

Implementation Guidelines

REJUVENATION AND CANOPY MANAGEMENT GUIDELINES

Objective:

- To increase the production and productivity of orchards of more than 25 years old by removal of old unproductive / senile trees and replanting with fresh planting material / rejuvenating the old and senile orchards with appropriate and integrated combination of inputs, pruning / grafting techniques.
- To regulate the shape and growth of tree.
- To Maximize the productivity with quality fruit production
- To reduce the pest and disease incidence which will reduce the cost of cultivation of fruits crops and reduction in usage of chemical pesticides and fungicides.

Non-negotiable:

- District Horticulture Mission should ensure that Rejuvenation programme to be implemented on cluster approach in a contiguous area, instead of doing it in scattered & unplanned manner. This approach will help in providing both backward and forward linkages and enable the Dept., to do effective extension service.
- Minimum area per each block should be above 10 Ha.
- New clusters & new beneficiaries shall be selected under these programmes as per locations specific crops.
- The assistance under these components shall not be extended to the beneficiaries already covered during previous years. The ADHs & HOs should be cautious while selecting the beneficiaries.
- The beneficiary selection need to be done in most transparent manner by conducting Gramasabhas and the list should invariably be approved by District Horticulture Mission.
- Coverage of SC/ST & Women farmers as per the prescribed ratio is minimum mandatory requirement under these components.

- Horticulture Officers of the concerned area should obtain applications from beneficiaries along with photograph of self and without plantation in the existing format prescribed.
- The farmers who are having assured source of irrigation and power supply are eligible.
- Land holding of the farmers should be certified by Horticulture Officers on the basis of the original Pattadar pass book or Adangal signed by MRO.
- The HO concerned should maintain Register for recording the details of identified beneficiaries i.e. land details/crop/variety/source of plant material/ date of planting /inputs supplied/non subsidy particulars etc.
- Photographs of orchards along with farmers before and after Rejuvenation/Canopy Management/Top Working etc. should be maintained by the HO concerned. The same copies to be made available in the ADH office
- ADH should ensure to submit the photographs (soft copies) of the beneficiary's fields before and after Rejuvenation/Canopy Management/Top Working to the SHM Cell/State Plan Cell without fail.
- ADH shall organize training programmes to the beneficiaries identified under Rejuvenation, on selection of Training & Pruning, quality plant material, discarding of plant material affected by virus, pests and diseases, deficiencies of micro nutrients etc.
- Selection and documentation process should be completed in a time bound manner and seasonality must be adhered to, taking up rejuvenation activities.
- The ADH should take approval of DMC for the selected beneficiaries.
- ADH should ensure for proper documentation of various steps (viz., land preparation/ pitting, planting & installation of micro irrigation system etc. along with necessary photographs) by the HOs/ADH concerned under Rejuvenation.
- The supply of garden tools under rejuvenation for the year 2016-17 should be done through empanelled companies approved by A.P. Agros.
- The assistance will be provided to the beneficiaries through online transfer .

S.No	Item	Max. Permissible Cost	Pattern of Assistance
1	Rejuvenation / replacement of senile plantation, canopy management	Rs. 40,000/ha	50% of the total cost subject to a maximum of Rs. 20,000/ha limited to two ha per beneficiary.

CRITERIA FOR SELECTION OF GARDENS FOR REJUVENATION PROGRAMME

- Unproductive gardens owing to local varieties
- Senile & neglected gardens
- Pest & disease infected plants
- Garden with less number of trees per unit area with poor production
- Age of the gardens for implementations and rejuvenation of programmes

S.No	Crop	Age of the Tree	
		Rejuvenation	Canopy Management
1	Mango	>20 years	> 5 years - 20 years
2	Cashew	>20 years	> 5 years - 20 years
3	Citrus	>8 years	Above 5 years to 8 years
4	Guava	>8 years	Above 5 years to 8 years

**CROP PARAMETERS TO BE FOLLOWED FOR REJUVENATION/ CANOPY
MANAGEMENT**

MANGO

- 1) Gap filling with suitable varieties
- 2) Canopy Management (can be done in 3 types)
 - i) Bushy types are to be provided with proper aeration and ventilation by removal of dead, diseased, drooping & crisis cross branches, in case of gardens where there is poor light penetration.
 - ii) Lanky trees with more wood has to be deheaded by way of pollarding.
 - iii) Unproductive with local variety trees have to be top-worked.
- 3) Application of Bordeaux paste/copper based fungicides to cut ends.
- 4) Preparation of Basins.
- 5) Timely application of manures (FYM/Neem-cake/vermin compost/fertilizers) as per recommendation.
- 6) Trimming of new fresh keeping 4-5 branches covering all sides to attain dome shape tree.
- 7) Cultivation of inter crop like Sun hemp and Diancha to improve soil fertility and to arrest weeds.
- 8) Plant protection measure to be taken up as and when necessary.

CITRUS CROP /ACIDLIME/SWEET ORANGE:

1. Removal of diseased, dead and dried branches.
2. Spraying of Bordeaux mixture or any copper fungicide.
3. Bahar treatment for crop regulation
4. Preparation of basins and timely application of manures (FYM/Neem-Cake / Vermicompost) and fertilizers as per recommendation.
5. Combined micro-nutrients sprays at 15 days interval on newly emerging leaves to correct the deficiencies of different elements.
6. Plant Protection measures to be taken up as and when necessary.

CASHEW

- 1) Gap filling with suitable variety
- 2) Canopy Management by removal of dead, diseased, drooping & criss-cross branches, for proper light penetration.
- 3) Application of Bordeaux paste/copper based fungicides to cut ends.
- 4) Preparation of Basins.
- 5) Timely application of manures (FYM/Neem-cake/vermin compost/fertilizers) as per recommendation.
- 6) Cultivation of inter crop like Sun hemp and Diancha to improve soil fertility and to arrest weeds.
- 7) Plant protection measure to be taken up as and when necessary.
- 8) Selected/identified cashew gardens are to be taken care for avoiding stem borer by applying protection measures.

GUAVA

- 1) Gap filling with suitable variety.
- 2) Canopy management by removal of dead, diseased, drooping & crisscross branches for proper light penetration.
- 3) Application of Bordeaux paste / copper based fungicides to the cut-ends.
- 4) Preparation of basins.
- 5) Timely application of manures (FYM/Neem-Cake/Vermicompost) & fertilizers as per the recommendation.
- 6) Bahar treatment for crop regulation.
- 7) Plant Protection measures to be taken up as and when necessary

IMPLEMENTATION PROCEDURE FOR REJUVENATION PROGRAMMES

- Under Rejuvenation Programme the assistance for the components like Plant material, inputs like PP chemicals plant growth regulators, micro nutrients etc will be done in the form of cash through online transfer to the beneficiarie.
- Area proposed for Rejuvenation/ Canopy Management programmes shall invariably be identified by a Committee consisting of ADH, H.O. and local scientists of Agriculture / Horticulture University (ARS / KVK).
- The villages where there are large areas of old unproductive & senile Mango/Citrus crop (Acid lime/Sweet orange)/Guava/Cashew plantations exists should be selected for Rejuvenation programmes.
- Identified area shall be in a cluster mode.
- Minimum of 10 Ha. in single area / village.
- The assistance of Rejuvenation programmes shall not be extended for those plantations which are in scattered area.
- Depending on the target and the interest of the farmers, area will be selected purely based on merits of the case.
- Farmers identified for rejuvenation in a village should be organized into common interest groups to take forward the initiative beyond one year as this will facilitate capacity building through training.
- Before finalizing the beneficiaries, AD(H) should get satisfied with the interest and conviction of the farmer on the concept and need for rejuvenation. Only those farmers are to be selected who come forward to take up pruning, basin formation, application of Bordeaux paste and other such activities with their own cost.

Time frame for taking up rejuvenation

S.No	CROP	MONTH
1	Mango	June
2	Citrus	August
3	Cashew	June
4	Guava	June

- ADH should ensure to conduct a basic data survey for recording where Rejuvenation/ Canopy Management is proposed to be taken up

1	Name of the Farmer	8	Age of the Garden
2	Father's / Husband's Name	9	Extent Proposed for Rejuvenation/ Canopy Management (Ha.)
3	Village	10	No. of Trees existing in the garden proposed for Rejuvenation/ Canopy Management
4	Mandal	11	No. of gaps identified for gap filling
5	Category	12	Yield status of the crop during last year
6	Survey No.	13	Recommended technique (Canopy Management)
7	Total Extent Ha.	14	No. of trees proposed for Canopy Management

- Intensive awareness and capacity building through audio visual aids and village level farmers workshop should precede actual implementation of Rejuvenation/ Canopy Management Programmes. Training / Awareness budgets given to the districts should be dovetailed to this purpose.
- **Field level training program shall be conducted to all the identified beneficiaries on the mode & sequence of events of Rejuvenation/ Canopy Management with the help of resource persons / experienced progressive farmers. If required, the farmers shall be taken to the fields / villages where rejuvenation programme is successfully implemented due to which productivity is increased.**
- Since the targets are relatively less under this program, preference shall be given to small and marginal farmers in the order of priority to SC/ST/women/ others.
- Horticulture Officer should maintain a register for rejuvenation in which details of assistance provided under MIDH, item-wise, to be recorded.
- Rejuvenation is an integrated component and ADHs shall strive to implement the program in totality and in holistic manner and not in bits & pieces.

- The H.O.s should take the photographs of the orchards to be rejuvenated (crop-wise) in three stages as detailed below and should submit the same to SHM Cell through ADH for documentation purpose.
- The HO.s should also collect the yield data and the impact of the rejuvenation programmes from the farmers and submit to SHM Cell through ADH.
 - Before taking up the rejuvenation
 - During rejuvenation (different stages)
 - Orchards in bearing conditions after rejuvenation.
- The ADHs should record the success stories of the rejuvenation programme in their district as the same has to be submitted to NHM, GOI, every year and the same to be depicted at HRCs.

PATTERN OF ASSISTANCE FOR ONE HECTARE OF MANGO CROP UNDER REJUVENATION

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
1	Plant material for gap filling 20% of 178 plants i.e. 36 plants per Ha @ Rs 30/- per graft	1080	540
2	Farm Yard Manure	12500	6250
3	ORGANIC MANURES		
	Vermicompost / City compost	5000	2500
	De-oiled Neem Cake	2170	1085
4	Inorganic Fertilizers	5000	2500
5	Micronutrient*	5000	0
6	Plant protection chemicals	5000	2500
7	Plant growth regulators	1250	625
8	Supply of implements (1 long reach pruner and 1 No. Folding Hand Saw compulsory and Harvester)	3000	1500
	TOTAL	40000	17500

* The MARKFED is supplying micro nutrients on 50% subsidy provided by Agriculture department through PACS. Hence farmers may be advised to take micro nutrients from PACS concerned.

PATTERN OF ASSISTANCE FOR ONE HECTARE OF CASHEW CROP UNDER REJUVENATION

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
1	Plant material for gap filling 20% of 150 plants i.e. 30 plants per Ha. @ Rs.30/- per graft	900	450
2	Farm Yard Manure	5000	2500
3	ORGANIC MANURES		
	Vermicompost / City compost	3800	1900
	De-oiled Neem Cake	1200	600
4	Inorganic Fertilizers	2000	1000
5	Plant protection chemicals	4000	2000
6	Supply of implements (1 long reach pruner and 1 No. Folding Hand Saw compulsory)	3100	1550
	TOTAL	20000	10000

PATTERN OF ASSISTANCE FOR ONE HECTARE OF CITRUS CROP UNDER REJUVENATION

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
1	Plant material for gap filling 20% of 278 plants i.e. 56 plants per Ha @ Rs 8/- per plant	1960	980
2	Farm Yard Manure	7000	3500
3	ORGANIC MANURES		
	Vermicompost / City compost	7000	3500
	De-oiled Neem Cake	3800	1900
4	Inorganic Fertilizers	8000	4000
5	Micronutrient*	5240	0
6	Plant protection chemicals	4000	2000
7	Supply of implements (1 long reach pruner and 1 No. Folding Hand Saw compulsory)	3000	1500
	TOTAL	40000	17380

* The MARKFED is supplying micro nutrients on 50% subsidy provided by Agriculture department through PACS. Hence farmers may be advised to take micro nutrients from PACS concerned.

PATTERN OF ASSISTANCE FOR CITRUS PER HECTARE UNDER CANOPY MANAGEMENT				
S.NO	COMPONENTS	ESTIMATED COST (RS.)	DEPARTMENT SHARE (Rs.)	FARMERS SHARE (Rs.)
1	Organic Manure (Vermi Compost)	1500	750	750
2	Chemical Fertilizers	3000	1500	1500
3	Plant Protection Chemicals	2500	1250	1250
4	Pruning and Cutting inclusive of 1 no's one folding hand saw and 1 no of long reach pruner compulsory	5000	2500	2500
	Total	12000	6000	6000

PATTERN OF ASSISTANCE FOR CASHEW PER HECTARE UNDER CANOPY MANAGEMENT				
S.NO	COMPONENTS	ESTIMATED COST (RS.)	DEPARTMENT SHARE (Rs.)	FARMERS SHARE (Rs.)
1	Organic Manure			
	Vermi Compost	900	450	450
2	Chemical Fertilizers	3100	1550	1550
3	Plant Protection Chemicals	2000	1000	1000
4	Pruning and Cutting inclusive of 1 no's one folding hand saw and 1 no of long reach pruner compulsory	6000	Rs. 3000 maximum (towards equipment on 50% assistance)	3000 (towards labour charges)
	TOTAL	12000	6000	6000

PATTERN OF ASSISTANCE FOR GUAVA PER HECTARE UNDER CANOPY MANAGEMENT				
S.NO	COMPONENTS	ESTIMATED COST (RS.)	DEPARTMENT SHARE (Rs.)	FARMERS SHARE (Rs.)
1	Organic Manure (Vermicompost)	1500	750	750
2	Chemical Fertilizers	3500	1750	1750
3	Plant Protection Chemicals	1000	500	500
4	Pruning and Cutting inclusive of 1 no's one folding hand saw, 1 no of long reach pruner and 1 no secateurs compulsory	6000	Rs. 3000 maximum (towards equipment on 50% assistance)	3000 (towards labour charges)
	Total	12000	6000	6000

PATTERN OF ASSISTANCE FOR COCOA PER HECTARE UNDER CANOPY MANAGEMENT				
S.NO	COMPONENTS	ESTIMATED COST (RS.)	DEPARTMENT SHARE (Rs.)	FARMERS SHARE (Rs.)
1	Organic Manure (Vermicompost)	1500	750	750
2	Chemical Fertilizers	3500	1750	1750
3	Plant Protection Chemicals	1000	500	500
4	Pruning and Cutting inclusive of 1 no's one folding hand saw, 1 no of long reach pruner and 1 no secateurs compulsory	6000	Rs. 3000 maximum (towards equipment on 50% assistance)	3000 (towards labour charges)
	Total	12000	6000	6000

PATTERN OF ASSISTANCE FOR MANGO PER HECTARE UNDER CANOPY MANAGEMENT				
S.NO	COMPONENTS	ESTIMATED COST (RS.)	DEPARTMENT SHARE (Rs.)	FARMERS SHARE (Rs.)
1	Organic Manure (Vermicompost)	1500	750	750
2	Chemical Fertilizers	3500	1750	1750
3	Plant Protection Chemicals	1000	500	500
4	Pruning and Cutting inclusive of 1 no's one folding hand saw, 1 no of long reach pruner and 1 no secateurs compulsory	6000	Rs. 3000 maximum (towards equipment on 50% assistance)	3000 (towards labour charges)
	Total	12000	6000	6000

PATTERN OF ASSISTANCE FOR POMEGRNATE PER HECTARE UNDER CANOPY MANAGEMENT				
S.NO	COMPONENTS	ESTIMATED COST (RS.)	DEPARTMENT SHARE (Rs.)	FARMERS SHARE (Rs.)
1	Organic Manure (Vermicompost)	1500	750	750
2	Chemical Fertilizers	3500	1750	1750
3	Plant Protection Chemicals	1000	500	500
4	Pruning and Cutting inclusive of 1 no's one folding hand saw, 1 no of long reach pruner and 1 no secateurs compulsory	6000	Rs. 3000 maximum (towards equipment on 50% assistance)	3000 (towards labour charges)
	Total	12000	6000	6000

Crop wise Input packages recommended by the Technical Committee for Rejuvenation Programme is given below:

RECOMMENDED INPUT PACKAGE (PER HECTARE) FOR REJUVENATION / TOP WORKING PROGRAMMES 2016-17

Name of the Crop: Mango

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 50 Kgs per plant	Tones		8.9
	Vermicompost / City Compost @ 5 Kgs per plant	Kgs	40 Kg	890
	De-Oiled Neem Cake @ 2.0 Kgs per Plant	Kgs	40 Kg	356
II	Inorganic Fertilizers			
	S.S.P. @ 5 kg/plant	Kgs	50 Kg	890
	Urea @ 2 kg/plant	Kgs	50 Kg	356
	M.O.P. @ 1.5 kg/plant	Kgs	50 Kg	267
III	Micronutrients			
	Formula - 4	Kgs	Kg	20
	Formula - 7	Kgs	10 Kg	50
	13:00:45	Kgs	500 gr	5
IV	Plant Protection Chemicals			
	Chlorpyriphos 20% EC	Ltrs	500 ml	2
	Dichlorovas 76% EC	Ltrs	500 ml	1
	Carbendazim 50% EC	Kgs	500 gr	1.5
	C.O.C. 50% WP	Kgs	500 gr	5.3
V	Bio pesticides			
	<i>Verticilliumlecanii</i> WP	Kgs	500 gr	2.5

Name of the Crop: Citrus

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 50 Kgs per plant	Tones		12.5
	Vermicompost / City Compost @ 4 Kgs per plant	Kgs	40 Kg	1000
	De-oiled Neem Cake @ 2 Kg per plant	Kgs	50 Kg	500
II	Inorganic Fertilizers			
	S.S.P. @ 2.4 kg/plant	Kgs	50 Kg	600
	Urea @ 1.6 kg/plant	Kgs	50 Kg	400
	M.O.P. @ 1.0 kg/plant	Kgs	50 Kg	250
III	Micronutrients			
	Formula - 4	Kgs	Kg	20
IV	Plant Protection Chemicals			
	Profenophos 50% EC / Trizophos 40% EC	Ltrs	500 ml	1
	Propergite 57% EC	Ltrs	500 ml	1
	Metalaxyl 8% + Mancozeb 64% WP	Kgs	500 gr	1
	C.O.C. 50% WP	Kgs	500 gr	7.5
	Streptocycline 10%	grms	6 gr	54
	Sticking Agent	Ltrs	500 ml	2
V	Bio Pesticides			
	<i>Trichoderma viride</i> / <i>T. harzianum</i>	Kgs	Kg	20
	<i>Pseudomonas fluorescens</i> 1x10 ¹⁰ cfu/gm	Kgs	Kg	20

Name of the Crop: Guava

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 20 Kgs per plant	Tones		8.0
	Vermicompost / City Compost @ 3 Kgs per plant	Kgs	40 Kg	1200
	De-oiled Neem Cake @ 1 Kg per plant	Kgs	50 Kg	400
II	Inorganic Fertilizers			
	S.S.P. @ 1.25 kg/plant	Kgs	50 Kg	500
	Urea @ 1.085 kg/plant	Kgs	50 Kg	434
	M.O.P. @ 0.850 kg/plant	Kgs	50 Kg	340
III	Micro-nutrients			
	Formula - 4	Kgs	Kg	20
IV	Plant Protection Chemicals			
	Chlorpyrifos 20% EC	Ltrs	500 ml	1
	Dichlorovas 76% EC	Ltrs	500 ml	1
	Mancozeb 7.5% WP	Kgs	500 gr	1
	C.O.C. 50% WP	Kgs	500 gr	1
	Sticking Agent	Ltrs	500 ml	2
V	Bio Pesticides			
	<i>Trichoderma viride</i> / <i>T. harzianaum</i>	Kgs	Kg	7.5
	<i>Pseudomonas fluorescens</i> 1x10 cfu/gm	Kgs	Kg	7.5

Name of the Crop: Cashew

Sl. No	Recommended Inputs	Unit	Packin g size	Recommende d Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 50 Kgs per plant	Tone s		8
	Vermicompost / City Compost @ 5 Kgs per plant	Kgs	40 Kg	750
	De-Oiled Neem Cake @ 1 Kg per plant	Kgs	50 Kg	150
II	Inorganic Fertilizers			
	S.S.P.	Kgs	50 Kg	110
	Urea	Kgs	50 Kg	250
	M.O.P.	Kgs	50 Kg	30
IV	Plant Protection Chemicals			
	Chlorpyriphos 20% EC	Ltrs	500 ml	1
	Dichlorovas 76% EC	Ltrs	500 ml	1
	C.O.C. 50% WP	Kgs	500 gr	1
	Sticking Agent	Ltrs	500 ml	2.5
V	Bio Pesticides			
	<i>Beauveria bassiana</i> 1x10 cfu/gm	Kgs	500 gr	2.5
	Azadirachtin 10000 ppm	Ltrs	500 ml	1