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# Good rice, more money

Irrigated rice in northern Ghana



Working in partnership to create down-to-earth messages on integrated soil fertility management



Guidelines for northern Ghana



## Nursery bed preparation

- Select a field close to a water source
- The size of the seed-bed should be easy to manage - not more than 1m wide but of a convenient length (maximum 10m).
- Level the top of the bed and avoid stepping on the bed when working



## Nursery management

- Plant certified seeds every season. You need 20 kg rice per acre(50 kg/ha)
- Pre-germinate seeds for easier sprouting:
  1. Soak seeds overnight and remove all floating seeds and dirt
  2. Spread soaked seed on a wet jute sack for 48 hours under shade to sprout
- Drill sprouted seeds 5 cm between rows across the width
- Apply ½kg NPK fertilizer (15:15:15) in between the rows (per 1m x 5m) of bed at 7 and 14 days after sprouting



## Main field preparation and transplanting

- Repair all leakages in the bunds
- If necessary, add small bunds across to ensure uniform distribution of water in a field with a slight slope
- Puddle (turn the soil) twice: first left to right, then top to bottom
- Level the field
- First fertilizer application: Broadcast NPK fertilizer at second puddling stage. e.g either 23-10-5 (*Actyva*) or 15-15-15 (*Unik*). Dibble fertilizer into moist soil.
- Apply 3 bags (50 kg each)/acre) and mix into the soil
- Transplant seedlings at 21 days after emergence. Keep the extra seedlings for later gap filling
- Fill any gaps 8 days after transplanting
- Pegging the field:
  1. Get a garden rope and some quantity of small pegs (twigs).
  2. Knot along the rope at 20 cm intervals.
  3. Stretch rope across the field to be planted.
  4. Push pegs into the ground at the marked knots.
  5. Space between the rows should also be 20 cm - to give 20 cm by 20 cm spacing.
- Plant two seedlings per stand
- Prepare main field by repeated ploughing, puddling and uniform levelling.

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### Field management

- Ensure field is free from weeds before applying any fertilizer.
- Apply selective pre-emergence herbicide same day or the following day after transplanting. Weeds will take at least three weeks to come up.
- Uproot all off-types - sick-looking rice plants and those that look different from the other plants.
- Second fertilizer application:
  - Types of fertilizers to use: either 1 bag of Urea (50 kg) or 2 bags (50 kg each) of Sulphate of ammonia or *Sulfan* per acre
  - Split (divide) fertilizer into two equal parts
  - Apply fertilizer late in the afternoon to avoid losses
- Broadcast fertilizer into moist soil:
  1. when plants are tillering - 20 days after transplanting
  2. at panicle initiation stage - 40 days after transplanting
- Drain field 2-3 days before applying fertilizer and let in water 1-2 days after applying fertilizer
- Do not apply fertilizer in water.

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### Pest and disease management

- Stem borers, ants, termites, army worms and the gall midge fly are common pests that can be controlled by correct spraying.
- Fungal diseases can be discouraged by pre-treating the seed.
- Birds, hoppers and rodents should be scared away.
- Using improved seed varieties, bunding and seed treatment protects rice from panicle blast, leaf blight and brown spot.



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## Harvest

- This is done when panicles are brown, grains are firm to bite, some grain remains on the palm when the panicle is squeezed by hand and about 4 weeks after flowering
- Drain water 2 weeks before harvesting.
- Harvest manually or using a combine harvester. If harvested manually, collect all panicles from the field to a safe place to avoid bush fires.

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## Post-harvest

- Thresh manually or by machine. Thresh on a clean surface (e.g. tarpaulin) if threshing manually.
- Do not thresh by driving a tractor over the panicles. This damages a lot of grains
- Collect the paddy rice into sacks and weigh
- Store in a dry safe place on pallets or a platform or deliver to mill
- **Milling:**
  - Either mill immediately after harvesting when the paddy rice makes a sharp sound when placed in the palm and rubbed between the fingers, or is hard on biting with the teeth (this is at 14% moisture content)
  - If you decide to store before milling, then the moisture content is likely drop to 12%. At this stage, parboil the paddy rice before milling to reduce grain breakage