

Crop details

Rice (mchele/paddy)

Oryza sativa

Family: Poaceae

Categories

Cereals & Pseudocereals

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Quick stats

Family	Poaceae
Typical harvest	4.3 t/ha
Varieties	3
Pests and diseases	6
Seasons	3

Crop profile

Growth habit	annual
Days to harvest	120
Main uses	Main food grain (mchele) for boiled rice, pilau, biryani and porridge; bran used for animal feed.
Pollination	self
Origin and where it grows	Rice (mchele/paddy) is grown in lowland irrigation schemes and wetlands in East Africa, with some upland rice in higher rainfall areas.

Weather, soil and spacing

Best temperature	22 - 32 °C
Rainfall	1000 - 1500 mm/yr
Altitude	0 - 2000 m
Best pH	5.5 - 7
Soil type	Heavy loam to clay soils that can hold water; Rice (mchele/paddy) does well in puddled soils that keep standing water.
Row spacing	20 cm
Plant spacing	20 cm
Planting depth	2 cm
Seed rate	30 kg/ha
Nursery days	25

Simple notes for farmers

**About the crop:** This crop is annual; it grows and is harvested in one season. Harvest typically starts about 120 days after planting.

**Main use:** Farmers mostly grow this crop for main food grain (mchele) for boiled rice, pilau, biryani and porridge; bran used for animal feed..

**Pollination:** Mainly self; healthy flowers and pollinators improve fruit set.

**Where it grows:** Rice (mchele/paddy) is grown in lowland irrigation schemes and wetlands in East Africa, with some upland rice in higher rainfall areas.. Grouped under: Cereals & Pseudocereals.

**Best climate:** 22 - 32 °C; 1000 - 1500 mm/yr; up to about 2000 m a.s.l.

**Soil:** Best at pH 5.5 - 7; heavy loam to clay soils that can hold water; rice (mchele/paddy) does well in puddled soils that keep standing water..

### **Farmer guide (Mwongozo wa Mkulima)**

<b><u>Planting</u></b>	For paddy Rice (mchele/paddy), raise seedlings in a nursery for about 3–4 weeks, then transplant 2–3 seedlings per hill into puddled fields with shallow standing water.
<b><u>Transplanting</u></b>	Transplant young, healthy seedlings at 3–4 weeks, do not bury the growing point, and keep water shallow for the first week to help them establish.
<b><u>Irrigation</u></b>	Keep a thin layer of water (about ankle deep) in the field from after establishment up to flowering. Drain slowly as the crop nears maturity to allow fields to dry for harvest.
<b><u>Fertigation</u></b>	If using controlled water inlets, split nitrogen into 2–3 applications: at planting/transplanting, tillering and panicle initiation.
<b><u>Pest scouting</u></b>	Check fields every week. Look for yellowing or burnt leaves (diseases), chewed stems (stem borers) and damaged panicles, as well as leafhoppers and planthoppers.
<b><u>Pruning and training</u></b>	No pruning required. Focus on early and regular weeding, especially in the first 40 days.
<b><u>Harvest</u></b>	Harvest Rice (mchele/paddy) when most panicles are golden, grains are hard and the straw has turned yellow. Overdrying in the field can cause shattering.
<b><u>Postharvest</u></b>	Cut and bundle, then dry paddy on clean tarpaulins. Thresh gently, dry grain to hard, biting-resistant stage and store in dry, insect-free bags or silos.

### **Nutrient schedule (Mbolea kwa Hatua)**

#	<b><u>Stage</u></b>	<b><u>DAP</u></b>	<b><u>Product</u></b>	<b><u>Rate</u></b>	<b><u>Targets (kg/ha)</u></b>	<b><u>Notes</u></b>
1	Basal (land preparation)	0	NPK or DAP 18-46-0 plus K source	80 kg/ha	N: 14, P <sub>2</sub> O <sub>5</sub> : 37, K <sub>2</sub> O: 0	Incorporate uniformly into puddled soil before transplanting Rice (mchele/paddy).
2	Tillering topdress	20	Urea 46% N or CAN 26% N	60 kg/ha	N: 28, P <sub>2</sub> O <sub>5</sub> : 0, K <sub>2</sub> O: 0	Apply when plants are well established and tillering, with shallow standing water.
3	Panicle initiation topdress	40	Urea 46% N	40 kg/ha	N: 18, P <sub>2</sub> O <sub>5</sub> : 0, K <sub>2</sub> O: 0	Apply just before panicles form inside the stem, if season and water allow.

### **Nutrient requirements**

<b><u>Nutrient</u></b>	<b><u>Stage</u></b>	<b><u>Amount</u></b>	<b><u>Unit</u></b>
N	Basal	40	kg/ha
P <sub>2</sub> O <sub>5</sub>	Basal	30	kg/ha
K <sub>2</sub> O	Basal	20	kg/ha
N	Tillering	30	kg/ha
P <sub>2</sub> O <sub>5</sub>	Tillering	0	kg/ha

<u>Nutrient</u>	<u>Stage</u>	<u>Amount</u>	<u>Unit</u>
K <sub>2</sub> O	Tillering	10	kg/ha
N	Panicle_initiation	20	kg/ha
P <sub>2</sub> O <sub>5</sub>	Panicle_initiation	0	kg/ha
K <sub>2</sub> O	Panicle_initiation	10	kg/ha

## **Varieties**

<u>Name</u>	<u>Country</u>	<u>Maturity (days)</u>	<u>Traits</u>
Improved lowland rice – medium duration	KE	120	Suitable for irrigation schemes, good grain quality and yield.
Improved lowland rice – early	TZ	110	Early-maturing Rice (mchele/paddy) for areas with shorter seasons.
Local paddy rice	KE	130	Traditional taste and aroma, lower yield than improved varieties.

## **Fertilizer recommendations**

<u>Stage</u>	<u>Product</u>	<u>Rate</u>	<u>Notes</u>
Basal	DAP 18-46-0 or NPK with P	80	Supplies phosphorus and starter nitrogen for Rice (mchele/paddy).
Topdress (tillering)	Urea 46% N or CAN 26% N	60	Boosts tiller formation and early canopy growth.
Topdress (panicle initiation)	Urea 46% N	40	Improves panicle size and grain number when water is adequate.

## **Pests and diseases**

<u>Name</u>	<u>Type</u>	<u>Symptoms</u>	<u>Management</u>
Rice stem borers	pest	Dead hearts in young plants, white heads at grain filling where panicles are empty.	Destroy stubble after harvest, avoid continuous Rice (mchele/paddy) on the same field, and use recommended controls when damage is noticed early.
Rice blast	disease	Diamond-shaped spots on leaves, neck rot at the base of the panicle, broken or empty heads.	Use blast-tolerant varieties, avoid very high nitrogen and maintain good field drainage at critical stages.
Bacterial leaf blight	disease	Yellow, water-soaked streaks on leaves that turn brown and dry from the tip backwards.	Plant resistant Rice (mchele/paddy) varieties, avoid using infected seed and keep field hygiene.
Leafhoppers and planthoppers	pest	Yellowing and drying (“hopper burn”) patches, insects on stems and lower leaves.	Avoid overuse of insecticides that kill natural enemies; use selective products only when numbers are high.

<u>Name</u>	<u>Type</u>	<u>Symptoms</u>	<u>Management</u>
Rice yellow mottle virus	disease	Yellow mottling, stunting and poor panicle formation.	Use tolerant varieties, clean seed and good water and weed management.
Weeds (especially sedges and grasses)	pest	Competition for nutrients and light; fields look patchy and uneven.	Early hand weeding or rotary weeding, and good water management to suppress weeds.

## Yields

<u>System</u>	<u>Typical</u>	<u>Min</u>	<u>Max</u>	<u>Notes</u>
Smallholder lowland (rainfed, low input)	2	1	3	Local varieties, limited fertilizer and simple weed control.
Smallholder irrigated (improved management)	4.5	3	6	Improved Rice (mchele/paddy) varieties with recommended fertilizer and timely water management.
Well-managed irrigated schemes	6.5	5	8	Good varieties, proper leveling, water control, fertilizer and strong weed/pest control.

## Season calendars

<u>Country</u>	<u>Region</u>	<u>Planting</u>	<u>Harvest</u>
KE	Irrigated Rice (mchele/paddy) schemes – 1st season	Jul–Aug	Dec–Jan
KE	Irrigated Rice (mchele/paddy) schemes – 2nd season	Feb–Mar	Jun–Jul
TZ	Lowland valleys and irrigation schemes	Dec–Jan	May–Jun

## Region suitability

<u>Country</u>	<u>Region</u>	<u>Suitability</u>
KE	Dry upland, rocky areas	Low
KE	Irrigation and wetland Rice (mchele/paddy) zones (e.g. central and coastal schemes)	High
TZ	River valleys and irrigation schemes	High
UG	Wetland and lowland Rice (mchele/paddy) areas	High

Source: **FarmLens Ltd** - farmlens.africa and app.farmlens.africa. Headquarters: Nairobi, Kenya. This guide was generated from the FarmLens database.