

10. Cluster Beans (Guar) Cultivation

1. Introduction

Cluster beans (*Cyamopsis tetragonoloba*), commonly known as guar, are a versatile crop used for vegetables, fodder, and industrial gum production. It is widely grown in semi-arid regions of India, especially in Rajasthan, Gujarat, and Haryana.

2. Climate and Soil Requirements

- Temperature: Thrives in warm conditions, with an ideal range of 25–35°C.
- Rainfall: Requires 30–50 cm of rainfall, but excess water can harm growth.
- Soil:
 - Light sandy loam to medium black soil.
 - Soil pH: 6.5–7.5.

3. Seed Selection and Preparation

- Varieties:
 - Pusa Sadabahar: High-yielding, disease-resistant.
 - RGC-936: Preferred for gum production.
 - HG-365: Early-maturing variety.
- Seed Rate: 15–20 kg per hectare.
- Seed Treatment: Treat with Thiram or Carbendazim (2 g/kg) to prevent fungal diseases.

4. Sowing Techniques

- Time of Sowing:
 - Kharif: June–July.
 - Zaid: February–March.
- Method: Line sowing is preferred.
- Spacing: 30–45 cm between rows and 10–15 cm between plants.
- Depth: Sow seeds 2–3 cm deep.

5. Fertilizer Management

- Base Fertilizers:
 - Nitrogen (N): 20–30 kg/ha.
 - Phosphorus (P): 40–50 kg/ha.
 - Potassium (K): Optional based on soil tests.
- Application: Apply all fertilizers as a basal dose before sowing.

6. Irrigation Management

- Provide light irrigation at critical stages like flowering and pod formation. Avoid overwatering to prevent root damage.

7. Pest and Disease Management

- Pests:
 - Pod Borer: Use Spinosad (0.015%).
 - Aphids: Spray Neem oil or Dimethoate (0.03%).
- Diseases:
 - Alternaria Leaf Spot: Use Mancozeb (0.25%).
 - Bacterial Blight: Apply Streptomycin (0.01%).

8. Weed Control

- Use Pendimethalin (1 kg/ha) as a pre-emergence herbicide and hand-weed 20–25 days after sowing for small fields.

9. Harvesting and Post-Harvest Management

- Harvesting:
 - Vegetables: Pluck tender pods 40–60 days after sowing.
 - Gum Production: Harvest mature pods when they turn dry.
- Post-Harvest: Clean and sun-dry seeds before storage in moisture-proof containers.

10. Yield and Economics

- Yield:
 - Vegetables: 8–10 tons per hectare.
 - Seeds: 1–2 tons per hectare (for gum).
- Cost of Cultivation: ₹20,000–₹30,000 per hectare.
- Market Price: ₹2,000–₹5,000 per quintal (varies by type and demand).