

## Irrigation of Black Gram with Drip – The Triumphant Story of a Farmer in Khammam District

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### Introduction

Black gram (*Vigna mungo* (L.) Hepper) is an erect, fast-growing annual, herbaceous legume reaching to height of 30 – 100 cm with well-developed taproot and its stems are diffusely branched from the base. The leaves are trifoliate with ovate leaflets, 4 – 10 cm long and 2 – 7 cm wide. The inflorescence is borne at the extremity of a long peduncle growing up to 18 cm with small, yellow and papilionaceous flowers. The fruit is cylindrical, erect pod of 4 – 7 cm length and 0.5 cm breadth. The pod is hairy and has a short-hooked beak. It contains 4 – 10 ellipsoid black or mottled seeds.

*The black gram seeds* are mainly used as staple food after dehulling and splitting them in a variety of dishes in South Asia. The seeds, sprouts and green pods are edible and much appreciated for their high digestibility and lack of flatulence induction due to its high fiber content. The seeds are very expensive to be used as a feed, even in areas of primary production. The by-product of dhal processing as bran constitutes about 15-20% of the seed weight and comprises hulls, germs and broken seeds. The bran is a potential feed resource and large quantities are available in India and other Southern Asian countries where black gram is a popular food.

The black gram crop residues are an important feed for livestock in some regions of India. The fodder is derived mainly from the leaves, stems and pod husks. It can be used as cover crop and green manure. It is often used as dry season intercrop in rice or wheat as it has a beneficial effect on soil nutrient status.

In Khammam district, black gram is grown in rabi after kharif crops of maize, paddy and green gram depending on water availability. Although this crop requires less amount of water, at least 3 – 4 times watering is very essential especially on the third day of dibbling the seeds and water is required every 7 to 10 days. An innovative farmer, Mr. Kanneboina

Srinivasulu of Basavapuram village, Chintakani mandal having light soil irrigated black gram using drip irrigation for higher crop return.



The field was prepared in the last week of September using rotavator and seeds were sown using machine seeder at 10 Kg per acre of PU – 31 variety. To avoid weed problem, 1.2 L per acre of pendimethalin was used. Next two bags of single super phosphate was added to the soil during last ploughing and drip laterals were placed between two rows of seeds with 1 feet distance. Twenty days after sowing the seeds, 300 ml / acre of Imazethapyr was applied and 5 to 10 days later after sowing, 1½ bags of urea was applied to the samplings. At the time of inflorescences emergence, 13 – 0 – 45 was sprayed 2 to 3 times at 10g/L per acre. As part of crop management per acre, to avoid sucking pest problem, initially monocrotophos at 1.6 ml/L followed by acephate at 1.5 g/L, for maruca pest, chlorantranilphore of 0.3 ml/L and for powdery mildew, carbendazim at 1 g/L were used.

In December first week, the crop was harvested at 10 quintals per acre in 75 – 85 days. Each quintal was sold at Rs. 6800/- and farmer earned Rs. 68000/-. The cost of cultivation was Rs. 20540/- and net profit was Rs. 47460/-. The distribution of cost of cultivation is as given below:

Parameters	Cost of cultivation in Rs.
Preparation of field for dibbling of seed	4500.00
Cost of seed	1300.00
Sowing	1000.00
Weed control	1300.00
Cost of fertilisers	2720.00
Cost of pesticides	3320.00
Harvesting and bagging	6400.00
<b>Total cost of cultivation</b>	<b>20540.00</b>
Quantity of produce	10.0 quintals



Amount earned	68000.00
<b>Net profit gained</b>	<b>47560.00</b>

