

## PULSES AND OILSEEDS

### Black gram (*Vigna mungo* L.)

**Varieties:**

| *Varieties          | Year of release | Duration (days) | Grain Yield (q/ha) | Reaction to diseases                      |
|---------------------|-----------------|-----------------|--------------------|---|
| KU 301              | 1998            | 80-90           | 13-15              | Resistant to Cercospora leaf spot and YMV |
| Pant U 19           | 1996            | 80-95           | 10-12              | -do-                                      |
| Saonia mah (SB 121) | -               | 70-80           | 10-12              | -do-                                      |

\*Suitable for all zones, except Saoniamah, which is recommended for Central Brahmaputra Valley Zone only.

**New black gram varieties recommended for delayed sowing (up to 30 September)**

| Varieties         | Duration (days) | Yield (q/ha) | Disease reaction              |
|-------------------|-----------------|--------------|-------------------------------|
| Beki (SB 27-3)    | 80-85           | 12-13        | Resistant to CLS, YMV and WB  |
| Kolong (SB 25-19) | 80-85           | 12-13        | Resistant to CLS, YMV and WB. |

**New black gram varieties recommended for normal sowing**

| Varieties         | Year of release | Duration (days) | Yield (q/ha) | Disease reaction                                   | Protein content (%) | Season and area of adaptation   |
|-------------------|-----------------|-----------------|--------------|--|---------------------|---|
| Sonkush (SB 23-5) | -               | 80-90           | 9.17         | Resistant to CLS, YMV and WB                       | 25.10               | Kharif season under delayed sowing                                    |
| Manas (SB 32-13)  | -               | 80-90           | 10.00        | Resistant to CLS, YMV and WB                       | -                   | Suitable for all zones of Assam except BVZ                            |
| SBC 40            | -               | 75-85           | 11.89        | Resistant to CLS & YMV, moderately resistant to WB | 25.20               | Suitable for both kharif and summer for all zones of Assam except BVZ |
| SBC 47            | -               | 75-80           | 14-16        | Resistant to CLS and YMV                           | 25.50               | Suitable for both kharif and summer for all zones of Assam except BVZ |

|                     |      |       |       |  |    |   |
|---------------------|------|-------|-------|--|----|---|
| PU-31<br>(Notified) | 2008 | 70-75 | 12-14 | Resistant to mungbean Yellow Mosaic Virus and Cercospora Leaf Spot | 25 | <i>Kharif</i> , Suitable to UBVZ, LBVZ, CBVZ and NBPZ |
|---------------------|------|-------|-------|--|----|---|

**Sowing Time:**

Mid August to mid September Saoniamah: Mid July to mid August.

**Soil Type:**

Black gram can be grown on a wide range of soils, but sandy loam soil is preferable.

**Land Preparation:**

The land is to be ploughed 2-3 times followed by leveling.

The stubbles are to be removed. 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 in order to bring the 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 |
| <b>Without Rhizobium culture*</b> |                     |      |                        |          |
| N                                 | 15                  | Urea | 32                     | 4        |
| P <sub>2</sub> O <sub>5</sub>     | 35                  | SSP  | 220                    | 30       |
| K <sub>2</sub> O                  | 15                  | MOP  | 25                     | 3.5      |
| <b>With Rhizobium culture</b>     |                     |      |                        |          |
| N                                 | 10                  | Urea | 22                     | 3        |
| P <sub>2</sub> O <sub>5</sub>     | 35                  | SSP  | 220                    | 30       |
| K <sub>2</sub> 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 ton of FYM contributes about 5 kg N). Diammonium phosphate (DAP) 75 kg/ha or 10 kg/bigha should be applied in lieu of urea and SSP in non inoculated crops.

If sulphur free fertilizer (DAP) is used, apply @ 20 kg S/ha as basal through gypsum (133 kg/ha or 18 kg/bigha) in addition to the recommended dose of NPK.

Apply Boron as basal @ 1.0 kg/ha (10 kg borax/ha or 1.30 kg borax/bigha along with the recommended dose of NPK for all zones of Assam

### Seed Inoculation:

For seed inoculation with *Rhizobium* cultures of Shillongani, Ahatguri, Kamalabari or any other suitable strains should be used. Seeds are inoculated with 50 g/kg of seeds. However, detailed instructions are available in each packet of the culture. Also inoculate seeds with PSB @ 50 g/kg seed along with rhizobium.

### Seed Rate:

Sow black gram seeds @ 22.5 kg/ha or 3 kg/bigha

### Spacing:

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

### Interculture:

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

Apply propaquizafop 2.5% + imazethapyr 3.75% (ready mix) @ 125 g /ha (commercial product @ 2 l / ha) at 15-20 DAS as post emergence

### Plant Protection:

#### A. Diseases:

- Leaf spot** (*Cercospora* spp.): As soon as disease appears spray copper oxychloride @ 0.3% (1.8 – 2.0 kg/ha in 600-700 lit of water) at an interval of 7-10 days. Alternatively, Tebuconazole 25 EC @ 600-700 ml (0.1%) mixed with 600 – 700 litre of water/ha ( 80-90 ml in 80 – 90 lit of water/bigha) should be applied.
- Web 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 seeds.

#### B. Insect Pests:

- Against aphids, jassids, flea beetle, pod borers, pod bug sand leaf folder, spray chlorantraniliprole 18.5 SC @ 20 g a.i. /ha in 500-700 lit of water.
- The spread of yellow mosaic virus (YVM) can be checked by controlling white fly (*Bemisia tabaci*) by applying thaimethoxam 25 WG @ 0.3g/lit

#### C. Nematode:

For control of nematode *Meloidogyne incognita*, seed soaking with carbosulfan 25EC @ 0.01% for 6 hrs should be done.

### Harvesting:

Harvesting is to be started when 75% of the pods mature indicating full darkish pod

and brittle on slight pressure.

**Protection against Storage Pests:**

Properly dried black 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.