



**ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY**  
**AUTONOMOUS INSTITUTION**

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Anjugramam - Kanyakumari Main Road, Palkulam, Varivoor P.O. - 629 401, Kanyakumari District.

# **24AG201 - CROP PRODUCTION TECHNOLOGY**

**UNIT 4**

**PRODUCTION PRACTICES**

**OF AGRICULTURAL**

**CROPS**

- Cool rainy season 350-500mm
- Summer 600-700mm

### **Irrigation schedule**

- Critical stage approach
  - Growth–25-30 DAS
  - Flag leaf–50-55 DAS
  - Flowering–60-70 DAS
  - Grain filling–80-90 DAS

### **Intercultural operations**

- Thinning and gap filling to be completed before 10-15 after emergence
- Weeding
  - Herbicides
    - Atrazine 0.25 for pure crop
    - Pendimethalin for pulses intercropped situation

### **Harvest**

- When the grain becomes hard and less than 25% moisture
- Need not wait for stubble and leaf to dry.
- Harvest the ear head then the plant
- Ear heads are threshed by threshers
- Grains dried and dried at 10-12% moisture

## **GRAIN LEGUMES (PULSES)**

### **1. Red Gram (PIGEON PEA)**

*Cajanus cajan*

#### **Climate**

- Highly drought resistant
- Temp of 18–27° C is desirable



### **Soil**

- Well drained medium heavy loams
- There are cultivars tolerant to
  - Water logging
  - Frost and
  - salinity

### **Varieties**

- Southern (Orissa, AP, Karnataka & TN)
  - SA1 –LD, ICPL87 –SD, KM7–MD
  - For TN alone: COH1 –SD, CO6-MD, COH2-SD, Vamaban1-LD

### **Field preparation**

- Fine seed bed with friable soil with optimum moisture – for germination & growth
- Deep rooted crop—one deep plough followed with harrowing
- Raised bed (2.7m wide), Ridges & furrow, Flat sowing & making furrows at 2.7m

### **Seeds and sowing Seed requirement:**

- 8-10 kg for LD
- 10-12 kg for MD
- 12-15kg for SD

### **Optimum population is 111,000 plants/ha**

- 45x20 or 15 for SD
- 45x30for MD
- 90x30for LD
- Two seeds per hole
- Shallow placing

### **Nutrient management**

- Responds to N upto 25 kg as starter dose
- Good response to P upto 60kg

### **Blanket recommendation**

- Rainfed: –12.5:25:0kgN:P:K/ha
  - Irrigated/ well assured rainfall:–  
25:50:0kgN:P:K /ha

### **Water management**

- Deep rooted system helps to draw moisture from deeper
- Branching, flowering and pod-filling are crucial
- Avoid water stagnation at any stage

### **Weed management**

- Crop weed competition is for 7-8 weeks
- Mulching in between the rows can reduce weeds
- Inter cultivation /hand weeding is must

### **Harvesting**

- When 70-80% pods turn brown cut & dried
- Threshing may be passing stone roller/beating against hard surface
- Seeds may be stored at 10-12% moisture

## **2. Green gram**

*Vigna radiata*

### **Climatic requirement**

- Summer & Kharif in N India
- Winter in S India
- Drought resistant but susceptible to frost, water logging and salinity
- Temperature 30-35°C but upto 40°C
- Rains during flowering detrimental

### **Varieties**

- Many varieties
- In TN
  - Paiyur1
  - ADT2, ADT3
  - CO4, CO5
  - KM2, VBN1, KI



### Season

- Mostly Kharif & summer in north
- Winter for south

### Field preparation

- Generally depends upon season
- Deep ploughing once
- Moderate tilth to surface
- May be beds & channel

### Spacing & seed rate

- 30x10 cm
  - 333,000 optimum plants
  - Seed rate may vary from 15–20kg
  - Summer 25kg

### Nutrient management

- Schedule
  - Rainfed:12.5:25:0kg
  - Irrigated:25:50:0kg

### Water management

- 2-3 irrigations at critical periods –f lowering and pod setting

### Weed management

- Hand weeding or intercultural implements twice
- Pre Emergence application of Fluchloralin 0.75 kg on 3<sup>rd</sup> day after sowing

### Harvest

- At 80% pods turn brown
- Entire plant may be cut dried and threshed and cleaned and stored at 8- 10%

### 3. Black gram

*Vigna mungo*

### Varieties for TN

- T9-65-70d
- CO4-70d
- CO5-70-75d
- KM2-60-65d



- VBN1– 60-65
- ADT3– 70-75d
- ADT5–65d

### Soil, seed bed preparation

- As that of green gram

### Season

- Warm weather with irrigation
- Sowing during winter faces low temp

### Seed rate

- 20to 25kg/ha

### Spacing & seed rate

- 30x10 cm

### Manuring and Weeding as that of green gram Irrigation

- As GG

### Harvest

- As Greengram

## 4. Cowpea - *Vigna unguiculata*

### Varieties

Paiyur1, VBN1, VBN2, CO6, CO(CP)7

### Season

DISTRICT/SEASON	VARIETIES
<b>Adipattam(June-August)</b>	
For all districts except Kanyakumari and Nilgiris	Co6,Co(CP)7,Paiyur1, VBN1
<b>Purattasipattam (September-November)</b>	
Vellore, Thiruvannamalai, Dharmapuri, Salem, Namakkal, Perembalur, Erode, Coimbatore, Madurai, Dindigul, Theni and Virudhunagar	Co6,Co(CP)7,Paiyur1
<b>Margazhi –Thaipattam (December–February)</b>	
Kanchipuram, Thiruvallur, Vellore, Thiruvannamalai, Dharmapuri, Salem, Namakkal, Coimbatore, Erode, Madurai, Dindigul, Theni, Tiruchirappalli, Perambalur, Ariyalur, Karur, Pudukkottai, Tirunelveli and Thoothukudi	Co 2, Co6,Co(CP)7,VBN2



**Field preparation**

Prepare the land to fine tilth and form beds and channels.

**Seed rate**

STRAIN	Quantity of seed required (kg/ha)	
	Pure crop	Mixed crop
Paiyur 1,VBN1,VBN2,CO 6, CO(CP)7	25	12.5

Optimum plant population 3,50,000/ha.

**Nutrient management**

Rainfed:12.5kgN+25kgP<sub>2</sub>O<sub>5</sub>+12.5kgK<sub>2</sub>O+10kgS\*/ha Irrigated: 25 kg N + 50 kg P<sub>2</sub>O<sub>5</sub> + 25 kg K<sub>2</sub>O + 20 kg S\*/ha

**Water management**

- Irrigate immediately after sowing followed by life irrigation on the third day.
- Irrigate at intervals of 7 to 10 days depending upon soil and climatic conditions.
- Flowering and pod formation stages are critical periods when irrigation is a must. Avoid water stagnation at all stages. .

**Weed management**

- Pre-emergence application of Pendimethalin 2 litres on 3 days after sowing using Backpack/ Knapsack/Rocker sprayer.

**Harvest**

- Green pods for use as vegetable can be harvested 45-90daysafter sowing depending on the variety.
- For grains, the crop can be harvested in about 90-125 days after sowing when pods are fully matured.
- The crop should be then dried and threshed, threshed grain should be dried in sun before storage.

## OIL SEEDS AND THEIR IMPORTANCE

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### 1. Ground nut - *Arachis hypogaea*

**Soil**

- Well drained soil is so ideal