



Republic of the Philippines  
**OFFICE OF THE SECRETARY**  
Elliptical Road, Diliman  
1100 Quezon City

## ADMINISTRATIVE ORDER

No. 04

Series of 2022

**SUBJECT : GUIDELINES ON THE SCALING UP THE USE OF MICROBIAL-BASED FERTILIZERS AS INTERVENTION TO REDUCE COST OF PRODUCTION IN RICE FARMING**

**WHEREAS**, fertilizer is an important input to crop production. It enriches the soil to promote plant growth from the natural or synthetic chemical substance or mixture;

**WHEREAS**, the increasing cost of inorganic fertilizer limits the farmers to adopt the recommended rate, directly affecting the crop yield of many farmers and may reduce total rice production.

**WHEREAS**, organic fertilization technology is available but needs a large volume of raw materials (biomass) to produce significant quantities, resulting in limited finish products available in the market.

**WHEREAS**, microbial-based fertilizer, which is typically derived from a micro-organism, including bio-fertilizers, have beneficial influences on plant growth like nitrogen fixation, acquisition and uptake of major nutrients, promotion of shoot and root growth, disease control, and improve soil structure;

**WHEREAS**, microbial formulations have complementary and synergetic effects with inorganic fertilizers and have been increasingly used as bio-fertilizers. Using the recommended application rate, the microbial-based fertilizer contributes a minimum increment yield of ten percent (10%).

**WHEREAS**, to mitigate the possible impact of the rising cost of fertilizer on farmers' income, the country's rice production, and food security, there is a need to mainstream and scale up the use of microbial-based fertilizers nationwide.

**NOW, THEREFORE**, given the foregoing and by virtue of the powers vested to the Secretary of Agriculture under relevant laws, do hereby issue this Order to provide the Department of Agriculture the general guidelines in using microbial-based fertilizer for rice production.

### SECTION I. OBJECTIVES

1. To complement the reduced use of inorganic fertilizers with the recommended rate of microbial-based fertilizers.

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2. Sustain and maintain the production level in rice despite the reduction in the usage of inorganic fertilizer; and
3. To reduce the dependency on imported inorganic fertilizers by promoting and supporting the scaled up application of microbial-based fertilizers.

## SECTION II. SCOPE/COVERAGE

1. This Order shall be implemented by the National Integrated Rice Program (NIRP).
2. Regional Field Offices must establish at least one (1) hectare- demonstration site in every rice-producing province in their respective regions in partnership with interested microbial-based fertilizer producers, farmers' organization and the local government units.

## SECTION III. IMPLEMENTING GUIDELINES

### A. Microbial-based fertilizers

#### 1. Usage, Schedule of Application, and Rate of Application

Only microbial-based fertilizers registered either with the Fertilizer and Pesticide Authority (FPA) or Bureau of Agriculture and Fisheries Standards (BAFS) will be recommended to supplement commercial inorganic fertilizers.

The microbial-based fertilizers should not be mixed with chlorinated water and must be applied one day before or after the application of inorganic fertilizers. It must also be applied singly and not in combination with pesticides or other spray chemicals.

The microbial-based fertilizers will be applied four (4) times, as follows:

APPLICATION	SCHEDULE OF APPLICATION
1 <sup>st</sup> application	At seedbed, 10-15 days after sowing of seeds
2 <sup>nd</sup> Application	10-15 day after transplanting (DAT)
3 <sup>rd</sup> Application	20-25 DAT
4 <sup>th</sup> Application	30-35 DAT

The rate per spray application is 1.0 liter per hectare or depends on the manufacturer's recommendation and the total volume needed per hectare is 4.0 liters.



## 2. Description of microbial-based fertilizer

Microbial-based fertilizer should have guaranteed analysis containing trace amounts of Nitrogen, (N) Phosphorous (in  $P_2O_5$ ) and Potassium (K) (in  $K_2O$ ), Sulfur (as  $SO_4$ ), Iron, Magnesium, Zinc. N minimum of 0.10%, P (in  $P_2O_5$ ) minimum of 0.0002%, K (in  $K_2O$ ) minimum of 0.05%. The total plate count (TPC) is equal to or better than 100,000 colony forming units (cfu) per ml. In terms of Total Coliforms value, the microbial contamination should be less than 1.8 most probable number (MPN/100). Results of the guaranteed analysis for nutrient content, TPC, and total coliform are supported by laboratory analysis registered with FPA or BAFS.

### B. Inorganic Fertilizers

The minimum inorganic fertilizer rates will be six bags/hectare (3 bags Urea plus three bags 14-14-14 or three bags Urea plus two bags 16-20 and one bag 0-0-60).

The time of fertilizer application shall be based on Rice Production Techno Guides developed by PhilRice or the Department of Agriculture - Regional Field Office.

### C. Roles/Responsibilities

#### 1. Regional Field Offices

- a. Establish demonstration sites in coordination with the Provincial LGUs (PLGUs). The PLGUs shall be responsible for the selection of demonstration sites.
- b. Procurement of inorganic and microbial-based fertilizer for use in the demonstration sites. However, in areas where most farmers are already using microbial-based fertilizer, the RFOs may procure the needed quantity, subject to the usual accounting and auditing rules and regulations.
- c. Promote and support the scaling up of microbial-based bio-fertilizers to sustain/maintain yield levels amidst the increasing cost of commercial inorganic fertilizers, resulting in the reduced use of recommended inorganic fertilizers.
- d. Submit a report on the effect of microbial-based fertilizer in rice yield (comparison of yield in demonstration site using microbial-based fertilizers vs. outside demonstration site did not apply microbial-based fertilizers), suppression of rice pests and diseases (e.g., bacterial and fungal diseases & insect pests like brown and green plant hoppers) and net income.

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## 2. Microbial-based Fertilizer Supplier

- a. Deploy/assign technical staff to assist the regional personnel in providing technical assistance to the farmers related to the proper use of the product.

### SECTION V. MONITORING AND EVALUATION

The RFOs shall designate staff from the Planning, Monitoring, and Evaluation Division (PMED) in coordination with the Rice Program Staff to craft the monitoring and evaluation system to address the issues and concerns on the use of microbial-based bio-fertilizers to ensure the effective implementation and sustainability on the use of the same.


### SECTION VI. FUNDING

The funding shall be sourced from the Rice Program funds of the Regional Field Offices.

### SECTION VII. EFFECTIVITY

This Order shall take effect immediately.

Done this 8th day of February 2022.

  
**WILLIAM D. DAR, Ph.D.**  
Secretary 

DEPARTMENT OF AGRICULTURE  
  
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