

# Millets

## 1. Jowar

### Varieties along with recommended area

**Varieties:** PSV-1, Palem-2, CSV-10, CSV-11, CSV-13, CSV-15 and Srisaila (PSV 56)



**Srisaila (PSV 56)**

**Low rainfall areas of Rayala seema:** CSV-15, PSV-1

**Normal rainfall areas of Telangana and Coastal districts:** CSV 10, CSV 11, CSV 13, CSV 15, PSV 1, Palem-2, Srisaila (PSV 56)

**Hybrids:** CSH-10, CSH-11, CSH-14, CSH-16, CSH- 18, CSH-21

**Low rainfall areas of Rayala seema:** CSH 6, CSH 14, CSH 23

**Normal rainfall areas of Telangana and Coastal districts:** CSH 10, CSH 11, CSH 16, CSH 18, CSH 21



**RABI Varieties :** NTJ-2, NTJ-4, CSV 216R, CSV 14R, M35-1, Kinnera

**Early rabi areas of Rayala seema :** CSV 14 R, NTJ2, NTJ4, N14

**Normal rabi areas of Telangana and Coastal districts :** CSV 14R, CSV 216R, M35-1, NTJ2, N14

**Hybrids:** CSH-15 R, CSH-16

**Early rabi areas (Maghi) of Rayala seema:** CSH15 R, CSH-16

**Normal rabi areas of Telangana and Coastal districts:** CSH 15R, CSH 19R

**Rice fallows:** CSH-13 R, CSH15 R, CSH-16

### Land preparation

One deep ploughing with mould board plough followed by ploughing with wooden plough twice in summer season. Before sowing, secondary tillage with cultivator to prepare smooth seed bed. Minor land smoothing before sowing helps in better insitu moisture conservation.

### Seed treatment

Treat the seed with Thiomethaxam @ 3 g/kg seed and Thiram or Captan @ 3 g/kg seed.

### Sowing time

Kharif: 1<sup>st</sup> week of June to 2<sup>nd</sup> week of July  
Rabi: 2<sup>nd</sup> fortnight of September to October end



## **Seed rate and Spacing :**

8-10 kg/ha and spacing 45 x 12-15 cm  
Remove excess plants at 15-20 days age of the crop.

## **Fertilizer doses and time of application :**

FYM : 10 t/ha

### **Light soils with low rainfall**

Basal : 30N + 40P + 30K kg/ha

Top : (30-40 days crop) : 30 N kg/ha

### **Fertile soils with assured rainfall**

Basal : 40N + 60P + 40K kg/ha

Top : (30-40 days crop) : 40 N kg/ha

## **Weed control (name of chemical and mechanical):**

- Two manual weedings along with two intercultural operations with danti are effective.
- Pre emergence application of Atrazine @ 4 g/litre with in 48 hrs of sowing coupled with one manual weeding and one intercultural operation is also economical.

## **Witch weed:**

- Pre emergence spray of Atrazine @ 4 g/L.
- Spray Ammonium sulphate @ 50 g/l or Urea 200 g/l on striga plants.
- Destroying the parasites before flowering.

## **Major disease and pest control**

### **Pests**

#### **1. Shoot fly:**

- Deep ploughing to expose larval and pupal stages present in the stubbles.
- Sowing with the onset of monsoon before 15<sup>th</sup> July.

- In the late sown crop, use high seed rate of 10-12 kg/ha and thinning out the affected and extra plants at 4 weeks after sowing.
- Seed treatment with Imidacloprid @ 4 ml/kg of seed or Carbosulfan 50 sp @ 100 g/kg seed.
- In heavy infested areas, soil application of carbofuran 3G at 20 kg/ha in seed furrows.
- Minimize damage by spraying thiodicarb @ 1g/l or lamdacyhalithrin @ 2 ml/l at 7 and 14 days after emergence.

#### **2. Stem borer**

- Deep ploughing to expose larval and pupal stages present in the stubbles.
- Sowing with the onset of monsoon.
- Removal and destruction of dead hearts Intercropping with a non cereal crop.
- Whorl application of Carbofuran 3G @ 10 kg/ha at 25 and 35 days after emergence.

#### **3. Corn leaf Aphid :**

- Lady bird beetles and horse flies devour Aphids
- Spraying of Methyl demeton or Dimethoate @ 2 ml/litre.

#### **4. Ear head bug:**

- Early sowing minimizes bug damage
- Application of carabaryl 5% Malathion 5D @ 20 kg/ha at pre bloom and again at milk stages.

#### **5. Panicle worm :**

- Application of Malathion 5D @ 20 kg/ha
- Spraying of Monocrotophos 1.6 ml/l.

#### **6. Mite:**

- Spray Dicofol @ 3 ml/l or Monocrotophos @ 1.6 ml/l.

## 7. Sorghum midge :

- Application of Malathion 5D @ 20 kg/ha at 90 % ear head emergence stage.

## Diseases

### 1. Grain molds:

- Spray Propiconazole (Tilt) @ 0.5 ml/l twice at 50% flowering and 10-15 days later.

### 2. Smuts:

- Seed treatment with Thiram @ 3 g/kg seed.

### 3. Ergot:

- Mechanical removal of sclerotia from seeds by washing in 2% salt solution followed by rinsing with plain water before sowing.
- Spraying with benlate @ 1 g/l or Propiconazole (Tilt) @ 0.5 ml/l or mancozeb @ 2 g/l at 10% flowering and another spray at 50 % flowering

## Irrigation schedule along with critical stages

In irrigated crop, irrigation should be given at sowing, 20-25 days after sowing, ear head emergence / flowering and grain filling stages.

## Harvesting :

In general the maturity duration is 110-115 days

Quality characteristics

## Expected yield of the variety/Hybrid :

In general the varieties give grain yield of 25 – 30 q/ha and hybrids will give a grain yield of 35-40 q/ha

## Bajra

## Varieties along with recommended area

Open pollinated varieties (Composites & synthetics):

## ICMV 221, ICTP 8203, Raj 171

## Hybrids:

HHB 67, ICMH 356, RHB 121 and PHB - 3

These varieties / hybrids are suitable in all Bajra growing areas of Andhra Pradesh



PHB - 3

## Land preparation

One deep ploughing with mould board plough followed by ploughing with wooden plough twice in summer season. Before sowing, secondary tillage with cultivator to prepare smooth seed bed. Minor land smoothing before sowing helps in better in situ moisture conservation

## Seed treatment :

Treat the seed with Thiram or Captan @ 3 g/kg seed. Soak the seed in 2% (20 g /lit) salt solution for 10 minutes to remove ergot infected seed.

## Sowing time :

Kharif : Complete sowings by 15<sup>th</sup> July

Rabi : September- October

Summer : January 15 – February end

### **Seed rate and Spacing :**

**Seed Rate :** 4 kg/ha 45 x 12 - 15 cm Remove excess plants at 15-20 days age of the crop.

### **Fertilizer doses and time of application**

**FYM: 2-3 t/ha**

### **Irrigated conditions:**

Basal: 40 N + 40 P + 30 K kg/ha

Top (30-35 days crop): 40 N kg/ha

### **Rain fed conditions**

Basal: 30 N + 30 P + 20 K kg/ha

Top (30-35 days crop): 30 N kg/ha

### **Weed control (name of chemical and mechanical)**

- Two manual weedings along with one or two intercultural operations with danti is effective.
- Pre emergence application of weedicide Atrazine @ 4 g/lit with in 48 hrs of sowing coupled with one manual weeding and one intercultural operation is also economical.

### **Major disease and pest control Pests:**

#### **1. White grub:**

- Apply Phorate @ 12 kg/ha or Carbofuran granules @ 20 kg/ha in seed furrows at the time of sowing.

#### **2. Shoot fly:**

- Application of carbofuran 3G at 20 kg/ha in seed furrows
- Minimize damage by spraying thiodicarb @ 1g /l or lamdacyhalothrin @ 2ml/l at 7 & 14 days after emergence.

#### **3. Grey weevil and other leaf feeding and ear head pests:**

- Dust Methyl parathion 2% or Fenvalerate 0.4% or Quinolphos 1.5% @ 25 kg/ha

### **Diseases:**

#### **1. Downy mildew:**

- Treat the seed with Apron SD 35 @ 6 g / kg seed.
- Foliar spray of Ridomil 25WP @ 1 g/lit at 21 days after sowing if infection exceeds 5%.
- Uproot and burn the infected plants.
- Avoid monoculture of particular cultivar

#### **2. Ergot:**

- Dip the seeds in 2 % brine solution, stir and remove the floating seeds and sclerotia, dry the seeds lying at the bottom and sow.
- Need based spray of Mancozeb (2.5 g/lit) or Carbandazem (1gm/lit) or Ziram @ 2 g/litre at boot leaf and flowering stage.
- Plough the field soon after harvest to bury the ergot inoculum

### **Irrigation schedule along with critical stages**

In irrigated crop, irrigation should be given at sowing, tillering, ear head emergence / flowering and grain filling stages.

### **Harvesting :**

In general the maturity duration is 80-85 days

### **Expected yield of the variety:**

In general the varieties give grain yield of 20 – 25 q/ha and hybrids will give a grain yield of 30-35 q/ha

### **Ragi**

#### **Varieties along with recommended area**

#### **KHARIF**

#### **Short duration (80-90 days):**

Maruthi and Champavathi



### Medium duration (100-115 days)

Saptagiri, Kalyani, Bharathi, Godavari, Srichaitanya and Vakula



**Vakula**

### RABI

**Short duration (80-90 days):** Maruthi and Champavathi

**Medium duration (100-115 days):**

Saptagiri, Kalyani, Bharathi, Godavari, Vakula and Hima (White ragi variety suitable for growing in Rabi season)



**Hima**

**For coastal districts:** Bharathi, Srichaitanya, Godavari

**For Telangana area:** Maruthi, Srichaitanya, Godavari

**Rayalseema area:** Saptagiri, Kalyani, and Vakula

### Land preparation

One deep ploughing with mould board plough followed by ploughing with wooden plough

twice in summer season. Before sowing, secondary tillage with cultivator to prepare smooth seed bed. Minor land smoothing before sowing helps in better *in situ* moisture conservation.

### Seed treatment

Treat the seed with Carbendazim @ 2 g or Mancozeb @ 3 g/kg seed.

### Sowing time

Kharif: July- August  
Rabi: November – December  
Summer: January – February

### Seed rate and Spacing :

5 kg/ha (Raise nursery in 400m<sup>2</sup>) and 22.5 cm X 10 cm. Remove excess plants at 15-20 days age of the crop

### Fertilizer doses and time of application

**FYM :** 2-3 t/ha

**Basal :** 30N + 40P + 30K kg/ha

Top (35-40 days crop): 30 N kg/ha

### Weed control (name of chemical and mechanical)

- In line sown crop, 2-3 inter cultivations with one hand weeding.
- In broad cast crop, two hand weedings

### In assured rainfall areas:

- Spray pendimethalin 30 % (stomp) @ 3 ml/lit as pre emergence weedicide application.
- 2, 4-D Sodium salt @ 2 g/lit as post emergence weedicide application around 20-25 days after planting.

### Major disease and pest control

#### Pests:

#### 1. Army worms and Cut worms:

- Dust Malathion 5% or Phosalone 5% or Quinolphos 1.5% @ 20-25 kg/ha.



**Krishnadevaraya**

- Spray chloripyriphos @ 2.5 ml/lit or quinolphos 2 ml/l

## 2. Leaf aphid:

- Spray Dimethoate 2 ml/l

## 3. Stem borers:

- Spray Dimethoate 2 ml/l or Phosphamidon 2 ml/l or Monocrotophos 1.6 ml/l

## 4. Ear head caterpillars:

- Dust Malathion 5% or Phosalone 5% or Quinolphos 1.5% @ 20-25 kg/ha. Spray chloropyrophos @ 2ml/L

## Diseases:

### 1. Blast:

- Treat the seed with Carbendazim @ 2g / kg seed
- If necessary spray the nursery with Carbendazim 1g/l, or Kitazin 2 ml/l or Saaf 2.5 g/l
- Spray any of the above fungicides at 50% flowering and repeat 10 days later to control neck/ finger blast.

### 2. Brown leaf spot :

- Damage could be severe if the crop is subjected to drought or nutrition deficiency. The disease can be effectively managed by proper nutrition and water management.
- Need based spray of Mancozeb or Saaf 2.5 g/l

### 3. leaf blight:

- Seed treatment with captan or thiram @ 3g/l
- Spray mancozeb @ 2.5 g/l

## Irrigation schedule along with critical stages

In irrigated crop, irrigation should be given at 3 days after transplanting, tillering, ear head emergence / flowering and grain filling stages.

## Harvesting

For short duration varieties : 80-90 days

For medium duration varieties: 110 – 115 days

For long duration varieties: 120-130 days

## Expected yield of the variety:

In general the varieties give grain yield of 25 – 35 q/ha

## Varieties along with recommended area

### Korra

### KHARIF AND RABI

Prasad, Krishnadevaraya, Narasimharaya, Srilakshmi, Suryanandi and SiA 3085 These varieties are recommended for Andhra Pradesh korra growing areas

## Land preparation:

One deep ploughing with mould board plough followed by ploughing with wooden plough twice in summer season. Before sowing, secondary tillage with cultivator to prepare smooth seed bed. Minor land smoothing before sowing helps in better insitu moisture conservation.

## Seed treatment

Treat the seed with Carbendazim @ 2g / kg seed

## Sowing time

Kharif: July- August

Rabi: December – January

## Spacing

### Seed rate and Spacing :

5 kg/ha for line sowing

10 kg/ha for broad casting

Line sowing : 25 x 10cm

### Fertilizer doses and time of application :

FYM : 5 t/ha

Basal : 20N + 30P + 0K kg/ha

Top (30 days crop) : 20 N kg/ha

### Weed control (name of chemical and mechanical) :

In line sown crop, 2-3 inter cultivations with one hand weeding. In broadcasted crop, two hand weedings.

### Major disease and pest control

#### PESTS

#### Army worms, Cut worms and Leaf scraping beetles:

Need based dust application of Malathion 5% @ 20 -25 kg/ha. Spray chloripyriphos 2.5 ml or quinolphos 2 ml/l

#### DISEASES

##### 1. Blast, Brown spot and Rust:

If these diseases appear at the early stages of the crop, spray Mancozeb 2.5 g/l.

**2. Grain smut:** Seed treatment with Carbendazim @ 2 g/ kg seed.

**3. Downy mildew:** Seed treatment with Ridomil MZ @ 2 g/l or metalaxyl @ 3 g/Kg seed.

Roguing out and destroying the affected plants.

Spray 1g/l metalaxyl or 2.5 g/l mancozeb.

## Irrigation schedule along with critical stages

In irrigated crop, irrigation should be given after sowing, tillering, ear head emergence / flowering and grain filling stages.

### Harvesting For early duration varieties:

70-75 days For medium duration varieties:  
80-85 days

### Quality characteristics : —

### Expected yield of the variety:

In general these varieties gives grain yield of 25 - 30 q/ha

## Sama

Varieties along with recommended area

### KHARIF :

OLM 20, OLM 36, OLM 203 and Co 2  
These varieties can be grown in Andhra Pradesh

### Land preparation:

One deep ploughing with mould board plough followed by ploughing with wooden plough twice in summer season. Before sowing, secondary tillage with cultivator to prepare smooth seed bed. Minor land smoothing before sowing helps in better *in situ* moisture conservation.

### Seed treatment:

Treat the seed with Carbendazim @ 2g / kg seed

### Sowing time:

Kharif: June - July

### Seed rate and Spacing:

8 kg/ha and 25 cm X 10 cm Spacing

### Fertilizer doses and time of application:

FYM: 5 t/ha



20:20:20 NPK kg/ha - Basal

**Weed control (name of chemical and mechanical)**

In line sown crops- 2-3 inter cultivations with one hand weeding. In broadcasted crop- Two hand weedings.

**Major disease and pest control**

**PESTS**

**Shoot fly:**

Early sowing; Reduce Nitrogen by 50 % and replace FYM or bio fertilizers.

**DISEASES:**

**Grain smut:**

Seed treatment with carbendazim @ 2 g/kg seed

**Irrigation schedule along with critical stages:**

In irrigated crop, irrigation should be given at tillering, ear head emergence / flowering and grain filling stages.

**Harvesting:**

In general the maturity duration is 100-105 days

**Quality characteristics : —**

**Expected yield of the variety:**

In general these varieties gives grain yield of 10 - 15 q/ha

