
- Duration: One day
- Month: May to June
- Venue: District Training Center/ Agropolyclinic/ SAU / ARS/ NRC/ KVK

Objectives

- To impart knowledge about soil selection for Sweet Orange
- To impart knowledge and skill about digging & filling of pits
- To impart skill of selection of good planting material
- To develop skill of proper planting of Sweet Orange grafts

Course Content

- Site selection
- Soil testing
- Filling of pits
- Preparation of pot mixture
- Selection of planting material
- Planting
- After care
- Intercropping

Resource Persons

Master trainers, Mango Scientists from SAU & KVK & Progressive Sweet Orange growers

2) Course Code: JLNMSOT-02

Title: Integrated Nutrient Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: June-July
- Venue: District Training Center/ Agropolyclinic / KVK / ARS/ NRC/ SAU Farm/ Progressive Farmers' Sweet Orange orchard

Objectives

- To impart knowledge & understanding to the trainees about nutrient requirement of Sweet Orange
- To impart knowledge & skill about preparation of micronutrients at field level
- To impart skill in use of biofertilizers, Organic matter & fertilizers

Course Content

- Role of major & micro nutrients in quality fruit production
- Assessment of soil health at field level

- Deficiency Symptoms of major & micronutrients
- Preparation of micronutrients at field level
- Use of Biofertilizers
- Use of liquid/ soluble fertilizers
- Schedule of major and minor elements
- Methods of application

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

3) Course Code: JLNMSOT-03

Title: Production of Disease Free Planting Material

- Target group: Sweet Orange growers & Nursery owners(NHM)
- Duration: Three days
- Month: September to December
- Venue: Horticulture nursery/ District Training Center/ Agropolyclinic / KVK / NRC/ SAU Nursery

Objectives

- To help trainees to know about good quality stock & scion
- To help in gaining knowledge of establishment of primary nursery & secondary nursery
- To develop knowledge skill in solarization of soil
- To impart knowledge about hardening of plants

Course Content

- Need for quality planting material
- Selection of site for nursery
- Establishment of Mother Block of Stock & scion
- Establishment Of primary nursery (Seed-Seedlings)
- Establishment Of secondary nursery (Budding-Salable)
- Demonstration of solarization
- Use of fungicides
- Hardening of plants
- Green house & Polyhouse
- Management of nursery

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

4) Course Code: JLNMSOT-12

Title: Canopy Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: One day
- Month: June- July

- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Sweet Orange orchard

Objectives

- To acquaint trainees to importance of training & pruning
- To develop knowledge and skill in training & pruning

Course Content

- Removal of site shoots on stock & scion in pre bearing orchard
- Proper training
- Thinning of branches
- Removal of water shoots

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

5) Course Code: JLNMSOT-05

Title: Management of Irrigation and Drainage in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK /NRC/ SAU/ Progressive Farmers' Sweet Orange orchard

Objectives

- To develop understanding about water requirement of Sweet Orange at diff. stages
- To develop knowledge skill in water scheduling
- To inculcate in trainees importance of drainage for Sweet Orange

Course Content

- Different methods of irrigation
- Water requirement of Orange according to crop load, canopy & type of soil
- Scheduling of irrigation
- Testing of water holding capacity
- Permanent wilting point and field capacity
- Diff. Types of drainage systems
- Role of drainage
- Effect of bad drainage on fruit quality & plant health

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

6) Course Code: JLNSOT-06

Title: Rejuvenation of old Sweet Orange trees

- Target group: Sweet Orange Growers
- Duration: One day
- Month: August- September
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive Sweet Orange grower

Objectives

- To know causes of low productivity in old Sweet Orange orchards
- To acquaint with the principles & practices of rejuvenation in Sweet Orange
- To improve nutritional management of senile Sweet Orange orchards

Course Content

- Causes of low productivity in old Sweet Orange orchards
- Nutritional requirements of old Sweet Orange trees
- Use of micronutrients old Sweet Orange orchards
- Organic manuring in old Sweet Orange orchards
- Canopy management of old Sweet Orange trees
- Pest & disease management old Sweet Orange orchards
- Water management old Sweet Orange orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: JLNSOT-07

Title: Value addition & Marketing of Sweet Orange

- Target group: Sweet Orange growers & agri-entrepreneurs (NHM)
- Duration: Two days
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / KVK / Sweet Orange Processing Unit

Objectives

- To develop knowledge & skill of trainee farmers in preparation of selected byproducts from Sweet Orange
- To develop knowledge about use of Sweet Orange in cosmetics, animal feed, peel oil & winery
- To motivate farmers to establishment Sweet Orange Growers Marketing & processing groups in rural area

Course Content

- Byproducts from Sweet Orange Juice
- Concentrated Juice
- Preservation of slices
- Use of orange in cosmetics
- Extraction of peel oil

- Establishment of Sweet Orange Growers' & Marketing Associations
- Formation of Processing & Marketing interest groups

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Owners of processing units,
Progressive farmers

Vegetables

1) Course Code: JLNVT-01

Title: Nursery management in Vegetable

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees to select vegetable crops and varieties for seed/ seedling production
- To develop understanding about seedling production process
- To impart skill for management of seedling production plots

Course Content

- Selection of seeds
- Seed treatment
- Preparation of seedling in shed net house and in field
- Package of practices for seed/ seedling production
- Irrigation methods
- Mulching
- Preparation of seedlings of off season vegetables
- Preparation of seedlings of high value vegetables

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: JLNVT-02

Title: Integrated Pest Management in Vegetables

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To impart knowledge and skill for identification of pests and diseases on vegetables
- To study different practices for pest management in vegetables

Course Content

- Pest and disease on vegetables
- Nature of damage of pests
- Integrated pest management
- Biological control of pests and diseases
- Use of safe pesticides

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: JLNVT-03**Title: Post Harvest management of vegetables**

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To develop skill in grading, packing of Vegetables for marketing
- To sensitize the trainees about hygiene maintenance after harvest of vegetables

Course Content

- Maturity signs
- Cleaning of vegetables
- Methods of storage of vegetables
- Hormone sprays to increase shelf life
- Preservation of vegetables
- Use of Kanda Chal for Onion storage
- Packaging of vegetables for different markets

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Special Activities

1) Course Code: JLNCTT-01

Title: Establishment of Community Tanks

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about selection of site for community tanks
- To enable the trainees to prepare estimates of construction of community tank
- To facilitate the trainees in planning for construction of community tank

Course Contents

- Selection of site
- Design of community tank
- Estimation of earthwork
- Preparation of estimate
- Planning for construction of community tank

Resource Persons

Master trainers from DoA

2) Course Code: JLNGHT-01

Title: Construction & Management of Green House

- Target group: Beneficiaries under NHM
- Duration: Two days
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Green House Technology
- To know various components of Green House construction
- To facilitate the trainees in selection of crops to be grown under Green House conditions
- To impart skill for execution of various practices in Green House

Course Contents

- Principles of Green House construction
- Selection of site for Green House
- Components of Green House
- Selection of crop & varieties for cultivation in Green House
- Preparation of beds
- Fertigation management
- Plant protection in Green House

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

3) Course Code: JLNPHHT-01**Title: Construction & Management of Pack House**

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Pack House Technology
- To know various components of Pack House construction
- To impart skill for preparation of project for Pack House

Course Contents

- Scope for Pack House construction
- Selection of site for Pack House
- Components of Pack House
- Scheduling of crop & varieties for storage in Pack House
- Preparation of project proposal of Pack house

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

LATUR

A. Mango

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	LATMT-01	Plant Protection in Mango	One	I
2	LATMT-02	Integrated Nutrient Management in Mango	One	II
3	LATMT-03	Canopy Management in Mango	One	III
4	LATMT-04	Pre and Post harvest Management of fruit	One	IV
5	LATMT-05	Value addition and Processing of Mango	Two	V
6	LATMT-06	Rejuvenation of old mango trees	One	VI
7	LATMT-07	Export Oriented Mango Production	One	VII

B. Grape

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	LATGT-01	Establishment of Vineyard	One	I
2	LATGT-02	Management of Grafted vines upto Cane development	One	II
3	LATGT-03	Canopy Management in Grape	One	III
4	LATGT-04	Export Management in Grapes	One	IV
5	LATGT-05	Cultural Practices after April Pruning	One	V
6	LATGT-06	Bunch Development in Grapes	One	VII
7	LATGT-07	Irrigation & Fertigation in Grapes	One	VII
8	LATGT-08	Integrated Pest Management in Grapes	One	VIII

C. Sweet Orange

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	LATSOT-01	Establishment of Sweet Orange Orchard	One	I
2	LATSOT-02	Integrated Nutrient Management in Sweet Orange	One	II
3	LATSOT-03	Production of disease free planting material in Sweet Orange	One	III
4	LATSOT-04	Irrigation & Drainage management in Sweet Orange	One	IV
5	LATSOT-05	Canopy Management in Sweet Orange	One	V
6	LATSOT-06	Rejuvenation of old Sweet Orange trees	One	VI
7	LATSOT-07	Value addition of marketing in Sweet Orange	One	VII

D. Vegetables

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	LATVT-01	Nursery Management in Vegetables	Two	I
2	LATVT-02	Integrated Pest Management in Vegetables	One	II
3	LATVT-03	Post Harvest management in vegetables	One	III

E. Special Activities

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	LATCTT-01	Establishment of Community Tanks	One	I
2	LATGHT-01	Construction & Management of Green House	Two	I
3	LATPHT-01	Establishment of Pack House	One	I

Design of Training Courses Planned

Mango

1) Course Code: LATMT-01

Title: Integrated Pest Management in Mango

- Target group: Mango growers
- Duration: One day
- Month: August to October
- Venue: District Training Center/ Agropolyclinic / Horticulture nursery/ Mango grower's orchard

Objectives

- To develop knowledge about different diseases and pests on Mango
- To impart knowledge and skill for integrated management of pests and diseases on Mango

Course Content

- Concept of Integrated Pest management in Mango
- Pests & Diseases on Mango
- Control measures for pests
- Management of diseases
- Application of Bordeaux mixture/ paste
- Use of biopesticides
- Use of biocontrol agents

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

2) Course Code: LATMT-02

Title: Integrated Nutrient Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: June - July
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand uptake & requirement of nutrients for mango tree
- To select fertilizer & micronutrient grades as per nutrient requirement
- To prepare organic products like vermicompost & BD compost locally
- To apply the nutrients at proper place & time

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in mango production

- Preparation of vermicompost in mango orchard
- Preparation of BD compost

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

3) Course Code: LATMT-02

Title: Canopy Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: July-August
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand need for training and pruning in mango
- To perform different pruning practices in mango
- To prepare & apply Bordeaux paste to the pruned branches

Course Content

- Concept of canopy management
- Pruning technology & its benefits
- Methods of pruning
- Pesticide application & after care

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

4) Course Code: LATMT-04

Title: Pre and Post harvest Management of fruit

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To acquaint with pre & post harvest management practices
- To know techniques for uniform ripening of mango fruits
- To know grading & packaging techniques for mango

Course Content

- Maturity signs
- Harvesting techniques
- Post harvest care of mango fruits

- Fungicide treatment to mango fruits
- Ripening technology
- Keeping quality of mango
- Grading of mango fruits
- Packaging material for mango

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

5) Course Code: LATMT-05

Title: Value addition and Processing of Mango

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic /

Objectives

- To know principles of preservation of mango fruits
- To know processing technology for mango fruits
- To know procedure for small mango processing unit

Course Content

- Principles of preservation
- Processing of raw mango fruits
- Processing of ripe fruits
- Recipes of byproducts from mango
- Packaging of byproducts
- Establishment of small mango processing unit
- Project preparation

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Owners of Processing units

6) Course Code: LATMT-06

Title: Rejuvenation of old mango trees

- Target group: Mango Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To know causes of low productivity in old mango orchards
- To acquaint with the principles & practices of rejuvenation in mango
- To improve nutritional management of senile mango orchards

Course Content

- Causes of low productivity in old mango orchards
- Nutritional requirements of old mango trees
- Use of micronutrients old mango orchards
- Organic manuring in old mango orchards
- Canopy management of old mango trees
- Techniques for removal of parasites (Bandguls)
- Pest & disease management old mango orchards
- Water management old mango orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: LATMT-07**Title: Export Management in Mango**

- Target group: Mango Growers
- Duration: One day
- Month: October- November
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station

Objectives

- To sensitize the mango growers about the export process
- To make the growers aware about export standards required by the importing countries
- To enable the growers to manage pesticide residue in exportable fruits

Course Content

- Scope for export of mango
- Procedure for export of fruits
- Documents required
- Quality standards
- Residue Monitoring plan

Resource Persons

Master Trainers from DoA and Mango experts from SAU

Grape

1) Course Code: LATGT-01

Title: Establishment of Vineyard

- Target group: Farmers registered for grape cultivation
- Duration: One day
- Month: August -September
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees in selection of site, Variety & rootstock for raising new vineyard
- To impart skill for proper planting and management of rootstock of grape
- To develop skill for erection of Trellises & development of framework for vines

Course Content

- Selection of Site
- Land preparation & Layout designing
- Erection of Trellises
- Installation of Irrigation System
- Selection of variety & rootstock
- Planting And Grafting
- Framework Development

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers

2) Course Code: LATGT-02

Title: Management of Grafted vines upto Cane development

- Target group: Farmers registered for grape cultivation
- Duration: One day
- Month: August- September
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees in selection & planting of rootstock
- To impart skill for proper grafting of shoots on the rootstock
- To enable the trainees follow practices of management of grafted vines

Course Content

- Selection of Site & land preparation
- Planting of rootstock
- Care of rootstock till grafting
- Training the Sprouted Shoots
- Management of grafted vines
- Cane Maturity

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers

3) Course Code: LATGT-03

Title: Canopy Management in Grapes

- Target group: Grape Growers
- Duration: One day
- Month: October- November
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To sensitize the trainees about role of canopy management in quality grape production
- To impart skill for proper training and pruning of grape vines
- To impart skill for proper thinning of shoots and bunches of grape

Course Content

- Role of Canopy management in quality grape production
- Training techniques
- Pruning technology
- Care to be taken during training & pruning
- Production of loose grape bunch

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers

4) Course Code: LATGT-04

Title: Export Management in Grapes

- Target group: Grape growers registered for Export of grapes
- Duration: One day
- Month: December- January
- Venue: NRC Grape / KVK / SAU/District Training Center/ RAMETI

Objectives

- To enable the trainees understand process for export of fresh grapes
- To sensitize the trainees about export standards of different countries
- To impart knowledge about Residue Monitoring Plan

Course Content

- Process for export of grapes
- Maintenance of records
- Requirements of importing countries
- NRC recommendations
- Residue Monitoring Plan

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers

5) Course Code: LATGT-05

Title: Cultural Practices after April Pruning

- Target group: Grape Growers
- Duration: One day
- Month: March- April
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To impart skill for proper pruning of grape vines
- To impart knowledge of pre and post pruning management practices

Course Content

- Role of April Pruning in grape production
- Pre pruning practices
- Development of canopy architecture
- Fruit Bud Differentiation
- Fruit bud development
- Nutrition management
- Irrigation management
- Pest management

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers

6) Course Code: LATGT-06

Title: Bunch Development in Grapes

- Target group: Grape Growers
- Duration: One day
- Month: September- October
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To sensitize the trainees about role of canopy management in bunch development
- To impart knowledge & skill about use of growth regulators for bunch development
- To impart skill for proper thinning of bunches and berries

Course Content

- Role of Canopy management in bunch development
- Training of shoots
- Training of bunch
- Use of chemical for uniform bud break
- Use of growth regulators

- Berry thinning
- Girdling
- Protection of bunches

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers/ Progressive grape growers

7) Course Code: LATGT-07

Title: Irrigation Management in Grapes

- Target group: Grape growers
- Duration: One day
- Month: November- December
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees assess water requirement of grape at different stages
- To sensitize the trainees about effect of quality of water on grape quality
- To impart knowledge about micro-irrigation techniques

Course Content

- Water requirement of grapevine
- Need for irrigation scheduling
- Effect of quality of water on grape production
- Micro-irrigation techniques
- Water harvesting structures

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers/ Progressive grape growers

8) Course Code: LATGT-08

Title: Integrated Pest Management in Grapes

- Target group: Grape growers
- Duration: One day
- Month: November- December
- Venue: NRC Grape / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees assess prevalence pests and diseases on grapevine at different stages
- To sensitize the trainees about integrated management of pests & diseases
- To impart knowledge about judicious use of pesticides

Course Content

- Insect Pests on Grapevine
- Diseases of Grapevine
- Need for IPM in Grape

- Use of biopesticides & biocontrol agents
- Safe use pesticides
- Residue Monitoring System

Resource Persons

Scientists from NRC Grape/ SAU/ Master trainers/ Progressive grape growers

Sweet Orange

1) Course Code: LATSOT-01

Title: Establishment of Sweet Orange Orchard

- Target group: Farmers who have registered for Sweet Orange plantation
- Duration: One day
- Month: May to June
- Venue: District Training Center/ Agropolyclinic/ SAU / ARS/ NRC/ KVK

Objectives

- To impart knowledge about soil selection for Sweet Orange
- To impart knowledge and skill about digging & filling of pits
- To impart skill of selection of good planting material
- To develop skill of proper planting of Sweet Orange grafts

Course Content

- Site selection
- Soil testing
- Filling of pits
- Preparation of pot mixture
- Selection of planting material
- Planting
- After care
- Intercropping

Resource Persons

Master trainers, Mango Scientists from SAU & KVK & Progressive Sweet Orange growers

2) Course Code: LATSOT-02

Title: Integrated Nutrient Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: June-July
- Venue: District Training Center/Agropolyclinic/KVK/ARS/NRC/SAU Farm/Progressive Farmers' Sweet Orange orchard

Objectives

- To impart knowledge & understanding to the trainees about nutrient requirement of Sweet Orange
- To impart knowledge & skill about preparation of micronutrients at field level
- To impart skill in use of biofertilizers, Organic matter & fertilizers

Course Content

- Role of major & micro nutrients in quality fruit production
- Assessment of soil health at field level
- Deficiency Symptoms of major & micronutrients

- Preparation of micronutrients at field level
- Use of Biofertilizers
- Use of liquid/ soluble fertilizers
- Schedule of major and minor elements
- Methods of application

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

3) Course Code: LATSOT-03

Title: Production of Disease Free Planting Material

- Target group: Sweet Orange growers & Nursery owners(NHM)
- Duration: Three days
- Month: September to December
- Venue: Horticulture nursery/ District Training Center/ Agropolyclinic / KVK / NRC/ SAU Nursery

Objectives

- To help trainees to know about good quality stock & scion
- To help in gaining knowledge of establishment of primary nursery & secondary nursery
- To develop knowledge skill in solarization of soil
- To impart knowledge about hardening of plants

Course Content

- Need for quality planting material
- Selection of site for nursery
- Establishment of Mother Block of Stock & scion
- Establishment Of primary nursery (Seed-Seedlings)
- Establishment Of secondary nursery (Budding-Salable)
- Demonstration of solarization
- Use of fungicides
- Hardening of plants
- Green house & Polyhouse
- Management of nursery

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

4) Course Code: LATSOT-04

Title: Canopy Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: One day
- Month: June- July
- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Sweet Orange orchard

Objectives

- To acquaint trainees to importance of training & pruning
- To develop knowledge and skill in training & pruning

Course Content

- Removal of site shoots on stock & scion in pre bearing orchard
- Proper training
- Thinning of branches
- Removal of water shoots

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

5) Course Code: LATSOT-05**Title: Management of Irrigation and Drainage in Sweet Orange**

- Target group: Sweet Orange growers
- Duration: Two days
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK /NRC/ SAU/ Progressive Farmers' Sweet Orange orchard

Objectives

- To develop understanding about water requirement of Sweet Orange at diff. stages
- To develop knowledge skill in water scheduling
- To inculcate in trainees importance of drainage for Sweet Orange

Course Content

- Different methods of irrigation
- Water requirement of Orange according to crop load, canopy & type of soil
- Scheduling of irrigation
- Testing of water holding capacity
- Permanent wilting point and field capacity
- Diff. Types of drainage systems
- Role of drainage
- Effect of bad drainage on fruit quality & plant health

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

6) Course Code: LATSOT-06**Title: Rejuvenation of old Sweet Orange trees**

- Target group: Sweet Orange Growers
- Duration: One day
- Month: August- September

- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive Sweet Orange grower

Objectives

- To know causes of low productivity in old Sweet Orange orchards
- To acquaint with the principles & practices of rejuvenation in Sweet Orange
- To improve nutritional management of senile Sweet Orange orchards

Course Content

- Causes of low productivity in old Sweet Orange orchards
- Nutritional requirements of old Sweet Orange trees
- Use of micronutrients old Sweet Orange orchards
- Organic manuring in old Sweet Orange orchards
- Canopy management of old Sweet Orange trees
- Pest & disease management old Sweet Orange orchards
- Water management old Sweet Orange orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: LATSOT-07

Title: Value addition & Marketing of Sweet Orange

- Target group: Sweet Orange growers & agri- entrepreneurs(NHM)
- Duration: Two days
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / KVK / Sweet Orange Processing Unit

Objectives

- To develop knowledge & skill of trainee farmers in preparation of selected byproducts from Sweet Orange
- To develop knowledge about use of Sweet Orange in cosmetics, animal feed, peel oil & winery
- To motivate farmers to establishment Sweet Orange Growers Marketing & processing groups in rural area

Course Content

- Byproducts from Sweet Orange Juice
- Concentrated Juice
- Preservation of slices
- Use of orange in cosmetics
- Extraction of peel oil
- Establishment of Sweet Orange Growers' & Marketing Associations
- Formation of Processing & Marketing interest groups

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Owners of processing units, Progressive farmers

Vegetables

1) Course Code: LATVT-01

Title: Nursery management in Vegetable

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees to select vegetable crops and varieties for seed/ seedling production
- To develop understanding about seedling production process
- To impart skill for management of seedling production plots

Course Content

- Selection of seeds
- Seed treatment
- Preparation of seedling in shed net house and in field
- Package of practices for seed/ seedling production
- Irrigation methods
- Mulching
- Preparation of seedlings of off season vegetables
- Preparation of seedlings of high value vegetables

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: LATVT-02

Title: Integrated Pest Management in Vegetables

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To impart knowledge and skill for identification of pests and diseases on vegetables
- To study different practices for pest management in vegetables

Course Content

- Pest and disease on vegetables
- Nature of damage of pests
- Integrated pest management
- Biological control of pests and diseases
- Use of safe pesticides

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: LATVT-03**Title: Post Harvest management of vegetables**

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To develop skill in grading, packing of Vegetables for marketing
- To sensitize the trainees about hygiene maintenance after harvest of vegetables

Course Content

- Maturity signs
- Cleaning of vegetables
- Methods of storage of vegetables
- Hormone sprays to increase shelf life
- Preservation of vegetables
- Use of Kanda Chal for Onion storage
- Packaging of vegetables for different markets

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Special Activities

1) Course Code: LATCTT-01

Title: Establishment of Community Tanks

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about selection of site for community tanks
- To enable the trainees to prepare estimates of construction of community tank
- To facilitate the trainees in planning for construction of community tank

Course Contents

- Selection of site
- Design of community tank
- Estimation of earthwork
- Preparation of estimate
- Planning for construction of community tank

Resource Persons

Master trainers from DoA

2) Course Code: LATGHT-01

Title: Construction & Management of Green House

- Target group: Beneficiaries under NHM
- Duration: Two days
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Green House Technology
- To know various components of Green House construction
- To facilitate the trainees in selection of crops to be grown under Green House conditions
- To impart skill for execution of various practices in Green House

Course Contents

- Principles of Green House construction
- Selection of site for Green House
- Components of Green House
- Selection of crop & varieties for cultivation in Green House
- Preparation of beds
- Fertigation management
- Plant protection in Green House

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

3) Course Code: LATPHT-01**Title: Construction & Management of Pack House**

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Pack House Technology
- To know various components of Pack House construction
- To impart skill for preparation of project for Pack House

Course Contents

- Scope for Pack House construction
- Selection of site for Pack House
- Components of Pack House
- Scheduling of crop & varieties for storage in Pack House
- Preparation of project proposal of Pack house

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

NANDED

A. Mango

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	NANMT-01	Plant Protection in Mango	One	I
2	NANMT-02	Integrated Nutrient Management in Mango	One	II
3	NANMT-03	Canopy Management in Mango	One	III
4	NANMT-04	Pre and Post harvest Management of fruit	One	IV
5	NANMT-05	Value addition and Processing of Mango	Two	V
6	NANMT-06	Rejuvenation of old mango trees	One	VI
7	NANMT-07	Export Oriented Mango Production	One	VII

B. Sweet Orange

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	NANSOT-01	Establishment of Sweet Orange Orchard	One	I
2	NANSOT-02	Integrated Nutrient Management in Sweet Orange	One	II
3	NANSOT-03	Production of disease free planting material in Sweet Orange	One	III
4	NANSOT-04	Plant Protection in Sweet Orange	One	IV
5	NANSOT-05	Rejuvenation of old mango trees	One	V

C. Banana

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	NANBT-01	Production of quality planting material	One	I
2	NANBT-02	Integrated Nutrient management in Banana	One	II
3	NANBT-03	Micro irrigation in Banana	One	III
4	NANBT-04	Integrated Pest management in Banana	One	IV
5	NANBT-05	Post Harvesting Management of Banana	One	V

D. Sapota

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	NANST-01	Nutrient management in Sapota	Two	I
2	NANST-02	Integrated Pest Management in Sapota	One	II
3	NANST-03	Rejuvenation of old Sapota trees	One	III

E. Vegetables

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	NANVT-01	Nursery Management in Vegetables	Two	I
2	NANVT-02	Integrated Pest Management in Vegetables	One	II
3	NANVT-03	Post Harvest management in vegetables	One	III

F. Special Activities

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	NANCTT-01	Establishment of Community Tanks	One	I
2	NANGHT-01	Construction & Management of Green House	Two	I
3	NANPHT-01	Establishment of Pack House	One	I

Design of Training Courses Planned

Mango

1) Course Code: NANMT-01

Title: Integrated Pest Management in Mango

- Target group: Mango growers
- Duration: One day
- Month: August to October
- Venue: District Training Center/ Agropolyclinic / Horticulture nursery/ Mango grower's orchard

Objectives

- To develop knowledge about different diseases and pests on Mango
- To impart knowledge and skill for integrated management of pests and diseases on Mango

Course Content

- Concept of Integrated Pest management in Mango
- Pests & Diseases on Mango
- Control measures for pests
- Management of diseases
- Application of Bordeaux mixture/ paste
- Use of biopesticides
- Use of biocontrol agents

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

2) Course Code: NANMT-02

Title: Integrated Nutrient Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: June - July
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand uptake & requirement of nutrients for mango tree
- To select fertilizer & micronutrient grades as per nutrient requirement
- To prepare organic products like vermicompost & BD compost locally
- To apply the nutrients at proper place & time

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in mango production

- Preparation of vermicompost in mango orchard
- Preparation of BD compost

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

3) Course Code: NANMT-03

Title: Canopy Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: July-August
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand need for training and pruning in mango
- To perform different pruning practices in mango
- To prepare & apply Bordeaux paste to the pruned branches

Course Content

- Concept of canopy management
- Pruning technology & its benefits
- Methods of pruning
- Pesticide application & after care

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

4) Course Code: NANMT-04

Title: Pre and Post harvest Management of fruit

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To acquaint with pre & post harvest management practices
- To know techniques for uniform ripening of mango fruits
- To know grading & packaging techniques for mango

Course Content

- Maturity signs
- Harvesting techniques
- Post harvest care of mango fruits

- Fungicide treatment to mango fruits
- Ripening technology
- Keeping quality of mango
- Grading of mango fruits
- Packaging material for mango

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

5) Course Code: NANMT-05

Title: Value addition and Processing of Mango

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic /

Objectives

- To know principles of preservation of mango fruits
- To know processing technology for mango fruits
- To know procedure for small mango processing unit

Course Content

- Principles of preservation
- Processing of raw mango fruits
- Processing of ripe fruits
- Recipes of byproducts from mango
- Packaging of byproducts
- Establishment of small mango processing unit
- Project preparation

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Owners of Processing units

6) Course Code: NANMT-06

Title: Rejuvenation of old mango trees

- Target group: Mango Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To know causes of low productivity in old mango orchards
- To acquaint with the principles & practices of rejuvenation in mango
- To improve nutritional management of senile mango orchards

Course Content

- Causes of low productivity in old mango orchards
- Nutritional requirements of old mango trees
- Use of micronutrients old mango orchards
- Organic manuring in old mango orchards
- Canopy management of old mango trees
- Techniques for removal of parasites (Bandguls)
- Pest & disease management old mango orchards
- Water management old mango orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: NANMT-07

Title: Export Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: October- November
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station

Objectives

- To sensitize the mango growers about the export process
- To make the growers aware about export standards required by the importing countries
- To enable the growers to manage pesticide residue in exportable fruits

Course Content

- Scope for export of mango
- Procedure for export of fruits
- Documents required
- Quality standards
- Residue Monitoring plan

Resource Persons

Master Trainers from DoA and Mango experts from SAU

Sweet Orange

1) Course Code: NANSOT-01

Title: Establishment of Sweet Orange Orchard

- Target group: Farmers who have registered for Sweet Orange plantation
- Duration: One day
- Month: May to June
- Venue: District Training Center/ Agropolyclinic/ SAU / ARS/ NRC/ KVK

Objectives

- To impart knowledge about soil selection for Sweet Orange
- To impart knowledge and skill about digging & filling of pits
- To impart skill of selection of good planting material
- To develop skill of proper planting of Sweet Orange grafts

Course Content

- Site selection
- Soil testing
- Filling of pits
- Preparation of pot mixture
- Selection of planting material
- Planting
- After care
- Intercropping

Resource Persons

Master trainers, Mango Scientists from SAU & KVK & Progressive Sweet Orange growers

2) Course Code: NANSOT-02

Title: Integrated Nutrient Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: June-July
- Venue: District Training Center/ Agropolyclinic / KVK / ARS/ NRC/ SAU Farm/ Progressive Farmers' Sweet Orange orchard

Objectives

- To impart knowledge & understanding to the trainees about nutrient requirement of Sweet Orange
- To impart knowledge & skill about preparation of micronutrients at field level
- To impart skill in use of biofertilizers, Organic matter & fertilizers

Course Content

- Role of major & micro nutrients in quality fruit production
- Assessment of soil health at field level
- Deficiency Symptoms of major & micronutrients

- Preparation of micronutrients at field level
- Use of Biofertilizers
- Use of liquid/ soluble fertilizers
- Schedule of major and minor elements
- Methods of application

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

3) Course Code: NANSOT-03

Title: Production of Disease Free Planting Material

- Target group: Sweet Orange growers & Nursery owners(NHM)
- Duration: Three days
- Month: September to December
- Venue: Horticulture nursery/ District Training Center/ Agropolyclinic / KVK / NRC/ SAU Nursery

Objectives

- To help trainees to know about good quality stock & scion
- To help in gaining knowledge of establishment of primary nursery & secondary nursery
- To develop knowledge skill in solarization of soil
- To impart knowledge about hardening of plants

Course Content

- Need for quality planting material
- Selection of site for nursery
- Establishment of Mother Block of Stock & scion
- Establishment Of primary nursery (Seed-Seedlings)
- Establishment Of secondary nursery (Budding-Salable)
- Demonstration of solarization
- Use of fungicides
- Hardening of plants
- Green house & Polyhouse
- Management of nursery

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

4) Course Code: NANSOT-12

Title: Canopy Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: One day
- Month: June- July
- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Sweet Orange orchard

Objectives

- To acquaint trainees to importance of training & pruning
- To develop knowledge and skill in training & pruning

Course Content

- Removal of site shoots on stock & scion in pre bearing orchard
- Proper training
- Thinning of branches
- Removal of water shoots

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

5) Course Code: NANSOT-05**Title: Management of Irrigation and Drainage in Sweet Orange**

- Target group: Sweet Orange growers
- Duration: Two days
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK /NRC/ SAU/ Progressive Farmers' Sweet Orange orchard

Objectives

- To develop understanding about water requirement of Sweet Orange at diff. stages
- To develop knowledge skill in water scheduling
- To inculcate in trainees importance of drainage for Sweet Orange

Course Content

- Different methods of irrigation
- Water requirement of Orange according to crop load, canopy & type of soil
- Scheduling of irrigation
- Testing of water holding capacity
- Permanent wilting point and field capacity
- Diff. Types of drainage systems
- Role of drainage
- Effect of bad drainage on fruit quality & plant health

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

6) Course Code: NANMT-06**Title: Rejuvenation of old Sweet Orange trees**

- Target group: Sweet Orange Growers
- Duration: One day
- Month: August- September

- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive Sweet Orange grower

Objectives

- To know causes of low productivity in old Sweet Orange orchards
- To acquaint with the principles & practices of rejuvenation in Sweet Orange
- To improve nutritional management of senile Sweet Orange orchards

Course Content

- Causes of low productivity in old Sweet Orange orchards
- Nutritional requirements of old Sweet Orange trees
- Use of micronutrients old Sweet Orange orchards
- Organic manuring in old Sweet Orange orchards
- Canopy management of old Sweet Orange trees
- Pest & disease management old Sweet Orange orchards
- Water management old Sweet Orange orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: NANSOT-07

Title: Value addition & Marketing of Sweet Orange

- Target group: Sweet Orange growers & agri- entrepreneurs(NHM)
- Duration: Two days
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / KVK / Sweet Orange Processing Unit

Objectives

- To develop knowledge & skill of trainee farmers in preparation of selected byproducts from Sweet Orange
- To develop knowledge about use of Sweet Orange in cosmetics, animal feed, peel oil & winery
- To motivate farmers to establishment Sweet Orange Growers Marketing & processing groups in rural area

Course Content

- Byproducts from Sweet Orange Juice
- Concentrated Juice
- Preservation of slices
- Use of orange in cosmetics
- Extraction of peel oil
- Establishment of Sweet Orange Growers' & Marketing Associations
- Formation of Processing & Marketing interest groups

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Owners of processing units, Progressive farmers

Banana

1) Course Code: NANBT-01

Title: Production of quality planting material

- Target group: Growers registered for plantation of Banana
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To enable the trainees to prepare good planting material locally

Course Content

- Importance of good quality planting material
- Quality parameters
- Selection of mother suckers
- Cultivation practices
- Treatment to suckers

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: NANBT-02

Title: Integrated Nutrient management in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To impart knowledge about nutrient requirement of Banana
- To enable the trainees to identify the deficiency symptoms of the major & micronutrients at field level
- To impart skill for use of biofertilizers, Organic matter & micronutrients

Course content

- Uptake & requirement of nutrients
- Deficiency symptoms
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in banana production
- Preparation of vermicompost
- Preparation of BD compost
- Methods of application of biofertilizers, organic matter & micronutrients

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: NANBT-03

Title: Micro irrigation in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To develop understanding about water requirement of Banana.
- To impart skill for water scheduling
- To impart knowledge & skill about installation and maintenance of drip irrigation system

Course Content

- Different methods of irrigation
- Water requirement of Pomegranate
- Scheduling of irrigation
- Drip irrigation system
- Maintenance of microirrigation systems
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

4) Course Code: NANBT-04

Title: Integrated Pest management in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To identify pests & diseases affecting Banana
- To understand the causes for outbreak of Cigatoka & other diseases on Banana
- To know measure to manage the pests & diseases on Banana

Course Content

- Agro ecosystem analysis
- Identification of Pests on Banana
- Identification of diseases affecting Banana
- Causes of Cigatoka
- Control measures for pest & diseases
- Sanitation in Banana plantation
- Preparation of spray solution of pesticides

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

5) Course Code: NANBT-05

Title: Post Harvest Management of Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / KVK/ Progressive farmers' plantation

Objectives

- To enable trainees in carrying out proper harvesting of Banana
- To impart knowledge & skill about storage, ripening & transportation techniques for Banana

Course Content

- Harvesting stage of Banana
- Storage Losses & remedies
- Ripening Technology
- Grading of Banana bunches

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Vegetables

1) Course Code: NANVT-01

Title: Nursery management in Vegetable

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees to select vegetable crops and varieties for seed/ seedling production
- To develop understanding about seedling production process
- To impart skill for management of seedling production plots

Course Content

- Selection of seeds
- Seed treatment
- Preparation of seedling in shed net house and in field
- Package of practices for seed/ seedling production
- Irrigation methods
- Mulching
- Preparation of seedlings of off season vegetables
- Preparation of seedlings of high value vegetables

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: NANVT-02

Title: Integrated Pest Management in Vegetables

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To impart knowledge and skill for identification of pests and diseases on vegetables
- To study different practices for pest management in vegetables

Course Content

- Pest and disease on vegetables
- Nature of damage of pests
- Integrated pest management
- Biological control of pests and diseases
- Use of safe pesticides

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: NANVT-03**Title: Post Harvest management of vegetables**

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To develop skill in grading, packing of Vegetables for marketing
- To sensitize the trainees about hygiene maintenance after harvest of vegetables

Course Content

- Maturity signs
- Cleaning of vegetables
- Methods of storage of vegetables
- Hormone sprays to increase shelf life
- Preservation of vegetables
- Use of Kanda Chal for Onion storage
- Packaging of vegetables for different markets

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Special Activities

1) Course Code: NANCTT-01

Title: Establishment of Community Tanks

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about selection of site for community tanks
- To enable the trainees to prepare estimates of construction of community tank
- To facilitate the trainees in planning for construction of community tank

Course Contents

- Selection of site
- Design of community tank
- Estimation of earthwork
- Preparation of estimate
- Planning for construction of community tank

Resource Persons

Master trainers from DoA

2) Course Code: NANGHT-01

Title: Construction & Management of Green House

- Target group: Beneficiaries under NHM
- Duration: Two days
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Green House Technology
- To know various components of Green House construction
- To facilitate the trainees in selection of crops to be grown under Green House conditions
- To impart skill for execution of various practices in Green House

Course Contents

- Principles of Green House construction
- Selection of site for Green House
- Components of Green House
- Selection of crop & varieties for cultivation in Green House
- Preparation of beds
- Fertigation management
- Plant protection in Green House

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

3) Course Code: NANPHT-01

Title: Construction & Management of Pack House

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Pack House Technology
- To know various components of Pack House construction
- To impart skill for preparation of project for Pack House

Course Contents

- Scope for Pack House construction
- Selection of site for Pack House
- Components of Pack House
- Scheduling of crop & varieties for storage in Pack House
- Preparation of project proposal of Pack house

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

PARBHANI

A. Mango

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	PARMT-01	Plant Protection in Mango	One	I
2	PARMT-02	Integrated Nutrient Management in Mango	One	II
3	PARMT-03	Canopy Management in Mango	One	III
4	PARMT-04	Pre and Post harvest Management of fruit	One	IV
5	PARMT-05	Value addition and Processing of Mango	Two	V
6	PARMT-06	Rejuvenation of old mango trees	One	VI
7	NANMT-07	Export Oriented Mango Production	One	VII

B. Sweet Orange

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	PARSOT-01	Establishment of Sweet Orange Orchard	One	I
2	PARSOT-02	Integrated Nutrient Management in Sweet Orange	One	II
3	PARSOT-03	Production of disease free planting material in Sweet Orange	One	III
4	PARSOT-04	Plant Protection in Sweet Orange	One	IV
5	PARSOT-05	Rejuvenation of old mango trees	One	V

C. Banana

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	PARBT-01	Production of quality planting material	One	I
2	PARBT-02	Integrated Nutrient management in Banana	One	II
3	PARBT-03	Micro irrigation in Banana	One	III
4	PARBT-04	Integrated Pest management in Banana	One	IV
5	PARBT-05	Post Harvesting Management of Banana	One	V

D. Vegetables

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	PARVT-01	Nursery Management in Vegetables	Two	I
2	PARVT-02	Integrated Pest Management in Vegetables	One	II
3	PARVT-03	Post Harvest management in vegetables	One	III

E. Special Activities

Sr. No.	Course Code	Title of Training Course	Duration (Days)	Priority
1	PARCTT-01	Establishment of Community Tanks	One	I
2	PARGHT-01	Construction & Management of Green House	Two	I
3	PARPHT-01	Establishment of Pack House	One	I

Design of Training Courses Planned

Mango

1) Course Code: PARMT-01

Title: Integrated Pest Management in Mango

- Target group: Mango growers
- Duration: One day
- Month: August to October
- Venue: District Training Center/ Agropolyclinic / Horticulture nursery/ Mango grower's orchard

Objectives

- To develop knowledge about different diseases and pests on Mango
- To impart knowledge and skill for integrated management of pests and diseases on Mango

Course Content

- Concept of Integrated Pest management in Mango
- Pests & Diseases on Mango
- Control measures for pests
- Management of diseases
- Application of Bordeaux mixture/ paste
- Use of biopesticides
- Use of biocontrol agents

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

2) Course Code: PARMT-02

Title: Integrated Nutrient Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: June - July
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand uptake & requirement of nutrients for mango tree
- To select fertilizer & micronutrient grades as per nutrient requirement
- To prepare organic products like vermicompost & BD compost locally
- To apply the nutrients at proper place & time

Course Content

- Uptake & requirement of nutrients
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in mango production

- Preparation of vermicompost in mango orchard
- Preparation of BD compost

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

3) Course Code: PARMT-02

Title: Canopy Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: July-August
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To understand need for training and pruning in mango
- To perform different pruning practices in mango
- To prepare & apply Bordeaux paste to the pruned branches

Course Content

- Concept of canopy management
- Pruning technology & its benefits
- Methods of pruning
- Pesticide application & after care

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

4) Course Code: PARMT-04

Title: Pre and Post harvest Management of fruit

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To acquaint with pre & post harvest management practices
- To know techniques for uniform ripening of mango fruits
- To know grading & packaging techniques for mango

Course Content

- Maturity signs
- Harvesting techniques
- Post harvest care of mango fruits

- Fungicide treatment to mango fruits
- Ripening technology
- Keeping quality of mango
- Grading of mango fruits
- Packaging material for mango

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

5) Course Code: PARMT-05

Title: Value addition and Processing of Mango

- Target group: Mango Growers
- Duration: One day
- Month: February- March
- Venue: District Training Center/ Agropolyclinic /

Objectives

- To know principles of preservation of mango fruits
- To know processing technology for mango fruits
- To know procedure for small mango processing unit

Course Content

- Principles of preservation
- Processing of raw mango fruits
- Processing of ripe fruits
- Recipes of byproducts from mango
- Packaging of byproducts
- Establishment of small mango processing unit
- Project preparation

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Owners of Processing units

6) Course Code: PARMT-06

Title: Rejuvenation of old mango trees

- Target group: Mango Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive mango grower

Objectives

- To know causes of low productivity in old mango orchards
- To acquaint with the principles & practices of rejuvenation in mango
- To improve nutritional management of senile mango orchards

Course Content

- Causes of low productivity in old mango orchards
- Nutritional requirements of old mango trees
- Use of micronutrients old mango orchards
- Organic manuring in old mango orchards
- Canopy management of old mango trees
- Techniques for removal of parasites (Bandguls)
- Pest & disease management old mango orchards
- Water management old mango orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: PARMT-07

Title: Export Management in Mango

- Target group: Mango Growers
- Duration: One day
- Month: October- November
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery / Agril. Res. Station

Objectives

- To sensitize the mango growers about the export process
- To make the growers aware about export standards required by the importing countries
- To enable the growers to manage pesticide residue in exportable fruits

Course Content

- Scope for export of mango
- Procedure for export of fruits
- Documents required
- Quality standards
- Residue Monitoring plan

Resource Persons

Master Trainers from DoA and Mango experts from SAU

Sweet Orange

1) Course Code: PARSOT-01

Title: Establishment of Sweet Orange Orchard

- Target group: Farmers who have registered for Sweet Orange plantation
- Duration: One day
- Month: May to June
- Venue: District Training Center/ Agropolyclinic/ SAU / ARS/ NRC/ KVK

Objectives

- To impart knowledge about soil selection for Sweet Orange
- To impart knowledge and skill about digging & filling of pits
- To impart skill of selection of good planting material
- To develop skill of proper planting of Sweet Orange grafts

Course Content

- Site selection
- Soil testing
- Filling of pits
- Preparation of pot mixture
- Selection of planting material
- Planting
- After care
- Intercropping

Resource Persons

Master trainers, Mango Scientists from SAU & KVK & Progressive Sweet Orange growers

2) Course Code: PARSOT-02

Title: Integrated Nutrient Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: June-July
- Venue: District Training Center/ Agropolyclinic / KVK / ARS/ NRC/ SAU Farm/ Progressive Farmers' Sweet Orange orchard

Objectives

- To impart knowledge & understanding to the trainees about nutrient requirement of Sweet Orange
- To impart knowledge & skill about preparation of micronutrients at field level
- To impart skill in use of biofertilizers, Organic matter & fertilizers

Course Content

- Role of major & micro nutrients in quality fruit production
- Assessment of soil health at field level
- Deficiency Symptoms of major & micronutrients

- Preparation of micronutrients at field level
- Use of Biofertilizers
- Use of liquid/ soluble fertilizers
- Schedule of major and minor elements
- Methods of application

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

3) Course Code: PARSOT-03

Title: Production of Disease Free Planting Material

- Target group: Sweet Orange growers & Nursery owners(NHM)
- Duration: Three days
- Month: September to December
- Venue: Horticulture nursery/ District Training Center/ Agropolyclinic / KVK / NRC/ SAU Nursery

Objectives

- To help trainees to know about good quality stock & scion
- To help in gaining knowledge of establishment of primary nursery & secondary nursery
- To develop knowledge skill in solarization of soil
- To impart knowledge about hardening of plants

Course Content

- Need for quality planting material
- Selection of site for nursery
- Establishment of Mother Block of Stock & scion
- Establishment Of primary nursery (Seed-Seedlings)
- Establishment Of secondary nursery (Budding-Salable)
- Demonstration of solarization
- Use of fungicides
- Hardening of plants
- Green house & Polyhouse
- Management of nursery

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

4) Course Code: PARSOT-12

Title: Canopy Management in Sweet Orange

- Target group: Sweet Orange growers
- Duration: One day
- Month: June- July

- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Sweet Orange orchard

Objectives

- To acquaint trainees to importance of training & pruning
- To develop knowledge and skill in training & pruning

Course Content

- Removal of site shoots on stock & scion in pre bearing orchard
- Proper training
- Thinning of branches
- Removal of water shoots

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

5) Course Code: PARSOT-05

Title: Management of Irrigation and Drainage in Sweet Orange

- Target group: Sweet Orange growers
- Duration: Two days
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK /NRC/ SAU/ Progressive Farmers' Sweet Orange orchard

Objectives

- To develop understanding about water requirement of Sweet Orange at diff. stages
- To develop knowledge skill in water scheduling
- To inculcate in trainees importance of drainage for Sweet Orange

Course Content

- Different methods of irrigation
- Water requirement of Orange according to crop load, canopy & type of soil
- Scheduling of irrigation
- Testing of water holding capacity
- Permanent wilting point and field capacity
- Diff. Types of drainage systems
- Role of drainage
- Effect of bad drainage on fruit quality & plant health

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, NRC, KVK, Progressive Farmers

6) Course Code: PARSOT-06

Title: Rejuvenation of old Sweet Orange trees

- Target group: Sweet Orange Growers
- Duration: One day
- Month: August- September
- Venue: District Training Center/ Agropolyclinic / Govt. Horticulture nursery/ Agril. Res. Station/ Field of progressive Sweet Orange grower

Objectives

- To know causes of low productivity in old Sweet Orange orchards
- To acquaint with the principles & practices of rejuvenation in Sweet Orange
- To improve nutritional management of senile Sweet Orange orchards

Course Content

- Causes of low productivity in old Sweet Orange orchards
- Nutritional requirements of old Sweet Orange trees
- Use of micronutrients old Sweet Orange orchards
- Organic manuring in old Sweet Orange orchards
- Canopy management of old Sweet Orange trees
- Pest & disease management old Sweet Orange orchards
- Water management old Sweet Orange orchards

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU, KVK, Progressive Farmers

7) Course Code: PARSOT-07

Title: Value addition & Marketing of Sweet Orange

- Target group: Sweet Orange growers & agri- entrepreneurs(NHM)
- Duration: Two days
- Month: March-April
- Venue: District Training Center/ Agropolyclinic / KVK / Sweet Orange Processing Unit

Objectives

- To develop knowledge & skill of trainee farmers in preparation of selected byproducts from Sweet Orange
- To develop knowledge about use of Sweet Orange in cosmetics, animal feed, peel oil & winery
- To motivate farmers to establishment Sweet Orange Growers Marketing & processing groups in rural area

Course Content

- Byproducts from Sweet Orange Juice
- Concentrated Juice
- Preservation of slices
- Use of orange in cosmetics
- Extraction of peel oil

- Establishment of Sweet Orange Growers' & Marketing Associations
- Formation of Processing & Marketing interest groups

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ NRC/ KVK, Owners of processing units,
Progressive farmers

Banana

1) Course Code: PARBT-01

Title: Production of quality planting material

- Target group: Growers registered for plantation of Banana
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To enable the trainees to prepare good planting material locally

Course Content

- Importance of good quality planting material
- Quality parameters
- Selection of mother suckers
- Cultivation practices
- Treatment to suckers

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

2) Course Code: PARBT-02

Title: Integrated Nutrient management in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To impart knowledge about nutrient requirement of Banana
- To enable the trainees to identify the deficiency symptoms of the major & micronutrients at field level
- To impart skill for use of biofertilizers, Organic matter & micronutrients

Course content

- Uptake & requirement of nutrients
- Deficiency symptoms
- Working out quantity of fertilizers based on nutrient requirement
- Role of micronutrients in banana production
- Preparation of vermicompost
- Preparation of BD compost
- Methods of application of biofertilizers, organic matter & micronutrients

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: PARBT-03

Title: Micro irrigation in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To develop understanding about water requirement of Banana.
- To impart skill for water scheduling
- To impart knowledge & skill about installation and maintenance of drip irrigation system

Course Content

- Different methods of irrigation
- Water requirement of Pomegranate
- Scheduling of irrigation
- Drip irrigation system
- Maintenance of micro-irrigation systems
- Fertigation technology

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

4) Course Code: PARBT-04

Title: Integrated Pest management in Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / ARS/ KVK

Objectives

- To identify pests & diseases affecting Banana
- To understand the causes for outbreak of Cigatoka & other diseases on Banana
- To know measure to manage the pests & diseases on Banana

Course Content

- Agro ecosystem analysis
- Identification of Pests on Banana
- Identification of diseases affecting Banana
- Causes of Cigatoka
- Control measures for pest & diseases
- Sanitation in Banana plantation
- Preparation of spray solution of pesticides

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

5) Course Code: PARBT-05

Title: Post Harvest Management of Banana

- Target group: Banana Growers
- Duration: One day
- Month: May- June
- Venue: District Training Center/ Agropolyclinic / KVK/ Progressive farmers' plantation

Objectives

- To enable trainees in carrying out proper harvesting of Banana
- To impart knowledge & skill about storage, ripening & transportation techniques for Banana

Course Content

- Harvesting stage of Banana
- Storage Losses & remedies
- Ripening Technology
- Grading of Banana bunches

Resource Persons

Master Trainers in DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Vegetables

1) Course Code: PARVT-01

Title: Nursery management in Vegetable

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To enable the trainees to select vegetable crops and varieties for seed/ seedling production
- To develop understanding about seedling production process
- To impart skill for management of seedling production plots

Course Content

- Selection of seeds
- Seed treatment
- Preparation of seedling in shed net house and in field
- Package of practices for seed/ seedling production
- Irrigation methods
- Mulching
- Preparation of seedlings of off season vegetables
- Preparation of seedlings of high value vegetables

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

3) Course Code: PARVT-02

Title: Integrated Pest Management in Vegetables

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To impart knowledge and skill for identification of pests and diseases on vegetables
- To study different practices for pest management in vegetables

Course Content

- Pest and disease on vegetables
- Nature of damage of pests
- Integrated pest management
- Biological control of pests and diseases
- Use of safe pesticides

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

4) Course Code: PARVT-03**Title: Post Harvest management of vegetables**

- Target group: Vegetable growers
- Duration: One day
- Month: August -September
- Venue: District Training Center/ Agropolyclinic / KVK / SAU/ Progressive Farmers' field

Objectives

- To develop skill in grading, packing of Vegetables for marketing
- To sensitize the trainees about hygiene maintenance after harvest of vegetables

Course Content

- Maturity signs
- Cleaning of vegetables
- Methods of storage of vegetables
- Hormone sprays to increase shelf life
- Preservation of vegetables
- Use of Kanda Chal for Onion storage
- Packaging of vegetables for different markets

Resource Persons

Master Trainers from DoA, Crop Scientists from SAU/ KVK, Progressive farmers

Special Activities

1) Course Code: PARCTT-01

Title: Establishment of Community Tanks

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about selection of site for community tanks
- To enable the trainees to prepare estimates of construction of community tank
- To facilitate the trainees in planning for construction of community tank

Course Contents

- Selection of site
- Design of community tank
- Estimation of earthwork
- Preparation of estimate
- Planning for construction of community tank

Resource Persons

Master trainers from DoA

2) Course Code: PARGHT-01

Title: Construction & Management of Green House

- Target group: Beneficiaries under NHM
- Duration: Two days
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Green House Technology
- To know various components of Green House construction
- To facilitate the trainees in selection of crops to be grown under Green House conditions
- To impart skill for execution of various practices in Green House

Course Contents

- Principles of Green House construction
- Selection of site for Green House
- Components of Green House
- Selection of crop & varieties for cultivation in Green House
- Preparation of beds
- Fertigation management
- Plant protection in Green House

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

3) Course Code: PARPHT-01**Title: Construction & Management of Pack House**

- Target group: Beneficiaries under NHM
- Duration: One day
- Month: October to December
- Venue: District Training Center/ Agropolyclinic / Horticulture Nursery/ SAU/ KVK

Objectives

- To impart knowledge about Pack House Technology
- To know various components of Pack House construction
- To impart skill for preparation of project for Pack House

Course Contents

- Scope for Pack House construction
- Selection of site for Pack House
- Components of Pack House
- Scheduling of crop & varieties for storage in Pack House
- Preparation of project proposal of Pack house

Resource Persons

Master trainers from DoA, Experts from Horticulture Training Center- Talegaon, Technologists from SAU/ Private firms

Project on Farmers Field Schools in Sweet Orange

Horticultural crops provide higher monetary returns consistently on a long term basis to farmers. Sweet lime, Oranges, Pomegranate, Mango, Sapota, Grapes, Banana etc. fruit crops are grown widely and being promoted on large scale in Maharashtra. Recently both area and production of these fruit crops is increasing, however farmers are facing problems like low productivity and low monetary returns mostly due to poor management of the orchards and weak linkage with market structure. A need for integrated approach for management of fruit crops is felt then. Among these fruit crops Orange, Sweet lime, Pomegranate and Mango needs serious attention immediately as these crops face severe problems like Dieback, Black fly, Phytophthora, Bacterial Oily Spots 'Tellya', Inderbella, Hopper etc.

Various approaches are being adopted for dissemination of technology and its adoption. However when problems need to be addressed holistically, and when management also becomes crucial, traditional methods of technology transfer becomes less effective. In case of Sweet Lime, Oranges, Pomegranate and Mango we need to address issues like;

- Nutrition management
- Pest management
- Management of Horticultural practices like bahar treatment
- Intercropping
- Post harvest technology, grading, packing, processing & marketing etc.

Under such scenario we have to choose one of the best effective methods of technology transfer. With the initiative from Food and Agriculture Organization the concept of Farmers' Field School has been widely adopted in India as an innovative extension tool. The FFS tool is well adopted by Department of Agriculture in Maharashtra especially for Cotton, Paddy and Sugarcane. The Experience of farmer's field school (FFS) in cotton has proved that it is one of the best approaches to disseminate sustainable technologies like IPM, INM, Agro-ecosystem analysis, monitoring and decision making accordingly. With adoption of farmer field school (FFS) approach farmers were not only trained in techniques of IPM, but they became trainers and partners in IPM movement which brought out a considerable relief on the front of pest management and also helped in spread of sustainable technologies like integrated crop management which includes INM and organic farming. The theme of FFS is learning through participatory way. The features of FFS approach are as follows;

- Agro-ecosystem analysis and monitoring
- Use of indigenous exogenous pest management practices
- Farmers can develop their own IPM package
- Use of bio-pesticides & pesticides as per need
- Identification of friendly insects and ways to protect them
- Group dynamics- need for collective action

The FFS approach include-

- On farm training on a staggered basis throughout growing season of a crop
- Experiments to draw desired learning on farm visits
- Observation of agro-ecosystems & its analysis (AESA)

- Enabling farmers to take up decisions based on AESA
- Elements of group dynamics
- Farmers are encouraged to become trainers and to form partnerships with Govt. agencies and NGOs for further spread of technologies

Based on this experience now it is being proposed to introduce farmer field school concept in horticultural crops for their better management. To start the FFS approach on pilot basis the task group proposes 4 crops viz. Sweet Orange, Mandarin Orange, Pomegranate and Mango under National Horticultural Mission.

Objectives -

- To develop healthy horticultural orchards
- To introduce integrated approaches in farmers for complete management of horticultural crops
- To increase productivity and quality of fruit crops
- To promote integrated pest management approach
- To promote integrated nutrient management approach
- To promote Post harvest technologies and marketing skills and there by increase net monetary returns of farmers
- To reduce cost **of production**

Training of Facilitators

Plan of ToF in Maharashtra

Sr. No.	Crop	Trainee Facilitators	Master Trainer & Crop Scientists	Duration	Venue
1	Orange	30	5	90	NRC Citrus, Nagpur
2	Sweet Orange	30	5	90	MAU , Parbhani
3	Mango	30	5	90	Dr BSKKV, Dapoli
4	Pomegranate	30	5	90	MAPKV, Rahuri

General Weekly Curriculum Frame Work for ToF in fruit Crop

Day	Forenoon Session	Group Dynamics	Afternoon session
Monday	Fruit crop physiology or short study	G.D.	Non formal education
Tuesday	Long term or short term experiment	G.D.	Special topic (by Guest or other)
Wednesday	Short study	G.D.	FFS preparation
Thursday	FFS practice day	G.D.	FFS feed back
Friday	AESA	G.D.	Insect Zoo/NFE
Saturday	AESA follow up action	G.D.	Special topic or NFE (skills)
Sunday	Rest Day		

I - First Fortnight (10th June – 30th June)

Technical Input	Group Dynamics	Participatory Activities / Skills
<ol style="list-style-type: none"> 1. Discussion on morphology & physiology of Sweet Orange 2. Selection of newly planted, poorly managed & healthy Orange orchard for AESA 3. Agro Eco-system (AES) concept 4. Agro Eco-system Analysis (AES) 5. Types of soils ideal soil for Sweet Orange 6. Drawing of soil sample from orange orchard 7. Discussion on soil testing report 8. Pre-evaluation test 9. Ballot Box Test 10. Pruning technique in old orange orchards 11. Inter cropping viz. Cowpea, Soybean for conservation of friendly insect in orange orchard 	<ol style="list-style-type: none"> 1. Introduction by chain 2. Grouping by animal sound naming of fruit crop 3. Nine dot game 4. Pen in Bottle 5. Longest line 6. Ten horses 7. Hot potato 8. ICM mantra 9. Drawing without lifting pen 10. Broken square 	<ol style="list-style-type: none"> 1. Inauguration of ToF 2. Selection of village for practice FFS 3. Pre-programme or pre-FFS discussion with farmers 4. Listing of 25 farmers & group formation 5. Concept of FFS objectives, benefits 6. Training Methodology 7. Visit to selected gardens for field study 8. General weekly curriculum frame work of ToF for Sweet Orange 9. Objective and quality indicators 10. FSM (Facilitation of Scientific Method)

II. Curriculum for 1st August – 20th August

Technical Input	Group Dynamics	Participatory activities
<ol style="list-style-type: none"> 1. Method of Sweet Orange plantation 2. Digging & filling of pit 3. Short term expt. on 'Root & Plant' vessels 4. Deficiency symptoms identification and discussion on INM in Sweet Orange 5. Different types of weeds observed in Sweet Orange ecosystem & their management (special topic) 6. Diseases of Sweet Orange (Phytophthora, die back etc.) & their management 7. Short study on leaf minor & leaf roller fruit fly 8. Short study on disease triangle 9. Short study on Phytophthora 10. Short study on Bordeaux Paste 11. Discussion on types of traps 12. Discussion insect zoo 13. Importance of growth hormones specially NAA & PPM preparation of solutions 	<ol style="list-style-type: none"> 1. Water Bridge 2. Longest Line 3. Balloon Bursting 4. Whisper Communication 5. Drawing Without Lifting Pen 	<ol style="list-style-type: none"> 1. AESA observations drawing & presentation (Two times) 2. Effect of pesticides on human health 3. Experimental learning cycle 4. Adult learning principals 5. FFS village visits (Two time) 6. Motivation skills 7. Practical preparation & application of Bordeaux paste 8. Difference between facilitator & Teacher (with Role Play)

III – Curriculum for 1st October – 20th October

Technical Input	Group Dynamic	Participatory Activities
<ol style="list-style-type: none"> 1. Short term experiment on water holding capacity 2. Special topic on methods of irrigation; their advantages & disadvantages, mulching method 3. Discussion on diff. types of Bahars' taken in Sweet Orange Identification of water stress 4. Basic entomology to understand insect pests 5. Short study on Aphid, White fly, Jassids, Thrips & Black fly 6. Short study on Earthworm 7. Special discussion on vermiculture, vermicompost & vermiwash 8. Certification of organic farming 9. Control of fruit cracking / drop 10. Green manuring in Sweet Orange 	<ol style="list-style-type: none"> 1. Pen in Bottle 2. Talat Malat 3. Blind Walk 4. Three 'G' 5. Musical Chair 	<ol style="list-style-type: none"> 1. AESA in newly planted, unmanaged & healthy gardens (Two time) 2. FFS village visit (Two times) 3. AESA decision follow up Facilitation skills 4. Communication skills 5. Practice FFS planning & preparation 6. Discussion on FFS visit feed back 7. Preparation B.D. compost, C.P.P. 8. Study tour visit to other ToF

IV. Curriculum for ToF for the period 1st December – 20th December

Technical Input	Group Dynamic	Participatory Activities
<ol style="list-style-type: none"> 1. Short study on fruit sucking moth in Sweet orange 2. Special discussion on drip irrigation 3. Short study on Citrus psylla Inderbella (Bark borer) Citrus mites 4. Special discussion on biofertilizer & biopesticides and their role in plant nutrients 5. Special discussion on Insecticides and their mode of actions 6. Special discussion on fungicides 7. Mid evaluation test of participants 8. Visit to orange orchard with specialist 9. Training & pruning in Sweet Orange 10. Different types of drainage system. Effect of bad drainage on Sweet Orange 	<ol style="list-style-type: none"> 1. Role Play 2. What do you see 3. Gibberish Language 4. Tying knot 5. Horse ridding and G. D. by participants 	<ol style="list-style-type: none"> 1. AESA (Two time) in selected three orchards 2. Practice FFS village visits (Two times) 3. AESA decision follow up 4. Public speaking skills 5. FFS feed backs (discussion) 6. Observations on AESA follow up activities

V. Curriculum for the period 5th Jan – 15th Jan

Technical Inputs	Group Dynamics	Participatory Activities / Skills
<ol style="list-style-type: none"> 1. Short term expt. On seed germination (To show the bad effect on root system of excessive irrigation) 2. Discussion on Ambiya Bahar in orange 3. Identifications maturity of fruits & quality parameters, TSS / Acidity / Acid sugar/Skin thickness/Colour 4. Marketing grading and handling of fruits 5. Discussion on orange processing 6. Short study on mulching 7. Methods of protection of small plants from high temperature 8. Post evaluation test 9. Field day 	<ol style="list-style-type: none"> 1. Tower building 2. Watch the face 3. Psychology of the farmers after loosing coins in water 4. Practice of Role Play 5. Role Play 	<ol style="list-style-type: none"> 1. AESA in three selected orchards 2. AESA decision follow up 3. Observation on AESA follow up activities 4. What is this? 5. What is that? (Non Formal Education) 6. Brain Storming 7. Participatory visit to fruit processing unit

Farmers Field School (FFS)

The third and crucial phase of the FFS project is actual implementation of Farmers Field School. Essentially the FFS is organized at the farmers field. Each FFS is of 20 days duration during which 20 field visits are organized. The field visits are coincided with the production cycle of the fruit crop. The period from harvest of previous crop upto the harvest of next crop is treated as production period. The FFS is also organized in newly planted orchards. The decision is based on the local needs. At the end of FFS a Field Day is organized.

The FFS approach include-

- On farm training on a staggered basis throughout growing season of a crop
- Experiments to draw desired learning on farm visits
- Observation of agro-ecosystems & its analysis (AESA)
- Enabling farmers to take up decisions based on AESA
- Elements of group dynamics
- Farmers are encouraged to become trainers and to form partnerships with
- Govt. agencies and NGOs for further spread of technologies

Objectives -

- To enable the growers observe and analyze the Agro-eco System existing at his farm
- To enable the growers to understand the concept & principles of Integrated Crop management in fruit crops
- To enable the growers to take decisions based on Agro-eco System Analysis (AESA)
- To enable the growers to execute the technological practices on his farm

Training Methodology -

- Participatory training
- Discovery based learning through small experiments and exercises.
- Experiential learning
- Field work
- Interactive learning
- Sharing of experiences.
- Case studies.
- Inputs by Scientists/ Course co-ordinator

Management of FFS

- **Facilitators**

The Facilitators who are trained through ToF programmes will be given responsibility to organize the Farmers Field Schools. Each facilitator will conduct two FFS simultaneously in a year.

- **Farmers' Fields**

The basic requirement of experiential learning during FFS is Farmer's field. It is proposed here to identify the orchards at different growth stages so as to save time. One of the orchards may preferably be belonging to Progressive growers and the other rather poorly managed.

Plan of Farmers Field Schools for Sweet Orange

Sr. No.	District	No. of Tahsils having dominant srea under Orange	No. of Facilitators	No. of FFS	No. of farmers
1	Aurangabad	6	6	6	180
2	Jalna	5	5	5	150
3	Beed	3	3	3	90
4	Latur	2	2	2	60
5	Nanded	3	3	3	90
6	Parabhani	6	6	6	180
Total		25	25	25	750

List of Tahsils where FFS for Sweet Orange are proposed

Sr. No.	Name of District	Name of Tahsil	Name of Facilitator
1	Aurangabad	1. Paithan 2. A'bad 3. Kannad 4. Sillod 5. Ganagapur 6. Phulambri	
2	Jalna	1. Jalna 2. Ghansawngi 3. Ambad 4. Badanapur 5. Partur	
3	Beed	1. Gewarai 2. Beed 3. Kej	
4	Latur	1. Ahmedpur 2. Latur	
5	Nanded	1. Mukhed 2. Nanded 3. Loha	
6	Parabhani	1. Purna 2. Parbhani 3. Pathari 4. Manwat 5. Palam 6. Gangakhed	

**Farmers Field School Programme under National Horticulture Mission
Curriculum for Farmers Field School (FFS) for Sweet Orange**

FFS No.	Month	8.00–9.00 AM	9.00-10.00AM	10.00-10.15	10.15-10.30	10.30-11.30	11.30-12.30
FFS-1	June (First fortnight)	Pre-programme discussion with farmers and village leaders about FFS and listing of 25 farmers.	Concept of FFS, objectives, benefits and Training methodology	Tea break	Group dynamic (Introduction by chain method)	1.Selection of field and farmers for new plantation 2.Selection of sick orchard and one healthy orchard for study	Visit to selected field with farmers.
FFS-2	June (Second fortnight)	Grouping of farmers in to 2 or 4 groups by animal sound and give them fruit crop name.	Analysis of problems faced by the farmers in fruit garden.	Tea break	B.B.T. (Ballot box test) pre-evaluation	Types of soils and ideal soils for fruit crop.	Drawing of soil sample for testing and discussion on report. Discussion varieties of sweet lime/orange.
FFS-3	July (First fortnight)	1) Method of Plantation (Digging & filling of pit.) 2) AESA in old orchard	Drawing presentation & discussion Deficiency symptoms identification and remedy. (Practical spray)	Tea break	G.D. water bridge	Short term experiment “Root & Plant Vessels.” & Ill effects of pesticides on human health.	Special topic on different types of weeds and their management by different methods.
FFS-4	July (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Longest line	Short study on leaf minor & leaf roller.	Diseases of orange and their management.
FFS-5	August (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Balloon bursting	Short term expt. On water holding capacity.	Study on different methods of irrigation and their advantages & dis-advantages.
FFS-6	August (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Whisper communication	Short study on NSKE and practical preparation	Discussion different type of Bahars in sweet orange and Hasta bahars.
FFS-7	September (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Drawing without pen.	Short study on Fruit Sucking moth.	Special discussion on drip irrigation.

FFS No.	Month	8.00–9.00 AM	9.00-10.00AM	10.00-10.15	10.15-10.30	10.30-11.30	11.30-12.30
FFS-8	September (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Talat malat	Short study on citrus psylla and Aphid.	Discussion on Bio-fertilizer & bio-pesticides and their roll in plant ecosystem.
FFS-9	October (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. pen in bottle	Short term experiment - Seed germination	Study on types of pesticides and their mode of actions.
FFS-10	October (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Blind walk	Short study on citrus white & black fly.	Importance of growth hormones specially N.A.A.
FFS-11	November (first fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Musical chair.	Short study on (Bark borer)	Discussion on insect zoo.
FFS-12	December (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Three 'G'.	Short study on Earthworm	discussion on Vermi culture Vermicompost, Vermiwash etc.
FFS-13	December (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. or Role Play.	Short study on Phytophthora disease.	Special practical on preparation of bordopaste & application
FFS-14	January (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. what do you see?	Discussion on Ambiya Bahar.	Marketing, grading and handling of fruits.
FFS-15	January (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. or Role play	Short study on fruit fly.	Discussion on different types of traps, light trap and trap crop.
FFS-16	February (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Gibrish language	Short study on citrus mites. Nature of damage & management practices.	Discussion on fruit processing or visit to fruit processing unit.

FFS No.	Month	8.00–9.00 AM	9.00-10.00AM	10.00-10.15	10.15-10.30	10.30-11.30	11.30-12.30
FFS-12	December (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Three 'G'.	Short study on Earthworm	Special discussion on Vermi culture Vermicompost, Vermiwash etc.
FFS-17	February (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Tieing knot.	Short study on Jassids & thrips damage & management.	Diseases of citrus fruit crop and their management.
FFS-18	March (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Show the psychology after loosing coins & water	Short study on mulching of fruit trees.	Intercultural operation & its importance.
FFS-19	March (Second fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Tower building	Pruning technique in old orchards.	Methods of protection of small plants by hot temperature.
FFS-20	April (First fortnight)	AESA in Three orchards (New, old, healthy)	Drawing presentation & discussion	Tea break	G.D. Watch the face.	Short study on biopesticides viz. Tricoderma production.	Inter cropping in citrus viz. cowpea soyaben for conservation of friendly insects.
FFS-21 (Field day)	April (Second fortnight)	Discussion on Bahar treatment for mrug bahar.	Review of FFS	FFS-21 (Field day)			

Model Calendar of Work

District - Amravati

Course Code: AMROT-01

Title: Phytophthora Control in Orange

- Target group: Orange growers
- Duration: Two days
- Month: September - October
- Venue: District Training Center/ Agropolyclinic / KVK /ARS/ NRC/ SAU Farm/ Progressive Farmers' Orange orchard

Objectives

- To develop understanding about causes & symptoms of Phytophthora disease in Orange
- To develop knowledge & skill in pruning of decayed roots & dried branches
- To develop knowledge & skill in application of Redomil & Bordeaux paste

Course Content

- Symptoms of Phytophthora
- Causes of Phytophthora
- Pruning of shoots
- Digging of Beds
- Pruning of roots
- Drenching with Ridomeal
- Application of neem cake, biopesticide & biofertilizers
- Application of Bordeaux paste
- Drenching of Bordeaux Mixture
- Irrigation methods to prevent Phytophthora

Training Plan

Session	Time (min.)	Topic	Training Method	Training Aids	Resource Person	Place
Day 1						
	09.00-09.30	Registration, Inauguration	-	-	SDAO/ TAO/ TO	
	09.30- 09.45	Icebreaking, Pre evaluation	-	-	Course Coordinator	Training Hall
I	09.45- 10.45	Symptoms & Causes of Phytophthora	Interactive Lecture, Demonstration	Chart, Photograph, CD/ Film	Scientists from SAU, KVK	Farm
	10.45- 11.00	Tea				
II	11.00- 13.00	Pruning of shoots	Demonstration	-	Master Trainer	Farm
	13.00- 13.30	Lunch				
III	13.30- 14.30	Digging of Beds	Demonstration, Hands on exercise	-	Master Trainer	Farm

Session	Time (min.)	Topic	Training Method	Training Aids	Resource Person	Place
IV	14.30- 15.30	Pruning of roots	Demonstration, Hands on exercise	-	Master trainer	Farm
	15.30- 15.45	Tea	-			
V	15.45- 16.45	Drenching with Ridomeal	Demonstration, Hands on exercise	-	Master trainer	Farm
VI	16.45- 17.30	Preparation of Bordeaux Paste (Soaking of ingredients)	Demonstration, Hands on exercise	-	Master trainer	Farm
	17.30	Consolidation of Learning			Course Coordinator	
	18.00	Close				
Day 2						
	09.00-09.30	Recap of Day1	-	-	Course Coordinator	-
VII	09.30- 10.45	Preparation of Bordeaux Paste & B. Mixture	Demonstration, Hands on exercise	-	Master trainer	Farm
	10.45- 11.00	Tea				
VIII	11.00- 13.00	Application of Bordeaux Paste to stem	Demonstration, Hands on exercise	-	Master trainer	Farm
	13.00- 13.30	Lunch				
IX	13.30- 14.30	Application of neem cake, biopesticide & biofertilizers covering the roots	Demonstration, Hands on exercise	-	Master trainer	Farm
X	14.30- 15.30	Drenching of Bordeaux Mixture to root zone	Demonstration, Hands on exercise	-	Master trainer	Farm
	15.30- 15.45	Tea				
XI	15.45- 17.00	Irrigation Methods to prevent Phytophthora	Demonstration	-	Master trainer	Farm
	17.00-17.15	Course Evaluation	-	-	Course Coordinator	-
	17.15- 17.30	Concluding	-	-	SDAO/ TAO/ TO	-

- Training Material required: Implements for digging of beds, sand paper to scrap the gum, water, wooden stick, copper sulphate, lime, neem cake, biopesticide (*Trichoderma* spp.) biofertilizers (PSB) litmus paper, etc.

Course Code: AMROT-03

Title: Rejuvenation of Declined Orchards

- Target group: Orange growers who have applied for rejuvenation
- Duration: One day
- Month: September to December
- Venue: District Training Center/ Agropolyclinic / KVK / Progressive Farmers' Old Orange orchard

Objectives

- To develop knowledge and skill in effective pruning of Orange trees
- To motivate farmers to adopt rejuvenation practices for old gardens

Course Content

- Pruning
- Application of fertilizers
- Plant protection
- Preparation of Bordeaux Paste & use
- Time of pruning

Training Plan

Session	Time (min.)	Topic	Training Method	Training Aids	Resource Person	Place
	09.00-09.30	Registration, Inauguration	-	-	SDAO/ TAO/ TO	
	09.30- 09.45	Icebreaking, Pre evaluation	-	-	Course Coordinator	Training Hall
I	09.45- 10.45	Need for Rejuvenation	Interactive Lecture, Demonstration	Chart, Photograph, CD/ Film	Scientists from SAU, KVK	Training Hall
	10.45- 11.00	Tea				
II	11.00- 13.00	Pruning Technology	Demonstration	-	Master Trainer	Field
	13.00- 13.30	Lunch				
III	13.30- 14.30	Application of Fertilizers	Demonstration, Hands on exercise	-	Master Trainer	Field
IV	14.30- 15.30	Application of Fertilizers	Demonstration, Hands on exercise	-	Master Trainer	Field
	15.30- 15.45	Tea	-			
V	15.45- 16.45	Preparation of Bordeaux Paste	Demonstration	-	Master Trainer	Field
VI	16.45- 17.30	Application of Bordeaux Paste	Demonstration, Hands on exercise	-	Master Trainer	Field
	17.30-17.45	Course Evaluation	-	-	Course Coordinator	-
	17.45- 18.00	Concluding	-	-	SDAO/ TAO/ TO	-

- Training Material: Secator, saw, fertilizer, CuSo4, Lime, Brush, water etc.

Proforma I

(To be filled in by trainee before start)

Pre Training Evaluation

- Title of the course _____
- Duration _____, Period _____
- Name of Trainee _____, Village _____
- Age _____, Education _____,
- Experience in Training _____, Land Holding _____
- Address: _____

1. Practice-wise Knowledge, Skill and Adoption

Sr. No.	Practice/ Subject to be covered in training	Knowledge			Skill			Adoption Yes/ No
		1	2	3	1	2	3	

(Note: 1-Low, 2-Moderate, 3- High)

2. Immediate needs of training with regard to subject to be taught

3. Expectations from the training course

Signature

Proforma II

(To be filled in after training)

Post Training Evaluation

- Title of Course _____
- Period _____
- Name of Trainee _____

Coverage and utility of training contents.

Sr. No.	Subject Taught	Practical Utility			Coverage		
		MU	U	NU	WC	PC	NC

(Note : MU- Most Useful, U- Useful, NU- Not useful, WC- Well Covered, PC- Partially Covered, NC- Not Covered)

Opinion about auxiliary aspects -

- Lodging - Satisfactory / Unsatisfactory
- Boarding - Satisfactory / Unsatisfactory
- Transport- Satisfactory / Unsatisfactory
- Classroom teaching- Satisfactory / Unsatisfactory
- Use of AV Aids- Satisfactory / Unsatisfactory
- Reading material- Satisfactory / Unsatisfactory
- Conduct of Demo/practical/Field visits- Satisfactory / Unsatisfactory
- Punctuality in conducting programme- Punctual/ Unpunctual
- Suggestions for future :

Signature

List of Training Institutions, SAUs Agricultural Research Stations and Krishi Vigyan Kendra (KVKs)

Sr. No.	Name and Address of Research Station & Designation of the Head	Contact No.
1	Associate Director, National Agril. Res. Project, Aurangabad	(0240)2376236
2	Central Nursery Scheme, MAU, Parbhani	(02452)220425
3	Senior Res. Officer, Vegetable & Onion Res. Center, Parabhani	
4	In charge, Tissue Culture Center, Parabhani	
5	In charge, Fruit Research Station, Himayatbag, Aurangabad	(0240) 2392077, 2322720
6	In charge, Custard Apple Research Station, Ambejogai	
7	Prog. Co-ordinator, KVK, Aurangabad	(0240) 2376558
8	Prog. Co-ordinator, KVK, Tuljapur, Dist. Usmanabad	(02471) 243275, 242060
9	Prog. Co-ordinator, KVK, Didayal Shodh Sansthan, Ambejogai	(02446)258552, 258557
10	Prog. Co-ordinator, KVK, Sant Namadeo Sevabhavi Sanstha, Hingoli	(02455)248393, 248493
11	Prog. Co-ordinator, KVK, Marathwada Sheti Sahaya Mandal, Jalna	(02482)235586, 238266
12	Prog. Co-ordinator, KVK, Jawaharlal Nehru Institute of Education Science, Technological Res. Trust, Nanded at Pokharni	(02462)270115
13	Prog. Co-ordinator, KVK, Jeevan Jyot Charitable Trust, Parbhani	(02452)223045
14	Prog. Co-ordinator, KVK, Manjara Charitable Trust, Latur	

List of Agro Polyclinics

Sr. No.	District	Place of Agropolyclinic
1	Aurangabad	1 Sillod
		2 Vaijapur
		3 Narsingpur
		4 Galleborgaon
		5 Paithan
		6 Dhanvat
2	Jalana	1 Patharvala
		2 Samangaon
		3 Bhokardan
		4 Kendhali
3	Beed	1 Majalgaon
		2 Jalgaon
		3 Bindusara
		4 Kej
4	Latur	1 Chakur
		2 Nilanga
		3 Ausa
5	Nanded	1 Dhanegaon
		2 Kasarali
		3 Deglur
		4 Ratoli
		5 Bhokar
		6 Paradi
		7 Manatha
		8 Mukhed
6	Parabhani	1 Basmat
		2 Gangakhed
		3 Hingoli
		4 Jintur
		5 Parabhani
		6 Chikhalthana