

An Agricultural Extension Initiative
of Dangote Fertiliser Limited

GOOD AGRONOMIC PRACTICES FOR RICE




**DANGOTE
FERTILISER**

Power to Farmers



Rice is the most important staple food crop in Nigeria with a consumption of 7.9 million metric tonnes. In Nigeria, rice is cultivated on 3.9 million hectares with the average productivity of 2.01 mt/hectare. Nigeria is blessed with suitable ecologies for different rice varieties which can boost rice production to meet increasing demand.

SITE SELECTION

Select weed free and fertile land with good water retention capacity for rice production. Choose relatively flat land with swampy, clayey and loamy soil texture for uniform distribution and long retention of water.

LAND PREPARATION

Good land preparation is essential in rice cultivation for effective weed control, efficient fertiliser use and uniform distribution of water in the field.

Non selective herbicides, Glyphosate or Paraquat 276 g @ 3-4 litres/hectare, should be used for control of weeds before ploughing. Construct bunds around the field to retain the water. Flood the field with water and puddle or till with harrow to kill the weed and retain water in the field.



SELECTION OF VARIETY

Always use viable certified seed of improved varieties with good germination which are vital for high yield. Choice of variety is based on the consumer's preference and market demand.

Recommended rice varieties for Upland and irrigated ecology include:

Early maturing varieties: FARO 44

Medium maturity varieties: FARO-51 and FARO 52

Lowland Submerge Ecology: FARO-66 & FARO-67

METHOD AND TIME OF PLANTING

Direct Sowing

Rice can be planted by dibbling method using 30-40 kg seeds per hectare and by broadcasting method, 80- 100 kg seed per hectare is required. Plant spacing should be 20-25 cm between rows and 15-20 cm between plants. Seed should be uniformly and evenly spread in broadcasting method. This could be by May/June when the rains may have been fully established.

Nursery Preparation

Prepare nursery in May - June for wet season and December - January for dry season. Before planting, soak 25 to 30 kg seed in water for 24 hours and keep for sprouting in shade for 2 days. Sprouted seed should be broadcasted on nursery seed bed of 300-500 square meters for one-hectare rice field. Irrigate the nursery once in 2-3 days to maintain soil moisture. Keep nursery weed free all the time.

TRANSPLANTING

Transplant 20 -25 days old seedlings from nursery to main field at 2-3 seedlings per hill to a depth of 3-4 cm and at a spacing of 20 cm X 20 cm. Supplying should be done to maintain plant population in empty spaces with remnant nursery seedlings within 7-10 days after transplanting.



WEED MANAGEMENT

Always keep rice field weed free especially at early crop growth stages between 3 to 6 weeks after sowing or transplanting. Two or three hand weeding or two sprays of herbicide will control the weed growth.

Chemical weed control: Use selective pre-emergence herbicide for direct seeded and transplanted rice. Spray Butachlor 50% EC @ 2-2.5 liter per hectare 2-3 days after sowing/transplanting. Spray post emergence herbicide; Propanil 36% +2,4-D amine salt 20% @ 3 litres per hectare after 3 weeks of sowing/transplanting.



FERTILISER MANAGEMENT

Fertiliser should be applied on soil test based recommendation. Before planting, collect the soil sample as per sample collection instructions and get soil test analysis report from Dangote Soil Testing Laboratories or nearest agricultural universities. Recommended fertiliser rates are 100kg Nitrogen(217 Kg Dangote Urea), 50 Kg Phosphorus and 40kg Potash per hectare.

Urea should be applied in three equal split doses at basal, 3rd week and 6th week after sowing/ transplanting. Apply full dose of Phosphorus and Potash at the time of sowing/ transplanting.



PEST AND DISEASE MANAGEMENT

Stem borer: Can be easily identified with white heads (whitish unfilled panicles) at the reproductive stage. Feeding damage at the base of the plant or along the main stem causes dead tillers (dead-hearts) at vegetative stage. Tiny holes, frass and fecal matter can be observed on the damaged plant tissues.



Dry season crop suffers more. Periodically raising water levels in the field can kill the eggs and reduce infestation. For the chemical control spray @ 1. Chloropyriphos 20% EC @1.5litres per hectare or Lambda Cyhalothrin 2.5 EC @ 1litre per hectare.

Leaf folder: Along the Leaf blade, a whitish transparent streaks appearance and presence of disc-shaped eggs or fecal matter are signs of infestation. To prevent Leaf folder in rice, protect and release natural enemies, like frog, egg parasitoid wasps, predatory beetles and dragonflies. Always use preventive measures like botanical repellants, neem oil, traps and resistant varieties. For chemical control use Lambda Cyhalothrin 2.5 EC @1 litre per hectare.

DISEASES: Common rice diseases are Blast and False smut.

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Blast: is a serious disease in rice which affects rice at all growth stages ranging from nursery to grain formation. Blast can be diagnosed by observing round to oval shaped white spots with dark margins on leaves and also on internodes. For chemical control spray Carbendazim 50% WP @ 250g per hectare or Hexaconazole 5% SC @ 50 g a.i. per hectare.



False Smut: False smut is becoming a major disease in rice production. This is a fungal disease that produces smut balls which affects embryo and increases sterility in grain. Due to fungal infection, individual grains of the panicles transform into greenish spore balls of velvety appearance, enclosing the floral parts. High humidity and cloudy weather during flowering and grain formation favours the development of disease.



Healthy and chemically treated seed should be used for planting. At the time of harvesting, diseased plants should be removed and destroyed so as to prevent spore balls from falling on the field. Excess application of nitrogenous fertiliser should be avoided. It can be controlled by spraying Cuprous Oxide 60% + Metalaxyl M 6% @ 100-150 gm per hectare.

HARVESTING

Harvest the mature crop when 80 - 85% of grains on panicle had turned to straw yellow colour to avoid shattering. Cut mature plant with sickle at 15 cm above ground surface. Harvested plants should be sun dried for 2-3 days in the field to reduce the grain moisture content. Thresh the grain from panicle through beating panicles on drum or wood.




YIELDS

Rice yield range between 1.5 to 3tons per hectare for swamp rice and 1 – 1.5 tons per hectare for upland rice. With improved practices, yields of up to 5 – 6 tons can be obtained.



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