

## (V) HORSEGRAM (*Macrotyloma uniflorum*)

### CLIMATE REQUIREMENT

T_Max°C	T_Min°C	Optimum °C	Rainfall mm	Altitude m MSL
42	20	25 - 32	200 - 700	800

Tropical crops. Extremely drought - resistant crop. Moderately warm, dry climatic conditions are suitable for its optimum growth. It does not grow well on higher altitudes because of cool and wet climate.

### I. SEASON AND VARIETIES

DISTRICT/SEASON	VARIETIES
<b>November (Winter season) (Rainfed)</b> All districts except The Nilgiris and Kanyakumari	Paiyur 2

### II. Description of Horsegram varieties

Particulars	Paiyur 2
Year of Release	1998
Year of Notification	SO.425(E)/08.06.1999
Parentage	Gamma irradiation of Co 1
50% flowering(days)	45-50
Maturity Duration (days)	100-105
Grain yield(kg/ha)	
Rainfed	870
Plant height (cm)	40-45
Branches	2 -3 branches
Colour of grain	Pale brown
100 grain wt (g)	3.5

### III. SEED RATE

For a pure crop 20 kg/ha is needed.

## MANAGEMENT OF FIELD OPERATIONS

### 1. FIELD PREPARATION

Prepare the land to fine tilth.

### 2. SEED TREATMENT WITH FUNGICIDES

Treat the seeds with any one of the following fungicides. Carbendazim or Thiram at 2 g/kg seed.

### 3. FERTILIZER RECOMMENDATION

Apply basally 12.5 t/ha FYM/Compost, 12.5 kg/ha Nitrogen, 25 kg/ha Phosphorus , 12.5 kg/ha Potassium if soil is deficient in NPK status. Application of 25 kg ZnSO<sub>4</sub>, 25 kg FeSO<sub>4</sub> + FYM can be followed if the soil is deficient in Zn and Fe.

### 4. SEED TREATMENT WITH BIOFERTILIZER

Treat the seeds with one packet (200 g/ha) of Rhizobial culture and one packet (200 g/ha) of Phosphobacteria developed at TNAU using rice kanji as binder. If the seed treatment is not carried out apply 10 packets of Phosphobacteria with 25 kg of FYM and 25 kg of soil before sowing. Dry the biofertilizer treated seeds in shade for 15 minutes before sowing.

### 4. SOWING

Dibble the seeds with a spacing of 30 x 10 cm.

### 5. WEED MANAGEMENT

Give one weeding and hoeing on 25-30 days after sowing

### 6. HARVESTING

Harvest the matured whole plant, thresh and extract seeds

## CROP PROTECTION

**Seed treatment:** Treat the seeds with Carbendazim @ 2 g/kg or Thiram @ 4 g/kg

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## **HORSE GRAM - SEED PRODUCTION**

### **VARIETAL SEED PRODUCTION**

#### **Land requirement**

- Land should be free of volunteer plants. The previous crop should not be of the same variety or other varieties of the same crop. It can be the same variety if it is certified as per the procedures of certification agency.

#### **Isolation**

- For certified / quality seed production leave a distance of 10 m all around the field from the same and other varieties of horsegram.

#### **Season**

- October - November.

#### **Pre-sowing seed treatment**

- Treat the seeds with Carbendazim @ 2 g / kg of seed.
- Priming the seeds with 100 ppm ZnSO<sub>4</sub> @ 1:1 seed to solution ratio for 3 hours and drying back to original moisture content.

#### **Crop management**

- Foliar spray of 0.5 % ZnSO<sub>4</sub> at 50 % flowering for enhancing the productivity
- Spray Magnesium chloride against any Chlorotic symptom @ 6 g / litre with a power sprayer for 2 - 3 times at 5 days interval.

#### **Intercultural operation**

- Clip the tendrils to promote flower production.

#### **Harvesting**

- Harvest the pods at once when 75 - 80 % of the pods turned into yellowish brown in colour.
- Timely harvest is essential; care to be taken not to expose the pods to rain or very moist weather which may change the seed coat colour from light brown to dark brown or light black.

**Seed grading**

- Grade the seeds with round perforated metal sieves having 8 / 64" diameter.
- Remove the discoloured seeds.

**Storage**

- Store the seeds with a seed moisture content of 8 - 9 % in gunny or cloth bags for short term storage (8 - 9 months).
- Store the seeds with a seed moisture content of 7 - 8 % in poly lined gunny bag for medium term storage (12 - 15 months).
- Store the seeds with a seed moisture content less than 7 % in 700 gauge polythene bag for long term storage (more than 15 months).

**(vi) BENGALGRAM (*Cicer arietinum* L.)****CLIMATE REQUIREMENT**

T_Max°C	T_Min°C	Optimum °C	Rainfall mm	Altitude m MSL
35 - 45	6 - 8	20 - 25	500 - 800	2500

Tropical and subtropical winter season crop. The field should have loose tilth and good drainage. Long day plant. Severe cold and frost at the time of flowering causes detrimental effect to gram seed development.

**CROP IMPROVEMENT****i. SEASON AND VARIETIES**

District /Season	Varieties
November (Winter season) Rainfed Vellore, Tiruvannamalai, Salem, Namakkal, Tiruchirapalli, Perambalur, Karur, Dharmapuri, Pudukottai, Erode, Coimbatore, Madurai, Dindigul, Theni, Virudhunagar, Ramanathapuram, Sivagangai, Tirunelveli, Thoothukudi	CO 4