

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

(vii) GARDEN LAB LAB (AVARAI)

(*Lab lab purpureus* (L.) var. *typicus*.)

CLIMATE REQUIREMENT

T_Max°C	T_Min°C	Optimum °C	Rainfall mm	Altitude m MSL
42	14	22–28	650 - 3000	2000 - 2400

Tropical and sub tropical crop. Lablab is a summer - growing annual or occasionally short - lived perennial forage legume. Lablab tolerates some flooding but does not withstand poor drainage or prolonged waterlogging. Lablab does better in full sunlight.

CROP IMPROVEMENT

I. SEASON AND VARIETIES

District/season	Varieties
Adipattam (July - Aug) Kanjipuram, Tiruvallur, Dharmapuri, Coimbatore, Madurai, Dindigul, Theni, Vellore, Tiruvannamalai, Ramanathapuram, Virudhunagar, Sivagangai, Tirunelveli, Thoothukudi, Salem, Namakkal, Thanjavur, Tiruvarur, Nagapattinam, Tiruchirapalli, Perambalur, Karur, Pudukkottai, Kanyakumari, Erode	CO (Gb) 14
Puratasipattam (September - November) Kancheepuram, Tiruvallur, Tiruchirapalli, Perambalur, Karur, Vellore, Tiruvannamalai, Cuddalore, Villupuram, Dharmapuri, Salem, Namakkal, Pudukkottai, Erode, Coimbatore, Madurai, Dindigul, Theni, Ramanathapuram, Sivagangai, Virudhunagar, Tirunelveli, Thoothukudi, Thanjavur, Tiruvarur, Nagapattinam,	CO (Gb) 14
Summer (April) Kanchipuram, Tiruvallur, Vellore, Tiruvannamalai, Cuddalore, Villupuram, Dharmapuri, Salem,	CO (Gb) 14

Namakkal, Thanjavur, Tiruvarur, Nagapattinam, Kanyakumari, Pudukkottai, Erode, Coimbatore, Madurai, Dindigul, Theni, Ramanathapuram, Virudhunagar, Tirunelveli, Thoothukudi, Sivagangai,	
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II. DESCRIPTION OF AVARAI VARIETY

PARTICULARS	CO (Gb)14
Parentage	Cross derivative of CO 9 X CO 4
Year of release	2007
1 st flowering(days)	35-40
Duration (days)	80-85 days(seed to seed) 70-75 days(vegetable type)
Grain yield(kg/ha)	
Irrigated (kg/ha)	7584 Green pod
Habit	Dwarf ,bushy without tendrils
Height (cm)	56-62
Colour of Flowers	white
Colour of pod	Green
Shape of pod	flat
Colour of grain	Reddish brown
100 seed weight (g)	34-36

I. SEED RATE

Particulars	Quantity of seed required kg/ha	
	Sole crop	Mixed Crop
CO (Gb) 14	25	-

CROP MANAGEMENT

II. MANAGEMENT OF FIELD OPERATIONS

1. FIELD PREPARATION

Prepare the land to fine tilth. Form beds and channels for bushy types.

2. SEED TREATMENT WITH FUNGICIDES

Treat the seeds with Carbendazim (or) Thiram @ 2g/kg of seed 24hrs before sowing (or) with talc formulation of *Trichoderma viride* @ 4 g/kg seed (or) *Pseudomonas fluorescens*@ 10 g/kg seed. Biocontrol agents are compatible

with biofertilizers. First treat the seeds with biocontrol agents and then with Rhizobium. Fungicides and biocontrol agents are incompatible.

3. SEED TREATMENT WITH BACTERIAL CULTURE

Fungicide treated seeds should be again treated with bacterial culture. There should be an interval of atleast 24 hours between fungicidal and bacterial culture treatments. Three packets of bacterial culture are sufficient for treating seeds required for one ha. The bacterial culture slurry may be prepared with rice kanji. Dry the inoculated seeds in shade for 15 minutes before sowing.

4. FERTILIZER APPLICATION

(a) Apply fertilizers basally before sowing.

Rainfed : 12.5 kg N + 25 kg P_2O_5 + 12.5 kg K_2O + 10 kg S*/ha Irrigated : 25 kg N + 50 kg P_2O_5 + 25 kg K_2O + 20 kg S*/ha

*Note : Applied in the form of Gypsum if Single Super Phosphate is not applied as a source of phosphorus

(b) Soil application of 25 kg $ZnSO_4$ /ha 10 kg Borax, 5 kg $CuSO_4$ under irrigated condition if the soil is deficient in respective nutrients.

5. SOWING

Dibble the seeds adopting the following spacing. Varieties

CO (Gb) 1 : 45 cm X 30 cm

6. WEED MANAGEMENT

Pre emergence application of Pendimethalin @ 0.75 litres/ha on 3 days after sowing using Backpack/ Knapsack/Rocker sprayer fitted with flat fan nozzle using 500 litres of water for spraying one ha. After this, one hand weeding on 40-45 days after sowing gives weed free environment throughout the crop period.

If herbicide is applied give two hand weedings on 25 and 45 days after sowing.

7. WATER MANAGEMENT

Irrigate immediately after sowing, followed by life irrigation on third day. Irrigate at an interval of 7 to 10 days depending upon soil and climatic conditions. Flowering and pod formation stages are critical periods when irrigation is a must. Avoid water stagnation at all stages. Apply KCl at the rate of 0.5 percent as foliar spray during vegetative stage if there is moisture stress.

8. PRUNING TECHNIQUE

A spacing of about 10 feet between lines and four feet between plants are adopted. Pits are dug and two to three seeds are sown in the middle of the pit.

One healthy seedling is allowed to grow and the rest removed. The vine is propped with a stick. When the vine reaches the pandal, the terminal bud is nipped. Allow the branches to trail over the pandal. Each branch may be pruned at three feet length so that the pandal is covered with vines. Branches arising on the main vine below the pandal are removed. When flowering starts, prune the tip of the branches bearing inflorescence having three nodes from the productive axil. Continue this procedure throughout the reproductive phase.

9. HARVESTING

Pick the pods when they are completely dry. Thresh the pods and clean the beans. Pick the tender pods once in a week for vegetable purpose.

CROP PROTECTION

A. Pest management

Economic threshold level for important pests

Pest	ETL
Aphids	20 numbers per 2.5 cm shoot length
Spotted pod borer	3 larvae per plant
Gram caterpillar	10% of affected pods

Pest management strategies

Pests	Management strategies
Aphid <i>Aphis craccivora</i>	Spray any one of the following : Methyl demeton 25 EC 500 ml/ha Dimethoate 30 EC 500 ml/ha
Spotted pod borer <i>Maruca vitrata</i>	Thiodicarb 75% WP 750g/ha

Gram caterpillar <i>Helicoverpa armigera</i>	• Pheromone traps for <i>Helicoverpa armigera</i> 12/ha • Bird perches 50/ha • Mechanical collection of grown up larva and blister beetle • Ha NPV 3 x 10¹² POB/ha in 0.1% teepol • <i>Bacillus thuringiensis</i> var <i>kurstaki</i>
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	5%WP 1000-1250 g/ha (Note : Insecticide / Ha NPV spray should be made when the larvae are upto third instar) Apply any one of the following insecticides: Azadirachtin 0.03 % WSP 2.5kg/ha Benfuracarb 40% EC 2.5l/ha Chlorantraniliprole 18.5% SC 150ml/ha Chlorpyrifos 20 EC 1250 ml / ha Emamectin benzoate 5% SG 220 g/ha Ethion 50% EC 1.0 l/ha Flubendiamide 39.35 % SC 100ml / ha Indoxacarb 14.5% SC 350 ml/ha Indoxacarb 15.8% SC 333 ml/ha Lufenuron 5.4% EC 600ml/ha Methomyl 40%SP 750g/ha Monocrotophos 36%SL 625-1250ml/ha Neem oil 2% Quinalphos 1.5%DP 23kg/ha Quinalphos 25 %EC 1400ml/ha Spinosad 45%SC 125 ml/ha Thiodicarb 75 WP 625g / ha
Pod bug <i>Riptortus pedestris</i> <i>Clavigralla gibbosa</i>	• Dimethoate 30% EC 500ml/ha • Methyl demeton 25% EC 500ml/ha
Storage pests Bruchid - <i>Callosobruchus chinensis</i>	Dry the seeds adequately to reduce moisture level to 10%. Use pitfall traps or two in one model trap to assess the time of emergence of field carried over pulse beetle in storage and accordingly sun-dry the produce. Mix Malathion 5 D 1 kg for every 100 kg seed Pack in polythene lined gunny bags for storage

DISEASE MANAGEMENT

Seed treatment: Treat the seeds with *T. asperellum* @ 4 g or *P. fluorescens* @ 10 g/kg or carbendazim @ 2 g/kg or thiram @ 4 g/kg of seeds

Disease	Recommendations
Anthrachnose and die-back: <i>Colletotrichum lindemuthianum</i>	Spray mancozeb @ 1000g or carbendazim @ 250 g/ha soon after the appearance of the disease and if necessary, spray once again a fortnight later

GARDEN LAB LAB (AVARAI) - 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 of the same variety if it is certified as per the procedures of certification agency.

Isolation

- For certified seed production leave a distance of 5 m all around the field from the same and other varieties of the crop.

Pre-harvest sanitation spray

- Spray 0.07 % malathion before harvesting the pods to avoid bruchid infestation.

Harvest

- Harvest the pods when they turn straw yellow in colour.
- Discard the terminal pods for seed purpose as they contain immature seeds.
- Dry the pods to 15 - 18 % moisture content.

Drying

- Dry the seeds to 8 - 10 % moisture content.

Seed grading

- Grade the seeds using 18 / 64" round perforated sieves.
- Remove the broken and immature seeds.
- Dry the seeds to 7 to 8 per cent moisture content.

Pre-storage seed treatment

- Treat the seeds with Carbendazim at 2 g / kg of seed along with Carbaryl at 200 mg / kg of seed.
- Treat seeds with Halogen mixture ($\text{CaOCl}_2 + \text{CaCO}_3 + \text{arappu}$ (*Albizzia amara*) leaf powder mixed in the ratio of 5:4:1 @ 3 g / kg as eco-friendly treatment.

Storage

- Store the seeds with a seed moisture content of 9 - 10% in gunny or cloth bags for short term storage (8-9 months).
- Store the seeds with a seed moisture content of 8 - 9 % in polylined gunny bag for medium term storage (12 - 15 months).
- Store the seeds with a seed moisture content less than 8 % in 700 gauge polythene bag for long term storage (more than 15 months).

(viii) FIELD LAB-LAB (MOCHAI) (*Lab lab purpureus* (L.) var. *ignosus*)

CLIMATE REQUIREMENT

T_Max°C	T_Min°C	Optimum °C	Rainfall mm	Altitude m MSL
35	4 - 6	18 - 30	800 - 1000	1800 - 3000

Tropical and sub tropical crop. Hot weather and drought stress are damaging to peas during the flowering period. Field peas can be grown as a winter crop in warm and temperate areas because pea seedlings have considerable frost resistance. High humidity is harmful to pea crop due to incidence of disease. Short day plant.

CROP IMPROVEMENT

District /Season	Varieties
All districts except Nilgiris All throughout the year	CO 2

II. Description of mochai variety

PARTICULARS	Co 2
Year of Release	1984
Year of Notification	SO.596(E)/13.08.1984
Parentage	Derivative of Co 8 X Co 1
50% flowering(days)	35-45