

Cultivation of Green Gram (*Phaseolus aureus Roxb*) in Nagaland

Introduction

Green gram (*Phaseolus aureus Roxb*) is an important pulse crop of Nagaland. The grains (whole or split) are used as a dal or made into flour. Straw and husk are used as fodder for cattle. Grains are also eaten whole (after germinating them), parched, salted, with sugar or boiled with condiments. Important states producing this pulse are Madhya Pradesh, Maharashtra, Uttar Pradesh, Punjab and Andhra Pradesh, Rajasthan, Karnataka and Tamil Nadu.

Green Gram and black gram are cultivated in Nagaland as pulse crop during Kharif season, covering an area of 310 ha and production 310. MT with average yield of 10q/ha.

Requirement

Climate

The crop needs a well-distributed rainfall. Heavy rains at flowering are harmful, even moist winds at this stage interfere with fertilization.

Soil Green gram grows best on deep, well-drained loams in the alluvial tract in the north as well as on the red and black soils of peninsular

and southern India. It is also cultivated on light or shallow stony soils to clayey soils. In Dimapur it is cultivated in loamy and sandy loam soils during kharif season.

Varieties- T -1, T- 44, PS- 7, PS 16, Pusa Baisakhi, Moong Pusa Vishal, Pusa 672-BIS, Moong Pusa 1371 BIS, S- 8, S- 9, Varsha (H70-16), Hissar G-65, Jawahar 45, Kopergaon, ML 1 ,ML 5, ML 9, Pratap etc.

Cultivation

The land is ploughed once or twice and harrowed to obtain a rough tilth for sole crop in kharif season, in summer, crop can be sown dry in furrows in between the rows of the previous crop, followed by irrigation.

Sowing

In Nagaland Green Gram is generally sown in the month of June to July for kharif crop, September or October for rabi crop and for spring crop the crop is sown by 15 February and harvested by the middle of May.

The seed of Green Gram is sown by broadcasting or drilled in furrows behind the plough, or with a three-or four-coultured desi drill, in rows 20-30cm apart. Seed-rate of 15-

20kg/ha is sown as sole crop and 2-6kg per hectare as mixed crop.

Fertilizer

Fertilizer dose of 25-40kg per ha of phosphorus (P_2O_5) and 25kg per ha of nitrogen (N) is recommended at the time sowing. Also seed treatment with biofertilizer viz. Rhizobium spp. @ 25gram per kg of seed is beneficial.

Irrigation

Being kharif crop green gram does not required irrigation unless there is dry spell. In summer irrigation should be given according to soil type at an interval of 8-10 days. The critical stages for irrigation in Green Gram are Flowering and pod filling stage.

Plant protection

Pest

1.Aphids- The nymphs and adults suck the sap. The affected leaves turn yellow, get wrinkled and distorted. The insect also exude honeydew on which fungus develops, rapidly covers the plant with sooty mould that interferes with the photosynthetic activity of the plant.

Control- Spraying with 0.05% Endosulfan, 0.02% Phosphamidon, 0.03% Dimethoate, Methyl demeton or Thiometon control the pest effectively.

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2.Thrips- The adults and nymphs feed on leaves. They scrape the epidermis and such the oozing sap. As a result, light brown patches appear on infested leaves. The affected leaves curl and become dry

Control- Spraying with 0.05% Endosulfan, 0.02% Phosphamidon, 0.03% Dimethoate, Methyl demeton or Thiometon control the pest effectively.

Pod borer- Caterpillars feed on tender foliage and young pods. They make holes in the pods and feed on developing seeds by inserting anterior half portion of their body inside the pods.

Control - In early stage of attack handpicking of the caterpillars and their destruction. Ploughing fields after the harvest of crop would expose the pupae, which would be destroyed by birds. Spraying the crop with 0.05% Quinalphos or Fenitrothion can successfully control the pest. Spray with HaNPV @ 250 LE/ha.

Disease

1.Leafspot- Angular brown or red spots, with grey or brown centre and reddish-purple border on leaf, stalk and pods

Control- Spray with Bordeaux mixture (5:5:50) or 0.2% Ziram.

2. Powdery mildew-White powdery patches on leaves and other green parts, later becoming dull coloured and are studded with black dot.

Control- Dust the crop with finely powdered sulphur (200-mesh) @ 20kg/ha or spraying of wettable sulphur 3gm /liter of water.

Harvesting and yield

To avoid losses due to shattering of pods, Green Gram is harvested before it is dead ripe. One or two rounds of picking of pods is recommended to avoid losses due to shattering. The plants are uprooted or cut with a sickle and dry in threshing-floor for a week or ten days and threshed by beating with sticks. The average grain yield was recorded up to 10-15 q / ha.

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