Enhancement of Farmers Income by Growing Greengram in Rice Fallows of Udalguri District of Assam

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ABSTRACT

Greengram is one of the most important pulse crop grown by the farmers of Udalguri district of Assam in rice fallows as well as in upland areas. However, most of the land remains unutilized as fallow after harvest of *Kharif* rice. So, greengram was demonstrated by KVK Udalguri, Lalpool using scientific cultivation practices. Fertilizer was applied as NPK@ 10-35-15 kg/ha; Compost @ 1 t/ha. Seed was treated with *rhizobium* culture @50 g/kg seed. The result revealed that the demonstration resulted in higher production of greengram with a grain yield of 7.8 q/ha with net income of Rs 15,400.00/ha as compared to production of grain yield of 6.0 q/ha with a net income of Rs 7,900.00/ha in farmers practice (control). The increase in yield was 30% over the farmers practice. The B:C ratio was also high in demonstration (1.65) over farmers practice (1.36).

Key words: Fallow land, Greengram, Increase income, INM.

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Background information about farmer field

Rice is the major staple crop of Udalguri district of Assam and farmers are habitual in growing rice as mono cropping keeping field fallow after the harvest of the crop. Rainfed cultivation, poor management practices and delay in sowing are some of the reasons for low productivity of green gram crop in the state (Ojah *et al.*, 2020). Usually most of the farmers in the district used to keep the field fallow to the next growing season. However, greengram is cultivated in small areas using traditional and old varieties and the farmers follow non judicious application of fertilizers and improper plant protection measures resulting in low yield. Integrated nutrient management is helpful for increasing crop productivity, improving nutrient use efficiency and soil quality of rainfed uplands necessary for sustainable productivity (Borah *et al.,* 2019). Owing to the diverse agro climatic situations, Udalguri district of Assam is endowed with comparative advantage for growing pulse crops using INM, not only to increase income but also for nutritional security and improving soil fertility.

Details of technology demonstrated

Scientific cultivation practices of green gram using var. IPM02-3 was demonstrated in field of Mr. Bineswar Baglari of Village Nalbari, Bhergaon, Udalguri, Assam during *Kharif* 2020-21. Fertilizer was applied as NPK@ 10-35-15 kg/ha; Compost @ 1 t/ha; Seed treatment was done with *Rhizobium* @ 50 g/kg of seeds. The entire quantity of the fertilizer was use as basal.

Institutional involvement

Under the NFSM project greengram using var. IPM02-3 was demonstrated in cluster basis in the year 2020-21 in 10 ha of land. For the demonstration of the technology KVK has provided inputs like greengram var. IPM 02-3 (Fig 1) along with the *Rhizobium* culture for seed treatment, vermicompost and plant protection chemicals. Regular advisory services are also provided to the farmers to solve their day to day problems and have feedback and monitoring (Fig 2).

Success point

The average seed yield in the demonstration plot was 7.8 q/ha (Table 1) and the net return obtained from cultivating per ha of greengram was Rs 15,400.00 with a B:C ratio 1.65 (Table 2). It was found that majority of the participant farmers in the programme had full adoption of improved practices *viz*., land preparation, use of high yielding varieties, sowing time and application of manures and fertilizers. The area under this variety has now spread significantly.

Outcome yield (q/ha)

The demonstration recorded a production of 7.8 q/ha against district average production of 6.5 q/ha. The demonstration yield was much higher against the district and state average yield.

Fig 1: Seed distribution under CFLD.

Fig 2: Greengram at vegetative stage.

Table 1: Performance of green gram.

Particulars	Grain yield (q/ha)
Demonstration	7.8
Potential yield of variety/technology	12.0
District average (Previous year)	6.5
State average (Previous year)	6.0

Table 2: Performance of technology vis-à-vis local check (Increase in productivity and returns).

Specific technology	Yield (q/ha)	Gross cost (Rs/ha) (MSP - 7196/q)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Farmer practices	6.0	22100	30000	7900	1.36
Demonstration	7.8	23600	39000	15400	1.65
% increase	30%	-	-	-	-

CONCLUSION

Growing green gram is a profitable venture for increasing the income of the farmers of Udalguri District of Assam. It has been observed that the demonstration resulted in a higher production of 7.8 q/ha with net income of Rs. 15,400.00/ha as compared to 6.00 q/ha with net income of Rs. 7900.00/ha in farmers practice (control). The increase in yield was 30% over the farmers practice. The B:C ratio was also high in demonstration (1.65) over farmers practice (1.30). Hence, it can be concluded that cultivation of green gram using scientific method can not only increase production, productivity but also income and profitability.

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