FACT SHEET:
PIGEON PEA - *Cajanus cajan*

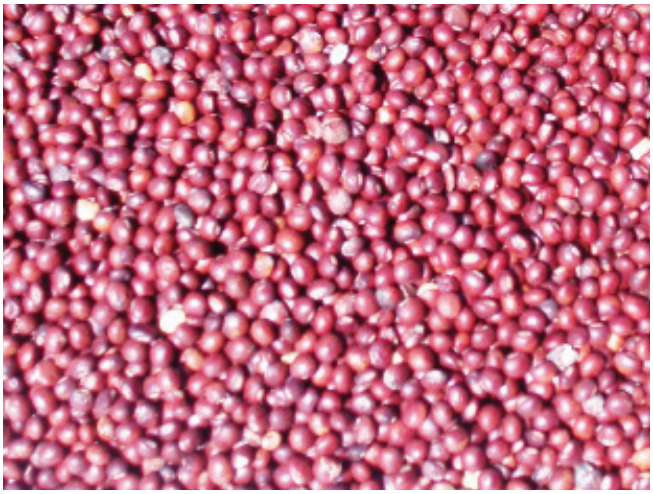
Legalega Research Station
Horticulture Unit

Pigeon pea is a drought tolerant crop. It is one of the important leguminous crop consumed fresh as vegetable or matured peas as dhal. The green and dry peas can be cooked in many different dishes and are very nutritious, having about 20% protein. Pigeon pea improves soil fertility by fixing atmospheric nitrogen. It can be grown as a cover crop, green manure or as intercrop in many sustainable farming systems.

NEW IMPROVED VARIETIES
Bharpur non-seasonal for dhal

Other recommended Varieties:
Kamica and Jaagriti photoperiod sensitive (seasonal) for Dhal.

Maturity:
Kamica - 145 to 155 days (dry)
Jaagriti - 90-110 days (dry)
Bharpur - 95 to 110 days (dry)



NUTRITIONAL FACTS:
KRS Chemistry Lab

Nitrogen %	2.9-3.2
Calcium %	0.3
Magnesium %	0.2
Sodium %	<0.01
Copper (mg/kg)	16.1
Iron (mg/kg	42.5
Zinc (mg/kg)	36.4
Crude Protein%	20.0
Moisture %	15.1
Crude ash %	4.1
Phosphorus %	0.3
Potassium %	2.2
Energy MJ/kg	16.9

PLANTING TIME
Kamica and Jaagriti is photoperiod sensitive (seasonal). Therefore planting from February to June is recommended. Bharpur are photoperiod non- sensitive (non-seasonal) and can be planted from February to October.

Avoid planting late in the year. Wetter months will induce vegetative growth and less fruiting.

PLANTING DENSITY
Fertile soils – 65cm between rows and 20cm within rows. (mechanised)
Poor soils – 50cm - 60cm between rows and 10cm – 20cm within rows. (manual)

FERTILIZER REQUIREMENT
Mixture of 100kg Blend A and 100kg Blend B, applied as basal application. (Lower rates on more fertile soil depending on soil analysis results). *Apply Molybdenum* at the rate of 1kg/ ha at 2 weeks and 6 weeks after sowing. Soil analysis should be done before fertilizer application.

WEED CONTROL
Hoeing or mechanical inter-row cultivation can be done as and when required.

PEST CONTROL
For control of Bean pod borers (*Maruca testulalis*)

- *Apply Prevathon at the rate of 10-15ml to 10 Litre of water*
- *Apply Bifenthrin at the rate of 15-20ml to 16 Litre of water*
- *Apply Multiguard at the rate of 16ml to 16 Litre of water*

Spray when eggs appear on the flowers. Regular inspection of the pest during flowering and after each harvest is necessary. *For control of Aphids, Leaf miners and other pests Bifenthrin*

12 - 16ml in 16 Litre of water

HARVESTING:
Dry pod - 95 -155 days

STORAGE:
For long storage, seeds are treated with insecticide (Carbacide) and fungicide (Mancozeb) at the rate of 1gram/ kg of seed or coated with a thin layer of cooking oil (3ml/100g of seeds) to prevent weevils from attacking.

Pulses in Organic Agriculture
Pulses can be used in organic agriculture as rotational, for intercropping or for green manuring and with good agronomic practices it can vastly lead to an increase in yield. It provides food security with least negative impacts on the environment fetching premium price in the market.

Pulses thrive well under drought and marginal conditions adding organic matter to improve soil health providing more nutrient availability.

Seed Rate (kg/ha), Expected Yield (t/ha) and Gross Margin

Variety	Seed rate kg/ ha	Seed rate 1/4 acre	Greenpod yield t/ha	Dry seed yield t/ha	Gross Margin 1.2t/Ha (dry)@ $15.00/kg
Kamica	13 kg	1.3 kg	-	1.2 to 2 tonnes	**Income $16,200** **Expenses $8,604.00** **Gross margin- $7,596**
Bharpur and Jaagriti	12 kg	1.2 kg	-	1.2 to 2.5 tonnes	

GROSS MARGIN FOR PIGEON PEA (*Cajanus cajan*) DRY SEEDS				
1.0 ASSUMPTIONS				
Spacing : 0.65m*0.2m		**planting density: 77,000**		
Yield range (1200kg- 2500kg dry seed)		**Average market price ($15/kg)**		
MoAW seed price: $4.17/kg				
2.0 Income	**Quantity**	**Unit**	**Unit Price**	**Total**
Estimated (Av) Yield	1200kg (1200-2500kg)	kg		
Farm gate (Av) price (purchasing at $15/kg farm gate price)	$15.00/ kg (range $10.00-$15.00)	kg	$15.00	$18,000.00
Rejected(weevils)	10%	%		$1,800.00
Marketable yield	90%	%		$16,200.00
Total Income				**16200**
3.0 Direct Costs				
3.1. Land preparation				
Ploughing (twice each at $320.00/ha)	2	ha	320	640.00
Harrowing (twice each at $220.00/ha)	2	ha	220	440.00
Rotovating @ $220/ha	1	ha	220	220.00
Seed drilling @ $220/ha	1	ha	220	220.00
Inter-row cultivation (once at $220.00/ha)	1	ha	220	220.00
3.2. Agro Inputs				
13 kg pure seed (Source LRS, rate $4.17per Kg)	13	ha	$4.17	54.21
8 bags Blended fertilizer 50kg bag (basal application)	8 bags* 50kg	kg	$115	920.00
1 Kg Sodium Molybdate (recommended for red soils)	1	kg	$94.00	94.00

8 Litres insecticide (insecticide (Multi guard-abamectin) 2L/ha X 4 sprays @$50/L)	8	litres	$50.00	400.00
Total variable costs				**2754.00**
4.0. Labour Current farm labour rate of $25.00 per day				
Seed sowing	1 day with 7 man	days	25	175
Fertilizing and thinning	1 day with 7 man	days	25	175
Weed control	8 days with 6 man	days	25	1200
Insecticide application	1 day with 2 man (5 insecticide application)	days	25	250
Harvesting	10 days with 6 man	days	25	1500
Drying, Threshing & Winnowing	4 days with 6 man	days	25	600
Seed Selection, Grading, Treatment & Packaging	5 days with 6 man	days	25	750
Total labour costs @ $25/day		186		$4,650.00
5.0. Other Expenses				
Pre & post-cultivation expenses (administrative, transport)				$1,200.00
Total expenditure				**$8,604.00**
3.0. Gross Margin/ha				**$7,596.00**
Return per labour inputs				$40.84

6.0 Gross Margins Sensitivity Analysis

Pigeon pea – yield (kg/ha)		**Marketable yield 90%**	**Price ($/kg)**			
			13	14	15	16
1	1200	1080	5,436.00	6,516.00	7,596.00	8,676.00
2	1500	1350	8,946.00	11,646.00	13,896.00	12,996.00
3	1750	1575	11,871.00	13,446.00	15,021.00	16,596.00

For more Information Contact: SRO CD - Legalega Research Station - Horticulture Unit
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