

KHARIF CROPS

In-Depth Guide on Rice Cultivation

1.Introduction

Rice (*Oryza sativa*) is a staple food crop in India, primarily grown during the Kharif season. It is cultivated in states like West Bengal, Uttar Pradesh, and Punjab and forms the backbone of India's food security.

2.Climate and Soil Requirements

- Temperature: 20–37°C.
- Rainfall: Requires high rainfall (100–150 cm) or irrigation in regions with less rainfall.
- Soil:
 - Clayey to loamy soils with high water retention.
 - pH: 5.0–6.5.

3.Seed Selection and Preparation

- Varieties:
 - High-yielding: IR 64, MTU 7029 (Swarna).
 - Hybrid: Pusa RH 10.
- Seed Rate: 40–50 kg per hectare.
- Seed Treatment: Soak seeds in Carbendazim solution to prevent seed-borne diseases.

4.Sowing Techniques

- Time of Sowing: June–July.
- Methods:
 - Transplanting after nursery raising (20–25-day-old seedlings).
 - Direct seeding in dry or wet fields.
- Spacing: Maintain 20 cm between rows and 15 cm between plants.

5.Fertilizer Management

- Base Fertilizers:
 - Nitrogen (100 kg/ha), Phosphorus (50 kg/ha), Potassium (50 kg/ha).
- Application: Split Nitrogen into three doses—basal, tillering, and panicle initiation stages.

6.Irrigation Management

- Critical Stages: Tillering, panicle initiation, flowering, and grain filling.
- Maintain standing water (5–7 cm) during the growing season.

7.Pest and Disease Management

- Pests:
 - Brown Planthopper: Spray Imidacloprid (0.02%).
 - Stem Borer: Apply Chlorantraniliprole (0.4%).
- Diseases:
 - Blast: Use Tricyclazole (0.1%).
 - Bacterial Blight: Spray Streptomycin solution.

8.Weed Control

- Use pre-emergence herbicides like Butachlor (1 liter/ha).
- Perform hand weeding at 20 and 40 days after transplanting.

9.Harvesting and Post-Harvest Management

- Harvesting: When grains turn golden yellow and contain 20–25% moisture.
- Threshing: Use threshers or combine harvesters.
- Storage: Dry grains to 12% moisture and store in airtight bins.

10.Yield and Economics

- Yield: 4–6 tons per hectare.
- Cost of Cultivation: ₹30,000–₹40,000 per hectare.
- Market Price: ₹2,500–₹3,000 per quintal.