

TF(2) 4650/2021

Directorate of Agriculture Development
& Farmer's Welfare, Vikas Bhavan,
Dated: 13.12.2021

CIRCULAR

Sub: Annual Plan 2021-22 - Scheme on " Soil and Root Health Management and Productivity Improvement"-Root Health Management practices- Working Instructions issued - Reg

Ref: 1. G.O (Rt) No. 634/17/AD dated 23.06.2017

2. Order No. ADFW/3161/2020-TP2 dated: 23.04.2021 of the Director of Agriculture

As per the reference 1st cited, Government have accorded administrative sanction for the implementation of the scheme 'Soil and Root Health Management and Productivity Improvement' during the year 2017-18.'. As per reference 2nd cited above, continuous sanction has been accorded for implementation of the component Root Health Management Practices during 2021-22 for an amount of Rs. 25 lakh from the total budget outlay of Rs. 3050 lakh set apart for " Soil and Root Health Management and Productivity Improvement" under the H/A 2401-00-800-28 Plan:

Objectives

- To introduce the concept of Root Health Management
- To promote cultural practices to support root development and growth like seed treatment using biofertilizers and biopesticides
- Application of Trichoderma
- Use of Vesicular Arbuscular Mycorrhizae (VAM)
- Application of Phosphate Solubilizing Bacteria (PSB)
- Organic manure application
- Plant Growth Promoting Rhizobacteria(PGPR)

Programmes

Two components are included under the component Root Health Management Practices, viz., providing assistance for application of biofertilizers/biopesticides and Establishment of On farm Production Units of Vesicular Arbuscular Mycorrhizae (VAM).

1. Providing assistance for application of biofertilizers/biopesticides:

To support root development and growth, cultural practices to support root development and growth like seed treatment using biofertilizers and biopesticides, application of Trichoderma, use of Vesicular Arbuscular Mycorrhiza (VAM), application of Phosphate Solubilizing Bacteria (PSB), Organic manure application, Plant Growth-Promoting Rhizobacteria (PGPR) etc. Assistance @ 50% will be provided for the cost of inputs for the above practices. The inputs shall be purchased from approved sources like laboratories/farms under Department of Agriculture, Kerala Agricultural University, Central Government Institutions and approved private agencies so that the end users are not cheated through supply of spurious materials. Assistance @ 75% for labour charge required for mixing of biofertilizers / biopesticides with suitable medium (eg. Trichoderma with Farm Yard manure/ cow dung) and for soil application will also be provided.

Assistance provided:

Under the scheme, 50% assistance is to be provided on the cost of biofertilizers and biopesticides for each crop as per Package of Practices recommendations. Assistance @ 75% can also be provided for labour charge required for mixing of biofertilizers/biopesticides with suitable medium (eg. Trichoderma with Farm Yard Manure/cowdung) and for soil application. The financial outlay for this programme is Rs. 10 lakh, which can be met from the budget provision earmarked for the scheme 'Soil and Root Health Management and Productivity Improvement 2021-22' under the head of account 2401-00-800-28 Plan.

2. Establishment of On farm production units of Vesicular Arbuscular Mycorrhizae (VAM):

Two hundred numbers of Onfarm production units of Vesicular Arbuscular Mycorrhizae (VAM) are to be established in the State. The units established in a block should meet the VAM requirement of all grama panchayats in that block. Onfarm production units of VAM are to be established in selected Krishibhavans. Mass production of VAM should be taken up by individual farmers/farmer groups.

Infrastructure required including equipments and raw materials:

For Mychorrhiza production at farm level, specific equipments, machines are not required. The multiplication can be done at farmers field with the following materials:

- I. Plastic pots or poly bags
- II. Soil
- III. Vermicompost

IV. Starter inoculum

V. Seed material (rice/ragi/maize/sorghum, etc)

Methodology:

Following steps have to be followed sequentially for farm level production of Mycorrhiza:

1. Sterilise soil by heating for 2-4 hours using a big metal pan, or by drying under intense heat of the sun for 2-3 days.
2. Place the sterilised soil in thoroughly cleaned and dry clay pots.
3. After cooling the soil, place a pinch of root starter inoculant, then cover with a thin layer of soil.
4. Sow 3-5 seeds in each pot.
5. Grow the plants for three months under normal conditions.
6. Protect the plants from pests and diseases. Stop watering the plants after three months.
7. Do not use chemical fertilizer/ fungicide in pots/ seedbed before sowing if VAM is to be applied.
8. Cut the plants or stalk when they are completely dried. Allow the soil in the pot to dry further.
9. Remove the plant from the pot and remove the soil adhering to the roots.
10. Cut the roots finely and save some root inoculant for future use. Mix the finely cut roots with the soil from the pot to produce VAM soil inoculants or 5% of cut roots mix with vermicompost for products.
11. Store the root and soil inoculants in sealed plastic bags in a dry and cold place.

Expenses proposed for mass production of VAM

Sl. No.	Item	Quantity	Rate (Rs.)	Amount (Rs.)
1	Plastic pots of medium size	100 no.	50	5000
2	Starter inoculums	200 g	1000/200 g	1000
3	Seed material of rice/ragi/maize/sorghum	250 g		100
4	Carrier material-vermicompost	500 kg	12/kg	6000
5	Labour charges	10 mandays	500/manday	5000
6	Miscellaneous			2900
	Total			20,000/-

Assistance provided:

Under the scheme, assistance will be provided at the rate of Rs. 20000/- per unit. A total of 75 numbers of on farm production units of VAM in the state will be established during 2021-22. The financial outlay for this programme is Rs. 15 lakh, which can be met from the budget provision earmarked for the scheme 'Soil and Root Health Management and Productivity Improvement 2021-22' under the head of account 2401-00-800-28 Plan.

Mode of implementation:

The field level implementation will be done by the Agricultural Officers of the concerned Krishi Bhavans. Individual farmers, farmer clusters, farm clubs, Kudumbasree/Janasree units can establish these production units. The Secretary/Convenor of the group will be in charge of the equipments and other assets created and the farmer himself, if it is an individual venture. Agricultural Officer should conduct periodic verification, give necessary technical guidance and see that the unit is running smoothly and assure that the equipments are well maintained and properly used.

Since the Government is giving emphasis to women participation and gender budgeting, maximum efforts have to be made to include women beneficiaries in the scheme.

The scheme will be implemented by the Deputy Directors of Agriculture (WM) at District level and the Assistant Directors of Agriculture at block level.

Monitoring:

The Additional Director of Agriculture (CP) will be in charge of the programme at the State level. The Principal Agricultural Officers will monitor and co-ordinate the programme at the district level. Monthly progress report should be submitted to the Additional Director of Agriculture (CP) by the 5th of every month.

The crop wise physical achievement under the component 'Providing assistance for application of biofertilizers/biopesticides' should be reported to this office after implementation.

The Principal Agricultural Officer shall furnish a detailed completion report including number of beneficiaries (male, female, SC/ST, General) and Utilisation Certificate in proper format immediately on completion of the project.

The district wise physical and financial target is attached as annexure.

Financial Outlay:

The total financial outlay for this programme is Rs. 25 lakh, which can be met from the budget provision earmarked for the scheme 'Soil and Root Health, Management and Productivity Improvement 2021-22 under the head of account 2401-00-800-28 Plan.

Sd/-

Director of Agriculture

Copy to:

1. All Principal Agricultural Officers
2. TA to Director of Agriculture
3. All Additional Directors of Agriculture
4. DDA, IT Cell (for publishing in the website)
5. Accounts Section
6. Planning section for allotment of funds
7. Stock file/ Spare


MELVIN JOSE. V.J
Assistant Director of Agriculture
Directorate of Agricultural Development
& Farmers Welfare, Vikas Bhavan,
Thiruvanaanthapuram - 695 033


Annexure

SOIL AND ROOT HEALTH MANAGEMENT AND PRODUCTIVITY IMPROVEMENT
ROOT HEALTH MANAGEMENT PRACTICES - Physical and financial targets

Sl. No.	Name of District	Establishment of Onfarm Production Unit of VAM		Application of biofertilizer and biopesticides		Total Financial Target
		Physical	Financial	Physical	Financial	
1	Thiruvananthapuram	5	1	1.4	0.7	1.7
2	Kollam	5	1	1.4	0.7	1.7
3	Pathanamthitta	5	1	1.4	0.7	1.7
4	Alappuzha	5	1	1.4	0.8	1.8
5	Kottayam	5	1	1.4	0.8	1.8
6	Idukki	6	1.2	1.4	0.7	1.9
7	Ernakulam	5	1	1.4	0.7	1.7
8	Thirissur	6	1.2	1.4	0.7	1.9
9	Palakkad	6	1.2	1.4	0.7	1.9
10	Malappuram	6	1.2	1.4	0.7	1.9
11	Kozhikkode	5	1	1.4	0.7	1.7
12	Wayanad	6	1.2	1.4	0.7	1.9
13	Kannur	5	1	1.4	0.7	1.7
14	Kasaragod	5	1	1.4	0.7	1.7
TOTAL		75	15	25	10	25

Sd/-

Director of Adrculture


MELLVIN JOSE V.J.
 Assistant Director of Agriculture
 Directorate of Agricultural Development
 & Farmers Welfare, Vikas Bhavan
 Thiruvananthapuram - 695 033