Evaluation of Front Line Demonstration Programme on Rapeseed Variety TS-38 in River Island Majuli, Assam

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Abstract

Rapeseed is the major oilseed crop grown during rabi season covering an area of 8,500 ha with the productivity 900 kg per ha. In order to enhance the productivity of oilseed crop in Majuli, Krishi Vigyan Kendra and Jorhat, we conducted field demonstrations on cultivation of rapeseed var. TS-38 under front line demonstration programme on oilseed during 2009-10 and 2010-11. The present study was conducted to assess the yield performance and economic impact of the demonstration. Highest yield about 1,250 kg per ha with recommended cultivation practices is recorded in 2009-10 which is 51.51% more than the check variety (M-27) with farmer’s practices. While during 2010-11, more than 77.96% yield was recorded over the yield 667 kg per ha of farmer’s check variety. Although the gross expenditure is increased marginally in demonstration programme over farmer’s practice but gross return is more than 50% in both the year. Since Majuli is predominantly a rabi oilseed belt of Jorhat district, replacing this variety will enhance productivity and farm income. More initiative from the Department of Agriculture for variety replacement programme will help to boost the production of oilseed and farm income. Area expansion programme of this promising variety through public-private-partnership will enhance productivity of the crop.

Keywords: Rapeseed, rabi, oilseed crop, Majuli, yield performance, farm income, public-private-partnership.

Introduction

Majuli is a river island of Brahmaputra situated in the Jorhat district of Assam. It is one of the largest river islands of the world. It is lying within the latitude of 26°45’N to 27°12’N and longitude of 93°39’E to 94°35’E. However, recurrent floods and relentless erosion have now threatened the very existence of the island. The farming situation of the river island falls under Char area. The Island is dominated with kharif crops since, its majority area are inundated with flood. Among the rabi crops, rapeseed is the main oilseed crop grown in this island covering 8,500 ha area with productivity of 900 kg per ha. In Assam, rapeseed area is 0.23 m ha with the productivity of 543 kg per ha which is far lower than the national average (1,143 kg/ha). Assam contributed 3.59% in area and 1.71% in production in national level. Although the productivity is higher in Majuli than the state average, still there is a tremendous scope for increase in productivity in this island. It was found that farmers use own seeds and hardly use recommended dose of fertilizer along with the water management technology. Considering the vast potential area of oilseed crops i.e. 39% to the total cultivable area and the scope for increase in productivity of rapeseed, KVK Jorhat had conducted Front Line Demonstration (FLD) programme of rapeseed var. TS-38 in different locations of Majuli sub-division during 2009-10 and 20010-11.

Materials and methods

A multidisciplinary team consisting scientists from different disciplines of KVK and from AAU, Jorhat along with the agriculture development officer and village level extension worker of department of agriculture had selected the beneficiary farmers for FLD programme in Kamalabari and Garmur ADO circles of Majuli Subdivision. For selection of farmers following factors are considered.

1. Land should be in compact.
2. Location should be easily accessible to the visiting farmers.
3. Land should have irrigation facilities.
4. Literate farmers with scientific attitude.

The demonstration was conducted in three different locations, namely, Mahkingaon, Barbarigaon and Natun kamalabarigaon. These locations were selected purposively from two Agriculture development officer’s circle i.e. Kamalabari and Garmur of Majuli Agriculture sub-division. During 2009-10, 9 farmers participated in the programme and 12 farmers participated in 2010-11. The objective was to see the performance of improved cultivation practices of rapeseed var. TS-38 in Majuli as compared to local variety. In each demonstration plot there was a control plot of farmer’s practices for comparison.
After gap analysis in adoption of package of practices of rapeseed, discussion with farmers groups and village level extension workers of Majuli sub-division, four cultivation practices which showed full gap were selected. Therefore, in the demonstration plot, use of HYV (high yield variety) seed, seed rate, fertilizer doses, pest and disease management practices were followed as per recommendation of Package of Practices (\textit{Rabi}) while in control plot; existing practices were used by the farmers (Table 1). Yield data was collected from control (Farmer’s practices) and demonstration plots and cost of cultivation, net income and cost benefit ratio were computed and analyzed.

**Results and discussion**

The yield performance of TS-38 variety of rapeseed is presented in Table 2. It is seen from the table that average yield in demonstration programme (TS-38) was higher than the check variety (M-27) by more than 50%. Similar findings were reported by Goswami \textit{et al.} (2009) in his study. Low yield of TS-38 was recorded during 2010-11 due to heavy rainfall during Oct resulting in delay sowing of crop though the yield was not much affected by late sowing in case of TS-38 variety in comparison to M-27. High moisture in soil caused sporadic germination which lead to a low plant population. In order to analyze economic impact, the data recorded on some economic indicators such as gross expenditure, gross return, net return and benefit and cost (B: C) ratio are presented in Table 3.

The gross expenditure in recommended practices was higher than the farmer’s practices by about 16.29% and 22.31% during 2009-10 and 2010-11 respectively (Singh \textit{et al.}, 2007; Mishra \textit{et al.} 2009; Sachan \textit{et al.}, 2009). But gross return of recommended practices was 51.51% and 77.96% during 2009-10 and 2010-11 which was higher than gross expenditure. The benefit cost ratio of demonstration plot was also more than the farmer’s practice in both years which indicates that the cultivation of TS-38 variety is more profitable than check variety. It was observed from the data presented in the Table 2 that farmers earned 51.51% more by additional investment of 16.29% in cultivation of TS-38 variety during 2009-10 and it was 77.96% income by additional investment of 22.31% during 2010-11.

**Conclusion**

The two years average yield performance of TS-38 variety in rain-fed farming situation is 63.27% more over farmers check variety. Moreover, farmers were able to achieve this much of yield by investing additionally only 19.39% over the farmers check variety. Since, Majuli is predominantly an oilseed belt of Jorhat district, replacing this variety will enhance productivity and farm income. More initiative from the Department of Agriculture for variety replacement programme will help to boost the production of oilseed and farmers income. Area expansion programme may be undertaken by the Department of Agriculture with public-private-partnership mode by involving NGOs, Corporate sectors etc. for economic benefit for farmers.
Extensive training programme on improved cultivation practices of rapeseed and formation of farmer's interest group by KVK and state department of agriculture in convergent mode may help farmers of Majuli to increase area under rapeseed. Location specific field trials on nutrient management as well as pest and disease management by incorporating indigenous knowledge of farmers may be conducted by KVK and Assam Agricultural University.

References

