

Insect and Disease Control

- During Rabi Yellow stem borer is the major pest at initial stage of plant growth. Dip the seedling up to root in Chloropyriphos solution @ 2ml/l of water overnight before transplanting. Apply Carbofuran granules @ 30 kg/ha at panicle initiation stage for its effective control during Kharif.
- Foliar spray of Imidacloprid @ 1 ml/l or Chloropyriphos @ 5 ml/l can be applied for Brown plant hopper, WBPH, Leaf folder and Case worm.
- If Sheath Blight appears towards panicle initiation stage, avoid N application, spray Validamycin or Sheathmar3 @ 2ml/l. Spray Propiconazole @ 1ml/l at the appearance of the disease symptoms.
- In case of appearance of BLB or BLS apply Plantomycin 0.1 % or Streptocycline 0.01 % along with Cupper oxychloride 0.2 %. Minimum two sprays or in severe cases 3 sprays should be applied in 8 days interval.
- Use 500 liter of water/ha for spraying pesticide and keep the field bund clean to minimize disease and pest attack.

Harvesting, Drying and Milling

- Harvest the crop when 80% of the grains in panicles are ripened.
- Thresh immediately after harvesting and dry gradually under shade up to 12% moisture content for seed purpose and 14% for milling.

Crop Rotation

- As this variety is harvested early in the wet season, crops such as *rabi* rice, maize, potato, vegetables and mustard can be grown after rice.
- It fits very well into the intensive three crop rotations like rice-rice-rice, rice-maize-cowpea, rice-potato-sesamum, rice-sunflower-green gram.

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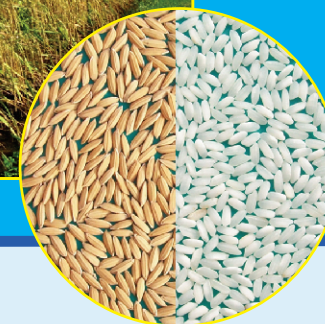
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Naveen: A high-yielding rice variety for irrigated/boro lands from the Central Rice Research Institute, India.

Naveen

A high-yielding rice variety for irrigated/boro lands Package of Practices

S.S.C.Patnaik, K.S.Rao, G.J.N.Rao, M.Jena and K.M.Das



Rice variety Naveen (CR 749-20-2, IET 14461) evolved at the Central Rice Research Institute, Indian Council of Agricultural Research, Cuttack, from Sattari/Jaya cross was released by the Orissa State Sub Committee on Crop Standards, Notifications and Release of variety in 2005 and notified in 2006. It is suitable for cultivation in favourable rainfed uplands and irrigated lands during *Kharif* and irrigated land during *boro/rabi* season in Orissa. It has a semi-dwarf plant type (100-110 cm) and matures in 115 days in *kharif* under direct seeded condition and in 118 days under transplanted conditions. During *rabi*, it matures in 120 days under transplanted conditions. It is resistant to blast and stem borer and tolerant to brown spot. The variety Naveen has medium bold grain with 66.5% Head Rice Recovery and Elongation Ratio of 1.76. It yields 4.5-5.0 t/ha during *kharif* and 5.0 to 6.0 t/ha during *rabi*.

RECOMMENDED CULTURAL PRACTICES

Land Situation

Wet/kharif Season: Favourable rainfed upland, Medium lands and Irrigated lands.

Dry/rabi/ boro/dalua seasons: Irrigated lands

Seedbed Preparation

Dry seed bed

- Select suitable land near water source in middle of June and December for *kharif* and *rabi* crops, respectively.

- Plough the soil 3-4 times or use rotavator after two ploughings for fine tilth and level properly. Apply fertilizer at the rate of 100 kg N, 20 kg P₂ O₅ and 20 kg K₂O with sufficient FYM/compost for 1 ha nursery area.
- Make raised beds of 1 meter width of any convenient length keeping a gap of 30 cm around the beds.
- About one tenth of area of the main field is required as the seed bed.

Wet Seed bed

- Plough the land 4-5 times at 3-4 days interval for a fine puddle.
- Divide the plot in to sub-plots of 1 m x10 m size by making drainage channels on all the four sides. Make well-leveled and banded seed bed for better water retention.
- Apply 5 kg urea, 10 kg SSP with sufficient well-rotted FYM and 5 kg MOP before final leveling.

Selection of Seed

- Prepare a salt solution of 1.06 specific gravity (60 g common salt in 1 liter water). Place the seed in container of the salt solution.
- Remove the floating seeds. Wash the selected seeds in fresh water. Dry under shade.

Seed Rate and treatment

- 30-35 kg seeds/ha for transplanting, and 60 to 75 kg/ha for direct seeding.
- Treat the seed using Carbindazim (Bavistin) @ 2g/kg seed for 24 hours. In the wet seed bed condition this can be done at the time seed soaking for sprouting, soak 10 kg seed in 20 lo of water containing Streptocycline 1.5 g and Captan 20 g for 10 hours.

Sowing time

- **Kharif/Wet season:** Direct seeding in uplands by the first fortnight of June.
- **For transplanting:** Sowing by the first week of June in nursery bed.
- **Dry/boro/Dalua seasons:** End of November to mid-December.

Nursery Management

- After 24 hours of seed soaking drain the water, and cover the seed in gunny bag for germination.
- Sow the sprouted seeds in the nursery bed and keep the beds moist for first few days.
- Maintain a shallow layer of water after the seedlings are about 1 inch high.
- Apply Carbofuran (Furadan 3G) at 15 days after seed germination.
- Top dress the nursery bed 7 days before uprooting.

Land Preparation

- Prepare the land well by using tractor drawn plough in dry condition; it can be done during pre-monsoon rain or immediately after the harvest of the second crop. This will reduce pest and weed incidence.
- Puddle the field twice; give a gap of at least 7-8 days between initial and final puddling for better weed control and nutrient availability. Level the land with leveler to maintain uniform water level throughout the plot.

Seedlings for Transplanting

Kharif/Wet season: 20-25 days old seedlings.

Rabi/Dry season/boro/dalua : Maximum 30 days old seedlings.

Spacing and stand establishment

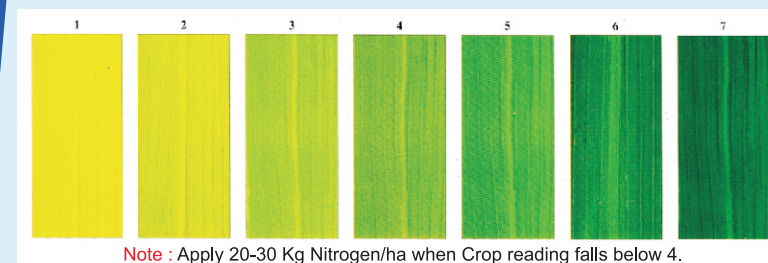
- Transplant by mid July with 15cm x15 cm spacing in *kharif* and mid January with 15cm row to row and 10 cm plant to plant distance in *rabi*.
- 20 to 25 days old seedlings should be transplanted in puddle field with 2-3 seedlings/hill. Gap fill once 7 days after planting

Fertilizer Dose

- **Wet season:** 80:40:40 N, P₂ O₅ and K₂ O kg/ha + 5 t/ha FYM.
- **Dry season:** 120: 60:60 NPK kg/ha + 5 t/ha FYM.
- Apply zinc sulphate @ 25 kg/ha in zinc deficient areas as basal application.
- Soil test based fertilizer application especially for P is preferred over blanket dose

Fertilizer Application

- Apply half of total N, entire amount of P and three fourths of K as basal after draining out the standing water but before final puddling.
- Top dress the remaining N in two equal splits each at 3 weeks after transplanting and at panicle initiation. Also apply remaining one fourth of K at panicle initiation.
- Use Leaf Colour Chart (LCC) based N application for increased N use efficiency



Weed Management

- Spray Pretilachlor 1.6 l/ha or Anilophos (0.5 kg/ha) with 500 liters of water after 4-6 days after planting in a thin film of water for effective control of weeds.
- The product can also be mixed with 50 kg sand or 10 kg urea and broadcasted in the field uniformly. Do not drain out water for 48 hours for best effect.
- Alternatively, hand weed twice at 20 and 40 days after transplanting.

Water Management

- Keep the field under saturated condition for a week after transplanting for establishment and growth of roots.
- Maintain a water level of 3-5 cm during the entire crop growth period after that, the field should be drained prior to top dressing and irrigate after 24-36 hours.
- Drain out water after 15 days from milk formation stage.