

## COWPEA

*Vigna unguiculata* (2n = 22)

**Place of origin** : India

**Putative parent** : Wild sub species *V. unguiculata* SSP. *dekindtiana* or SSP. *menensis*

### **Classification :**

According to Faris 1965 three subspecies are recognised.

1. *Vigna unguiculata* subsp. *unguiculata* (Syn V.u. subsp. *catjang*) - grain cowpea : Primitive of all cowpea types. Pods 8 to 13cm long. Neither flabby nor inflated. Pods remain erect at maturity.
2. *V. unguiculata* subsp. *sinensis* - Grain type cowpea. Pod length 20 to 30 cm. Pods are not inflated. Pods fibrous when green. The stature of pods are pendent when matured. Seed size medium 6-9 mm. Seeds are closely packed in the pod.
3. *V. unguiculata* subsp. *sesquipedalis* - Yard long bean - vegetable cowpea: Pod size may be 30 to 100 cm, pendent. No fibre content is seen in pods. Seeds are sparsely arranged, kidney shaped and usually double coloured. Pods inflated when green, shriveled on drying.

### **Distinguishing feature :**

- \* Kidney shaped seed
- \* White hilum surrounded by brown or black ring.
- \* Pubescent throughout plant body.

### **Breeding objectives.**

#### **1. Breeding for medium duration high yielding varieties for dry land conditions**

- Co1 - old variety resistance to YMV. Indeterminate Plant habit.
- Co4 - 85 days duration. Seed colour mottled
- C 152 - 85 days, buff color seed.

#### **2. Breeding for short duration varieties suited for irrigated and mixed cropping conditions.**

- Pusa do fasli - Short duration variety
- Co6 - 70 days durations.

#### **3. Breeding for vegetable cowpea**

- Co 2 - (C 521 x C 419), VBN 2 Selection from IT 81-D-1228-1 mottled seed.

#### **4. Breeding for disease resistance**

- Aphid borne mosaic virus
- Co6 - (Ms 9804 x C 152)
- Cercospora leaf spot
- Fusarium wilt
- YMV - Co1 resistant.

## 5. Breeding for pest resistance

Leaf hopper - Antibiosis and tolerance

Aphids - Antibiosis and tolerance

Pod borer - Antibiosis

## 6. Breeding for Forage cowpea.

Var. Co5 from Co 1 by gamma irradiation

### Breeding Methods :

#### 1. Introduction

Iron cowpea

Russian giant.

2. **Selection** : PLS cowpea Co1 is PLS from C 57 a local collection from Shirgali

#### 3. Hybridisation and selection

a) Intervarietal

Co6 (Ms 9804 x C 152

Co2 (C 521 x C 419)

b) Interspecific

*V.u* x *V.vexillata* - (having tuberous roots which is edible)

*V.u* x *V.umbellata*.

#### 4. Mutation breeding

Co5 Forage cowpea

#### 5. Embryo rescue technique

For inter-specific crosses.

### Ideal plant type

**Short duration** : Determinate plant with high harvest index The branching must be erect. Flower drop to be minimum. Bushy plants are ideal

#### Long duration types.

Indeterminate plant habit with steady growth rate.

## COWPEA VARIETIES FOR TAMIL NADU

### VARIETIES

Varieties	Parentage	Duration (days)
Co2	Hybrid derivative (C 521 x C 419)	90
Co 3	Pureline from C 152 Vegetable type	80
Co 4	Selection from Russian Giant	85
KM 1	Hybrid derivative (JC 5 x Dofasli)	60-65
Paiyur 1	Selection from VM 16	90
Co 6	MS 9804 x C152	65-70
Co 5	Mutant of Co 1 Forage Cowpea	100

**LAB LAB** (2n=22, 24)  
*Lab lab purpureus* var. *typicus*  
 Garden bean  
 ‘Pandal avarai’

*Lab lab purpureus* var. *lignosus*  
 Field bean  
 Mochai.

**Origin** : India

**Distribution** : India, Central America, China and Africa.

In India mostly cultivated, in southern states of Tamil Nadu, Karnataka, Andhra Pradesh.

*Var typicus* :

Perennial. Twining herb. Cultivated as an annual. The pods are long, tapering. The long axis of seeds parallel to the suture. With out oilglands and ‘Mochai’ smell. Entire pod is edible as vegetable.

*Var. lignosus*

Semi erect bushy, perennial usually grown as annual. The pods are relatively shorter, oblong and fibrous 4 to 6 almost round seeded. Seeds vertical to the suture. Plants give ‘mochai’ odour.

	<b>Avarai</b>	<b>Mochai</b>
Habit	Perennial Twining herb requires support for normal performance	Semi erect bushy perennial, cultivated as annual
Plant part	No ‘Mochai’ odour	‘Mochai’ odour present
Pod	Whole pod as vegetable. matured green seeds vegetable	Green seeds alone as vegetable pericarp tough, parchment like.
Seed arrangement	Parallel to the length of suture	Vertical
Photosensitivity	Photosensitive	Photosensitive

**Breeding objectives:**

**To evolve non season bound vegetable type, short duration varieties.**

In Mochai there is one non season bound, short duration - Thenkasi local DL 3196. By crossing this with Panthal avarai, short duration, non season bound varieties were evolved. Example Co 11, Co 12, Co 13.

Varieties : Mochai  
 Co 1 Pure line selection  
 Co 2 Pure line selection  
 Avarai (Bushy type) of MS 98678.  
 Co 9 Natural mutant of Co 6  
 Co 11, Co 12, Co 13