I/157155/2023

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CIRCULAR

Sub:- Annual Plan 2023-24- Rice Development Scheme- Working instruction issued for the component - Foliar Application of Micro Nutrients in Rice -reg.

Ref:- GO (Rt) No.1096/2023/AGRI Dated: 20/11/2023.

This scheme component viz., " Foliar Application of Micro Nutrients in Rice " which forms a part of the Rice Development scheme 2023 aims at improving production and productivity of Rice through efficient Management of fertilizer especially using foliar spraying of Micro Nutrients.

As per reference 1 cited, the Government have accorded administrative sanction for the implementation of the component under the Head of Account 2401-00-102-90 (P) during 2023-24. Under this circumstance the following instructions along with target are issued for compliance at all levels with immediate effect.

1. Foliar application of micro / nano nutrients in rice

(a). For the purpose of the implementation of the scheme component, the Micronutrient refers to the relative quantity of a nutrient that is required for plant growth. It takes part in metabolic activities, enzymatic process/catalysts etc. Thus these all directly and indirectly help in plant growth and development. There are 8 essential plant nutrient elements defined as micronutrients like boron (B), zinc (Zn), manganese (Mn), iron (Fe), copper (Cu), molybdenum (Mo), chlorine (Cl) and silicon (Si). They constitute in total less than 1% of the dry weight of most plants. Organic sources like farm yard manure, compost, vermicompost etc. may contain less quantity of these nutrients but presence of these help the plant in their growth and development. They also called trace elements or minor elements.

(b). Micro Nutrients plays a vital role in balancing major metabolic

events in plants. Deficiency of even a single Micro Nutrient make the plant unable to complete many metabolic process which cause substantial yield reduction. Micro Nutrients like Zinc, Boron, Silicon and Manganese are involved the metabolism of rice plants, including Chlorophyll Synthesis, Photo Synthesis, Enzyme activation and membrane integrity. Availability and uptake of Micro Nutrients from the root zone depend on the physio chemical soil properties like PH, Soil Organic matter, Soil Moisture and interaction of these Micro Nutrients with other co-existing Nutrients. Micro Nutrient application can help in correcting Micro Nutrient deficiency and enhance grain filling. Foliar Fertilization with Micro Nutrients can be effectively done where soil application is not beneficial.

(c). At present, the effect of application of nano urea is also well proven in rice cultivation. Application of nano urea fertilizers had a significant effect on the grain and straw yield as per many research studies.

(d). In this scheme support is provided for application of Micro Nutrients / nano nutrients using aerial spraying methodology. The nutrient uptake by grain and straw was found to be increased with the foliar application of nutrients because many nutrient formulations have large surface area and particle size is minute which is less than leaves and root pore size, this may cause higher penetration of nutrient into the plant.

2. Application of nano / micro nutrients in rice fields.

(a). Any micro / nano nutrient formulation suitable for application in rice fields can be selected for foliar application in rice. The Block Level Agricultural Knowledge Centres (BLAKC) can take a lead in this regard. All BLAKCs shall record the pre and post application data and documented. The BLAKC shall act as a technical committee for fixing up the procedures for foliar spraying. The Asst. Exe. Engineers or their nominees shall attend the BLAKC meetings for facilitation.

(b). The application shall preferably be carried out using drones. Department of Agriculture has provided drones to various farmer producer organizations (FPOs) of different districts. Implementation can be done

with these FPOs or can engage any other private agencies with proven track record. The availability of drones for spraying shall be ascertained with the help of the Asst. Executive Engineers of the Districts. They shall render suitable help for arranging sufficient number of drones for spraying.

(c). The total cost of aerial spraying of Micro Nutrients in paddy crop is estimated to be Rs. 2625/- per hectare. An amount of Rs. 2000/- hectare can be provided as assistance for aerial spraying of Micro Nutrients in paddy in suitable areas so as to popularize the technology. The spraying shall be carried out in a demonstration mode. It shall be demonstrated in front of a group of farmers.

(d). The financial assistance includes the cost of chemicals, the labour requirement for preparing the solution, rent on drone, transportation cost etc. The assistance can be extended to the beneficiary farmer if he is able to pay in full for the cost of application or to the person or agency who operates the drone for spraying depending up on the field conditions.

3. Financial requirement and source

(a). An area of 9750 hectare of paddy in second/ third crop season shall be covered and an amount of Rs. 195 lakhs is sanctioned for implementation of foliar application of Micro Nutrients in rice during 2023-24.

(b). There is a budget provision of Rs. 195.00 lakh under the Head of Account 2401-00-102-90 (PLAN) during the financial year 2023-24.

4. Scheme management and duration

(a). The scheme shall be managed by Additional Director of Agriculture (CP) at the State level and the Scheme implementation will be completed by 31/03/2023. PAO's of the district shall closely watch the progress of implementation of the scheme. The DDA (WM) shall be the district level monitoring officer. At the grass root level, the programme will be implemented and monitored by the Agricultural Officer and Krishi Bhavan staff. The Assistant Directors of Agriculture at the Block shall supervise the implementation of the scheme component.

5. Physical and Financial target for the implementation of Foliar

application of Micro Nutrients in Rice is as follows

(a). The district wise targets shall be :

Sl. No	**Name of district**	**No. of units (ha)**	**Amount allotted (Rs. lakh)**
1	Alappuzha	3600	72
2	Kottayam	800	16
3	Thrissur	1500	30
4	Palakkad	2600	52
5	Malappuram	700	14
6	Wayanad	550	11
	Total	**9750 ha**	**195 lakhs**

(b). All formalities regarding store purchase rules shall be followed. Do not park funds at any level. Implementation of scheme shall be strictly in accordance with the instructions issued and as per existing procedures, rules and regulations. Expenditure of Rs 195 lakhs (Rupees One crore ninety five lakhs only) under the scheme will be met from the Head of Account 2401-00-102-90 (PLAN).

(c). The Principal Agricultural Officer should submit regular progress report on financial and physical progress of the scheme component to the undersigned every month.

GEORGE SEBASTIAN
Director of Agriculture (i/c)

Copy to: 1) All Additional Directors of Agriculture & SAE
2) All PAOs, PDs ATMA & Executive Engineers
3) Senior Finance Officer., Audit and Accounts sections
4) S W Section for updation in Plan Space.

I/157155/2023

5) Planning Section
6). IT Cell for publishing in the website
7). Stock / Spare