



**Introduction and Expansion of Improved  
Pigeonpea (*Arhar*) Production Technology  
in Rainfed Upland Ecosystems of Odisha**

## **Cultural Management Practices of Pigeonpea**

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# Cultural Management Practices of Pigeonpea

Cultural management practices are measures undertaken by humans which refers to that broad set of management techniques or options which may be manipulated by agricultural producers to achieve their crop production goals (Kennedy et al. 1975).

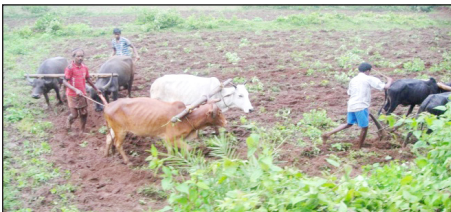
## Field Operation and Management

- Field selection
- Land preparation
  - Fertilizer i.e. @ 100kg/ha DAP
  - Pre- and post-emergence herbicide (i.e Pursuit @ 3ml/L)
- Sowing - Seed rate: pure crop (8-10 kg/ha)  
intercrop (depends on row ratio)
- Irrigation
- Thinning and weeding
- Roguing
- Insect and disease management
- Post-harvest practices
- Foliar Fertilization
- Isolations for seed production

### a. Field Selection

- Well Drained
- Free from salinity
- Free from waterlogging

### b. Land Preparation



*Harrowing*



*Leveling (precision)*



*Fertilizer application and Bed shaping*  
 - Apply 50% of 100 kg/ha DAP and another 50% during hilling-up (2.5 months old crop)



*Ridging (75 cm to 100 cm between rows)*

### **c. Sowing**



*Line sowing (30 cm between plants)*



*Sowing of 2 seeds per hill*

### **d. Thinning**



*Allow one plant per hill to produce more lateral branches*





### e. Weeding

Allow 2-3 weeding practices to avoid competition of fertilizer uptake and sunlight. Weeding during flower initiation is a requirement.



### f. Roguing

- To remove off-type plants (i.e. color of flower, plant height, DT/ NDT plants, color of pods etc.)
- To remove disease infected plants (i.e. SM and Phytophthora blight)



### g. Irrigation

- For irrigated areas. Irrigate 2-3 times during flower initiation till pod development
- For rainfed areas. Irrigation depends on the rainfall

### h. Pests Management

(For more details, please see IPM booklet on pigeonpea)



*Helicoverpa armigera* - Acephate;  
Methomyl (Lannate)



*Maruca vitrata* - Monocrotophos;  
Acephate; Indoxacarb



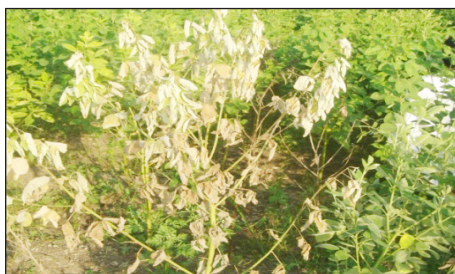
Blister Beetle - hand pick/net;  
Cypermethrin



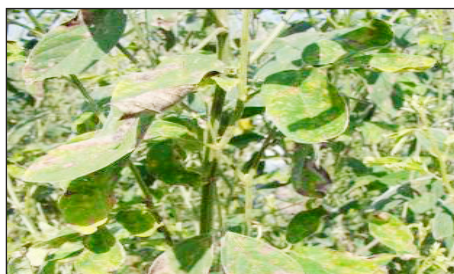
Riptortus bug - Cypermethrin

## i. Disease Management

(For more details, please see IDM booklet on pigeonpea)



*Fusarium Wilt* - Crop rotation; Disease free fields



*Alternaria leaf blight* - Mancozeb (D-M 45)



Sterility Mosaic - Caused by *Eriophyd* mite (vector); Uproot infected plants at early stage; spray with Metasystox @ 0.1% or Dicofol; Thiovet



*Phytophthora blight* - Ridomil MZ 3 g/kg; (Two sprays @ 15 days interval)

## **j. Harvesting**



*Manual harvesting*



*Mechanical harvesting*

## **k. Threshing**



*Manual threshing*



*Mechanical threshing*

## **l. Seed Cleaning**



*Manual seed cleaning*



*Mechanical seed cleaning*

## **m. Seed Storage**

For storing seeds for the next cropping season, use Naphthalene balls @ 1 piece/kg



## Other Important Consideration

- a. Foliar Fertilizer – Spray diluted DAP or Urea at the rate of 2% to 6 % (2 to 3 times) during the vegetative phases of the crop when deemed necessary.
- b. For large scale seed production and commercialization, the use of herbicide as weed control is recommended as long as protective caps are utilized in order not to be in contact with the crop during spraying activity.

## Different forms on how to multiply quality seeds of pigeonpea



*Selfing by using net bags*



*Under covered nets*



*Isolation (minimum of 300 meters for varieties and minimum of 500 meters for hybrids)*



**Soil  
conservation /  
improvement  
and crop  
diversification**

**Excellent  
food**

**Feed and  
fodder**

**Fuel  
wood**



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**International Crops Research Institute  
for the Semi-Arid Tropics**

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world. Covering 6.5 million square kilometers of land in 55 countries, the semi-arid tropics have over 2 billion people, of whom 644 million are the poorest of the poor. ICRISAT innovations help the dryland poor move from poverty to prosperity by harnessing markets while managing risks – a strategy called Inclusive Market-Oriented Development (IMOD).

ICRISAT is headquartered in Patancheru, Telangana, India, with two regional hubs and five country offices in sub-Saharan Africa. It is a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

About ICRISAT: [www.icrisat.org](http://www.icrisat.org)

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