

## C. Biofertilizers

(Krushi Darshani –2022 published by MPKV, Rahuri)

| Crop                | Biofertilizer                    | Dose                                             | Method of Application                         |
|---------------------|----------------------------------|--------------------------------------------------|-----------------------------------------------|
| Rice (Transplanted) | Azotobacter + PSB                | 25g kg <sup>-1</sup> seed each                   | Seed treatment before transplanting           |
| Wheat               | Azotobacter + PSB                | 25 g kg <sup>-1</sup> seed each                  | Seed treatment                                |
| Maize               | Azospirillum/ Azotobacter        | 25 g kg <sup>-1</sup> seed                       | Seed treatment                                |
| Sugarcane           | Acetobacter diazotrophicus + PSB | 10 kg ha <sup>-1</sup> + 2.5 kg ha <sup>-1</sup> | Sett treatment + soil application at planting |

## 7. SOIL TESTING IS THE KEY TO PROFITABLE FARMING

- District recommendations are general guidelines. For maximum profit and nutrient efficiency:
- Get Your Soil Tested Every 2–3 Years from locally available any of KVK, NGO's, private soil testing center and State and Central government institutions offer the service .
- A soil test helps determine soil fertility status, nutrient deficiencies, correct fertilizer requirement, soil amendments needed and fertilizer recommendations.

## 8. FERTILIZER SAVING & PROFIT INCREASE

The revised fertilizer recommendations result in:

- Substantial savings in sugarcane, mainly due to large reductions in phosphorus and potassium recommendations
- Moderate savings in wheat due to reduced N, P, and K requirements.
- Slight increase in fertilizer use for rice and

- Kharif maize because of higher potassium recommendations.
- Higher fertilizer requirement for Rabi maize, reflecting its greater yield potential and nutrient demand under irrigated conditions.
- Adoption of the revised fertilizer recommendations can save ₹2,700 ha<sup>-1</sup> in wheat and ₹6,600 ha<sup>-1</sup> in sugarcane, while ensuring balanced nutrient management.

## 9. FARMER'S PLEDGE

I will:

- Test my soil regularly
- Follow recommended fertilizer doses
- Apply fertilizers in balanced proportions
- Use organic manures and biofertilizers
- Avoid excessive use of urea
- Maintain healthy soils for future generations

## 10. KEY MESSAGE

Healthy Soil → Balanced Fertilization → Higher Yield → Higher Profit

*"Apply the Right Nutrient, at the Right Dose, at the Right Time, and by the Right Method"*

### Technical Folder No. 89

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## BALANCED FERTILIZATION FOR HIGHER PROFITS

Revised Fertilizer Recommendations for  
Major Field Crops of Pune District



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## 1. WHY SHOULD FARMERS CHANGE THEIR FERTILIZER PRACTICES?

Many farmers apply fertilizers based on traditional practices rather than crop requirement. Excessive use of fertilizers, particularly urea and DAP, leads to:

- Increased cultivation cost
- Lower fertilizer use efficiency
- Nutrient imbalance in soil
- Soil degradation and declining soil health
- Reduced profitability

Recent scientific studies have shown that fertilizer requirements in Pune district differ from blanket state recommendations. By adopting district-specific fertilizer recommendations, farmers can achieve optimum yields while reducing unnecessary fertilizer expenditure.

## 2. BENEFITS OF BALANCED FERTILIZATION

### A) Economic Benefits

- Reduced fertilizer expenditure
- Higher nutrient use efficiency
- Increased profit per hectare

### B) Soil Health Benefits

- Improved soil fertility
- Better root growth
- Enhanced microbial activity
- Improved soil organic carbon

### C) Environmental Benefits

- Reduced nutrient losses
- Lower groundwater contamination
- Reduced greenhouse gas emissions

## 3. FOLLOW THE 4R PRINCIPLES

### • Right Source

Use the fertilizer that supplies the nutrient that crop needs. Do not apply fertilizers blindly

### • Right Rate

Apply recommended quantities of FYM and the fertilizer given below in the table.

### • Right Time

Apply recommended FYM 45 days before raise of crops and recommended nutrients in split doses at critical crop stages.

### • Right Method

Use band placement, split application and fertigation to minimize nutrients losses

## 4. REVISED FERTILIZER RECOMMENDATIONS FOR PUNE DISTRICT (ICAR, 2026)

| Crops        | Nutrient Requirement (kg ha <sup>-1</sup> ) |                               |                  | Fertilizer Requirements (Kg ha <sup>-1</sup> ) |     |     |
|--------------|---------------------------------------------|-------------------------------|------------------|------------------------------------------------|-----|-----|
|              | N                                           | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | Urea                                           | TSP | MOP |
| Rice         | 125 (100)                                   | 50 (50)                       | 60 (50)          | 271                                            | 111 | 100 |
| Wheat        | 50 (100)                                    | 30 (50)                       | 20 (50)          | 109                                            | 67  | 33  |
| Sugarcane    | 300 (340)                                   | 100 (170)                     | 85 (170)         | 651                                            | 222 | 142 |
| Kharif Maize | 100 (120)                                   | 60 (60)                       | 50 (40)          | 217                                            | 133 | 84  |
| Rabi Maize   | 170 (120)                                   | 70 (60)                       | 60 (40)          | 369                                            | 155 | 100 |

## TIONS FOR PUNE DISTRICT (ICAR, 2026

(- Old fertilizer recommendation as per STCR approach

## 5. CROP-WISE FERTILIZER APPLICATION STRATEGY

### A. Rice

1. Nitrogen: Apply in 3 splits: 50% at transplanting, 25% at active tillering and 25% at panicle initiation
2. Phosphorus and Potassium: Apply full dose at planting

### B. Wheat

1. Nitrogen: Apply 50% at sowing and 50% at CRI stage (20–25 DAS)
2. Phosphorus and Potassium: Apply full dose at sowing

### C. Maize

1. Nitrogen: Apply 25% at sowing, 50% at knee-high stage and 25% before tasseling
2. Phosphorus and Potassium: Apply full dose at sowing.

### D. Sugarcane

1. Nitrogen and Potassium: Apply in 4 splits through fertigation. Apply 10% N and 25% K<sub>2</sub>O at basal, 30% N and 25% K<sub>2</sub>O at early tillering (45-60 days), Grand growth stage (90-120 days) and Maturing stage (240 to 300 days after planting).
2. Phosphorous: Apply 100% at the basal

## 6. IMPROVE FERTILIZER USE EFFICIENCY

### A. Apply Organic Manures;

Apply 5–10 t ha<sup>-1</sup> FYM or Compost or Vermicompost, or Green manures

### B. Recycle Crop Residues

Do not burn crop residues. Incorporate them into the soil to improve nutrient cycling and soil organic matter.