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Fertilizer recommendations based on MOET analysis and target yields

Proper management of nutrients improves crop growth and yield. It means giving the right kind and amount of nutrients at the right time. Rice plants grow and respond better to fertilizer when there is more sunlight.

Option 1 Fertilizer recommendations (bag per hectare) per yield target per season if solophos (0-18-0) is the source of P fertilizer.

Soil Nutrient Status	Wet Season Yield Target 5 t/ha	Dry season Yield Target 7t/ha
P and K are not deficient	First application*: 4 bags 14-14-14-12S	First application: 6 bags 14-14-14-12S
P and K are deficient	<u>For fine textured soil</u> First application: 4 bags 14-14-14-12S + 0.5 bag 0-18-0 + 0.5 bag 0-0-60	<u>For fine textured soil</u> First application: 6 bags 14-14-14-12S + 2 bags 0-18-0 + 1 bag 0-0-60
If grain yield in either IPS or IKS plots is 4t/ha.	<u>For medium textured soil</u> First application: 4 bags 14-14-14-12S + 0.5 bag 0-18-0 At EPI: 0.5 bag 0-0-60	<u>For medium textured soil</u> First application: 6 bags 14-14-14-12S + 2 bags 0-18-0 At EPI: 1 bag 0-0-60
Only P is deficient	First application: 4 bags 14-14-14-12S + 0.5 bag 0-18-0	First application: 6 bags 14-14-14-12S + 2 bags 0-18-0

- First application is usually 10-14 days after transplanting (DAT) or 21 days after direct-wet seeding (DAS). Subsequent nitrogen application (N) fertilizer applications are based on weekly leaf color chart (LCC) readings from 21 DAT or 28 DAS to early flowering. After LCC reading, urea (46-0-0) is applied instead of ammonium sulfate (21-0-0-24S) since sulfur (14% S) is adequately supplied by 14-14-14-12S. If the average LCC reading is below 4, apply 1 bag urea/ha in wet season and 1.5 bags urea/ha in dry season.

- Phosphorus and Potassium (P and K) deficiencies are based on MOET test or nutrient omission plots in the field. Soil is deficient in P and K if grain yield in the P omission or K omission plot is 4 t/ha or less. If MOET test shows plant zinc deficiency symptoms, apply 25 kg zinc sulfate (Zn SO₄) per hectare at 14 DAT in dry season for that year.

Option 2 Fertilizer recommendations (bag per hectare) per yield target per season if ammonium phosphate (16-20-0) is the source of P fertilizer.

Soil Nutrient Status	Wet Season Yield Target 5t/ha	Dry Season Yield Target 7t/ha
P and K are not deficient*	First application: 4 bags 14-14-14-12S	First application: 6 bags 14-14-14-12S
P and K are deficient	For fine textured soil: First application: 4 bags 14-14-14-12S + 0.5 bag 16-20-0 + 0.5 bag 0-0-60	For fine textured soil: First application: 5 bags 14-14-14-12S + 2 bags 16-12-0 + 1 bag 0-0-60
If grain yield in either IPS or IKS plot is 4t/ha	For medium textured soil: First application: 4 bags 14-14-14-12S + 0.5 bag 16-20-0 At EPI: 0.5 bag 0-0-60	For medium textured soil: First application: 5 bags 14-14-14-12S + 2 bags 16-20-0 At EPI: 1 bag 0-0-60
Only P is deficient	First application: 4 bags 14-14-14-12S + 0.5 bag 16-20-0	First application: 5 bags 14-14-14-12S + 2 bags 16-20-0

- First application is usually 10-14 days after transplanting (DAT) or 21 days after direct-wet seeding (DAS). Subsequent nitrogen application (N) fertilizer applications are based on weekly leaf color chart (LCC) readings from 21 DAT or 28 DAS to early flowering. After LCC reading, urea (46-0-0) is applied instead of ammonium sulfate (21-0-0-24S) since sulfur (14% S) is adequately supplied by 14-14-14-12S. If the average LCC reading is below 4, apply 1 bag urea/ha in wet season and 1.5 bags urea/ha in dry season.
- Phosphorus and Potassium (P and K) deficiencies are based on MOET test or nutrient omission plots in the field. Soil is deficient in P and K if grain yield in the P omission or K omission plot is 4 t/ha or less. If MOET test shows plant zinc deficiency symptoms, apply 25 kg zinc sulfate (Zn SO₄) per hectare per year in dry season at 14 DAT.

Common fertilizer sources of sulfur

Common Fertilizer Sources of S	Sulfur Content (%)	Total Plant Food Content (%)
Ammonium sulfate	24.2	45
Ammonium nitrate-sulfate	15.4	51
Gypsum	15-18	
Single superphosphate	12-14	30-34
Triple superphosphate	1.5	47.5
Potassium sulfate	16-18	69
Zinc sulfate	17.8	0 (36.4 Zn)

Tips to Remember

- Sufficient nutrients at Early Panicle Initiation (EPI) to flowering will ensure good crop growth, panicle development, and attainment of potential yield. The optimum panicle density could be associated with the attainment of yield potential per season (refer to Table 1 Option 1 or Table 2 Option 2).
- Based on MOET analysis, farmers can use 16-20-0 or 0-18-0 whichever is available in the market.
- Feed the rice plants with the right nutrients and apply organic fertilizer as recommended by the Department of Agriculture.

Source: PalayCheck System for Irrigated Lowland Rice. Philippine Rice Research Institute. ©2007