# Kharif Arhar (Pigeon pea)
cajanus cajan

Why Pigeon pea

- It is a drought resistant crop due to deep tap root system (upto 1.5 m)

- It fixes nitrogen in the root nodules from air and hence supply nitrogen to plant

- It can be grown in hilly sloppy land whose water holding capacity is very low

- It can be grown with other crops as inter crop.

- It is a very good source of protein

Root Nodules

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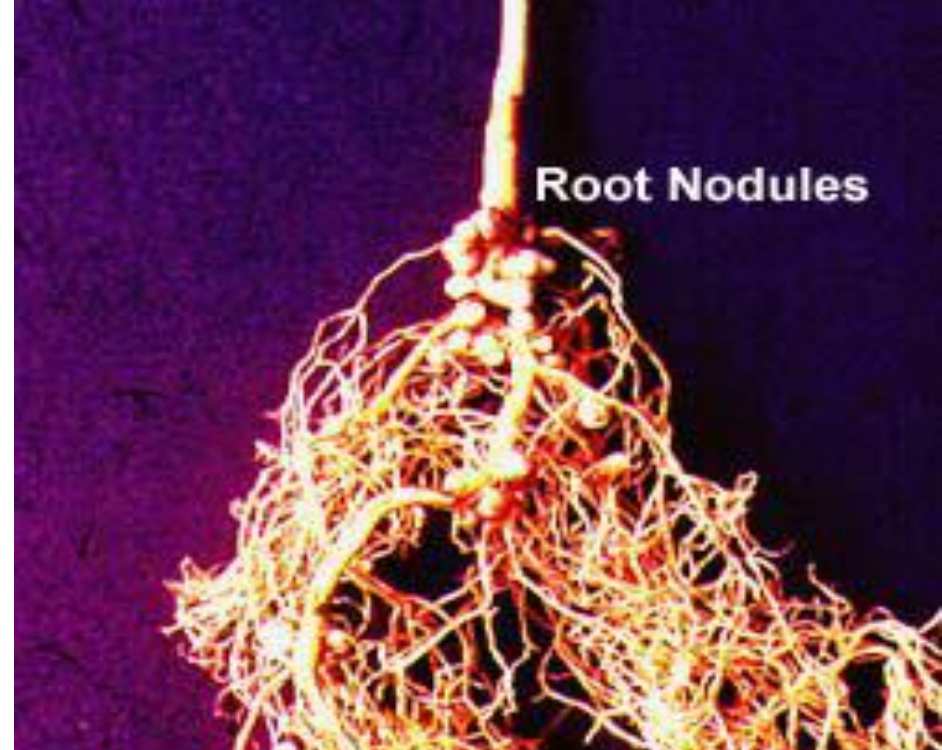
Seed

Good quality seeds suitable in Kharif
  – Maruti- 170 days
  – Asha- 165 days
  – Laxmi- 175 days
  – Selective local verity

• Seed priming with cow urine mixed with water…..

Seed treatment-

Seed disinfection:

4-5 g *Trichloderma viridae- Wet seed with little water and mix 4-5 g of Trichoderma viridae* per kg of seed. Use stickers like gur or *peja*
Or
2-3 g of carbendazim/Thiram per kg of seed

Land

- Upland and Medium upland
- 2-3 ploughs

Apply lime or dolomite @ 2.5 to 4 Q per 1 acre of land during ploughing (depending on soil pH)

Nutrient

Seed application

   seeds are inoculated with a particular *Rhizobium* and phospho bacteria culture. This is mixed with jaggery solution & applied to seed and dried in shade. It increases nodulation & thereby N fixation.

   Dose: 20 g of Rizobium and phospho bacteria culture per kg of seed

Nutrient

- Soil application as basal
  - Compost/FYM as per the availability (20 Q per acre)
- Inorganic fertilizer per acre
  - DAP - 35kg
  - MOP- 13 kg
  - Urea -4 kg
  Or
  - Gromer (14-35-14)-46 kg
  - Urea-3 kg
  - MOP-3 kg

In case of Boron deficiency
Spray @ 1.5 g of Boron per liter of water during flowering

Seed Sowing

Seed rate- 4-4.5 kg per acre

Varity < 140 days
Row to Row-:30-45 c.m.
Plant to Plant: 15-20 c.m.
Variety> 140 days
Row to Row 60 c.m.
Plant to Plant 20 C.m.

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Hand Weeding in Pigeonpea

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1ˢᵗ weeding between 21-25 days

Arhar as Inter crop

- Arhar + Paddy- 2:5 ,   Arhar + Maize – 1:1,   Arhar + Fingermillet – 2:4
- Arhar: Ground nut -1:3,   Arhar + Mung/Black gram- 1:3

Integrated Pest management

- Summer ploughing
- Application of balanced nutrients
- Mannnual picking and killing to control Blister beetle
- Use of Light traps to kill
  - Pod borer and legume pod borer
- Use of Pheromone trap
- Use of Organic and bio pesticides

Manually picking by hand or collecting with an insect net and crushing them without touching them with hand when it occurs as per the stage of crop.

NPV and pheromon trap

- Helicoverpa Nuclear Polyhedrosis Virus (HNPV) to control **Pod borer**

   Dose & Application method:-Use of HNPV with adjuvant like 200ml teepol, tinopal and 500 gms of jaggery at a rate of 500 larval equivalents (LE) per ha repeat the spraying at 15-20 days intervals

- 5 pheromone traps per acre at the time of flowering. Change the Heli leur in every 15 days

- Organic and Bio pesticides
  - Handikhat in every 10 days interval- control pod borer
  - Apply 1 kg of *Beauveria bassiana* with 200 litre of water per acre to control sucking pests
  - Apply neem pesticides to control leaf hopper, mealy bugs and pod borer
- Biological control
  - Cocoons of Chrysopa sps @ 20-40 thousands at an interval of 10 days for 3 to 4 times to control hoppers and mealybugs
  - Eggs of Trichgramma chilonis , Bracon hebetor @ 20 thousand per acre at an interval of 7-10 days for 2 times to control leaf eating caterpillar

Chrysopa sp

Bracon hebetor

Trichogramma chilonis

Chemical control

Blister beetle

10 kg of Chloropyriphos or Carabryl powder per acre

Pod borer

Adult

Egg

Systemic pesticides like
Asatuf (Acephet) @2 gm/ltr

Larva

Aphids

400 ml Dimethoate/ Methyl demeton or 40 ml of Imdiacloprid or 40 g of Thio methoxam in 200 liter of water per acre

Wilting disease

1.5 g carbendazim/ Metalyxyl per lt of water

Cercospora leaf spot

3 to 3.75 g of Mancozeb / Cupper oxychloride or 1.5 g of carbendazim

Sterlity Mosaic disease

Light and dark green mosaic pattern on leaves.

Destroy sources of sterility mosaic innoculum on perennial or ratooned pigeonpea.
Uproot infected plants at an early stage of disease development and destroy them.
Spay of Dicifol to control nematode, one of the carrier of the disease

Sterility mosaic infected plant (right side) without flowers and pods compared to normal plant (left side)

Phytopthora Blight

Spray fungicide like Saaf or Ridomil @ 1 gm per ltr of water @200ltr of water per acre

Production

8-10 Q
per acre