

Barley Cultivation Guide

I. Introduction

Barley (*Hordeum vulgare*) is an important Rabi cereal crop primarily grown in the northern plains of India. It is adaptable to marginal, saline, or alkaline soils and can be cultivated in rainfed and irrigated conditions. Barley is also grown for malting and fodder purposes.

II. Growth Requirements

| Requirement | Optimal Range | Notes |
|-------------|---|---|
| Temperature | 12°C to 15°C (growth), ~30°C (maturity) | Sensitive to frost during flowering |
| Rainfall | Moderate; low water requirement | Suitable for semi-arid and low rainfall zones |
| Soil | Sandy loam to loam soils | Neutral to mildly saline; pH moderate |

III. Recommended NPK Fertilization (kg/ha)

| Nutrient | Recommended Dosage | Purpose |
|----------------|--------------------|---|
| Nitrogen (N) | 60-80 | Promotes vegetative growth and tillering |
| Phosphorus (P) | 30-40 | Supports root development and early growth |
| Potassium (K) | 20-30 | Improves stress tolerance and grain quality |

Split nitrogen application at sowing and tillering stage is advised for better nutrient use efficiency.

IV. Best Cultivation Practices

- Timely sowing during Rabi season (October-November) for optimum yield.
- Seed rate around 75-100 kg/ha depending on seed size and sowing method.
- Row spacing about 22.5 cm for irrigated lands; 22.5-25 cm for rainfed lands.
- Drill sowing or broadcasting seeds followed by proper land preparation promotes good emergence.
- Minimal irrigation requirement, but moisture is needed during germination and flowering.
- Use disease-resistant varieties and regular pest monitoring.

V. Common Diseases and Pest Management

| Disease | Symptoms/Effects | Control Measures |
|----------------------|-----------------------------------|----------------------------------|
| Rust (Leaf and Stem) | Reddish pustules on leaves, stems | Resistant varieties, fungicides |
| Smut | Black powdery spores on grains | Seed treatment with fungicides |
| Aphids | Stunted growth, yellowing leaves | Insecticides, biological control |
| Powdery Mildew | White powdery growth on leaves | Fungicides, crop rotation |

VI. Types of Barley in India

- Husk-less (Naked) barley preferred for malting and food uses. Varieties include Karan 18, Karan 19.
- Hulled barley suitable for fodder and other purposes. Varieties include Dolma, Kailash, Ratna, Vijay, and Ameru.

NPK Fertilization for Barley

