

Green gram (*Vigna radiata* L.)

Varieties:

Varieties	Year of release	Duration (days)	Grain yield (q/ha)	Reaction to diseases
K 851	-	60-70	10-14	Susceptible to MYMV and web blight and tolerant to <i>Cercospora</i> leaf spot
SG 1 (Pratap)	1999	60-70	12-14	Resistant to <i>Cercospora</i> leaf spot & tolerant to MYMV
SG 21-5	-	60-70	12-14	Resistant to cercospora leaf spot & MYMV

New green gram varieties recommended for normal sowing

Varieties	Duration (days)	Yield (q/ha)	Disease reaction	Protein content (%)	Cooking quality	Adaptation
SGC 16	65-68	12.52	Resistant to CLS, YMV & moderately resistant to WB	24.50	Very good	Suitable for both kharif and summer for all zones of Assam except BVZ
SGC 20	65-68	12-13	Resistant to CLS & YMV	24.40	Very good	Suitable for all zones of Assam except BVZ
Sonai (SG 21-5)	-	9.93	Resistant to CLS, YMV and MR to WB	24.70		<i>Kharif</i> season

Sowing Time:

Sowing time is mid August to mid September. August is the suitable month for sowing in Central Brahmaputra Valley and Hill Zones. Sowing can be delayed up to 1st week of September without seed inoculation with PSB and upto 2nd week of September with seed inoculation with PSB @ 50 g/kg of green gram seed in Central Brahmaputra Valley Zone.

Soil Type:

Well drained sandy loam soil is preferable.

Land Preparation:

The land is to be ploughed 2-3 times followed by leveling. Stubbles should be removed completely. Surface drains should be provided to facilitate quick removal of excess water from the field.

Liming:

Requisite amount of lime is to be applied after soil test to bring soil pH around 6.0.

Manures and Fertilizers: Compost or FYM @ 1 t/ha or 1.3 q/bigha should be applied.

Nutrient	Requirement (kg/ha)	Form	Fertilizer requirement	
			kg/ha	kg/bigha
Without Rhizobium culture*				
N	15	Urea	32	4
P ₂ O ₅	35	SSP	220	30
K ₂ O	15	MOP	25	3.5
With Rhizobium culture				
N	10	Urea	22	3
P ₂ O ₅	35	SSP	220	30
K ₂ O	15	MOP	25	3.5

The quantity of N is to be reduced proportionately to the quantity of N added in the form of FYM (each tonne of FYM contributes about 5 kg N).

Diammonium phosphate (DAP) @ 75 kg/ha or 10 kg/bigha may be applied in lieu of urea and SSP in non-inoculated crop.

Seed Rate: 20 kg/ha or 2.75 kg /bigha

Spacing:

- Row to row : 30 cm
- Plant to plant : 10 cm

Seed inoculation with Rhizobium and PSB culture:

For seed inoculation with rhizobium culture, either Majuli 10 or any other suitable strains may be used. Seeds should be inoculated with 150 g/3-4 kg seeds. Detail instructions area available in each packet of culture. Also inoculate seeds with PSB @ 50 g/ kg seeds along with Rhizobium.

Interculture:

One weeding at 20-25 days after sowing is to be done.

Drainage:

Excess rain water can be drained out through surface drainage channel of 25 cm wide, 15 cm deep spaced at 6 m distance.

Plant Protection:

A. Diseases :

- i) **Leaf spot** (*Cercospora* spp) : As soon as disease appears spray copper oxychloride @ 0.3% (1.8-2.0 kg in 600-700 lit of water/ha) at an interval of 7-10 days. Alternatively, after appearance of *Cercospora* leaf spot, tebuconazole 25EC @ 600-700 ml (0.1%) mixed with 600 – 700 lit of water/ha (80-90 ml in 80 – 90 lit of water/bigha) should be applied.
- ii) **Blight** (*Rhizoctonia solani*): Spray tebuconazole 25 EC @ 0.1% (600 ml -700 ml mixed with 600 – 700 litre of water/ha) three times starting from the appearance of the disease at 10 - 15 days interval.

Rhizoctonia solani induced damping off, root rot and seedling blight can be effectively managed by seed treatment with slurry method using commercial formulations of *Trichoderma* spp. @ 5 g/kg of seed.

B. Insect Pests:

- i) Against aphids, jassids, flea beetle, pod borers, pod bugs and leaf folder, spray chlorantraniliprole 18.50 SC @ 20 g a.i. /ha ha or lamda-cyhalothrin 5EC@ 150 -250 ml/ha in 500-700 lit of water.
- ii) The attack by yellow mosaic virus (YMV) can be checked by controlling white fly (*Bemisia tabaci*) as follows: 2-3 sprayings of fipronil 5 SC @ 1.5-2 ml/lit of water ha or lamda-cyhalothrin 5 EC@ 150 -250 ml/ha is to be given, first spray at 10 days after germination and subsequent sprays at 15 days interval based on insect population.

C. Nematode:

For management of *Meloidogyne incognita*-

- Seed soaking with carbosulfan 25EC @ 0.01% for 6 hrs.
- Alternatively, treat the seeds with Neem Seed Kernal Powder (NSKP) @ 5 g/kg of seeds
- Alternatively, treat the seeds with *Trichoderma viride* @ 5 g/kg of seeds

Harvesting:

Harvesting is to be done when 75% of the pods turn darkish in colour and brittle on slight pressure.

Protection against Storage Pests:

Properly dried green gram seeds should be mixed thoroughly with black pepper seed powder @ 3 g/kg of seed, against bruchid infestation during storage. Treated seeds should be kept in poly bags with outer covering of gunny bags.