

Adopt Gram Cultivation for Crop Diversification

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The *kandi* area in Punjab which stretches from the Dhar block of Pathankot to the eastern side of Hoshiarpur, Shaheed Bhagat Singh Nagar, Ropar districts; Dera Bassi block of Sahibzada Ajit Singh Nagar in the form of 10-20 km wide strip, where rainwater is stored and used for irrigation. Apart from this some area of other districts in Punjab (Bathinda, Mansa, Fazilka) are also rainfed. Gram is the major crop of *rabi* pulses. In such areas, cultivation of chickpea crop can be done as follows-

Climatic requirements and soil: Chickpea crop is very suitable for low rainfall areas. It grows best on well-drained, light to medium textured soils.

Seedbed preparation: Field should be ploughed deep for the favourable growth of crop. Deep tillage upto 22.5 cm depth has been found to increase the yield.

Improved varieties and seed rate: *Desi* gram variety PDG 4 is suitable under rainfed conditions. The optimum seed rate of 15-18 kg for *desi* gram should be used for sowing. But if rainfall occurs till the second fortnight of November, then seed rate of *desi* gram should be increased to 27 kg per acre in the case of second fortnight of November sowing or to 36 kg per acre in case sowing is done in the first fortnight of December.

Seed inoculation: Moisten the seed recommended for one acre with minimum amount of water. Mix thoroughly one packet each of *Mesorhizobium* (LGR-33) and Rhizobacterium (RB-1) biofertilizers with it and dry the inoculated seed in shade. Sow the seed within one hour after inoculation. These bio-fertilizers are available with the Punjab Agricultural University, Ludhiana Seed Shop at Gate No. 1 and Krishi Vigyan Kendra/Farm Advisory Service Centres in different districts.

Time of sowing and method of sowing: The optimum sowing time for *desi* gram under rainfed conditions is from 10 October to 25 October. It should be sown by the *pora* method in rows 30 cm apart by seed placed 10-12.5 cm deep.

Fertilizer application: It pays to apply fertilizer to wheat in rainfed areas provided adequate moisture has been stored in the soil profile. To get good yield from gram, should drill 6 kg nitrogen (13 kg urea) and 8 kg phosphorus (50 kg single superphosphate) per acre at the time of sowing. For obtaining higher yield, in addition to the recommended dose of fertilizers, spray 2% urea (3 kg in 150 litres of water per acre) at 90 and 110 days of sowing.

Weed control: Two hand-hoeings with improved wheel hand hoe at 30 and 60 days after sowing help to keep the weeds under check.

Irrigation: Apply one irrigation between mid-December and end-January depending upon the date of sowing and the rainfall.

Harvesting: Harvest when the pods mature and the plants dry up. Harvest with a sickle.

Farmers can cultivate *desi* gram successfully by conserving soil moisture, timely sowing of recommended varieties of gram for rainfed conditions by Punjab Agricultural University, proper application of fertilizers, timely weed control and retaining moisture in the soil.