Original Research Article

Evaluating the performance of MTU 1281Rice varietythrough On Farm Trial in West Godavari district of Andhra Pradesh, India

Abstract:

An on-farm trial was conducted by Krishi Vigyan Kendra, Undi in farmer's fields of West Godavari district to evaluate the performance of MTU 1281 rice variety on yield and economics of Rice crop during the *kharif* season for two succeeding years 2022 and 2023. The results of the study revealed that MTU 1281 variety registered higher yield i.e., 7261, 7078 and 7170 kg/ha than MTU 7029 variety (6504, 6625 and 6565 kg/ha) during both the years of study and in pooled data as well. When compared to farmers' practice (Rs. 58,145, 71,603/ha and 1.78, 1.98 during 2022–23, 2023–24, respectively) net returns and the B:C ratio werehigher with MTU 1281 rice variety (Rs. 75,198, 83,273/ha and 2.03, 2.16).

Keywords: Rice, MTU 1281, Net returns,On Farm Trial and Yield

Introduction:

Rice is one of the most important cereal crops and serves as the primary source of staple food for more than half of the global population [6]. It is one of the potential grain crops dominantly produced and consumed in the Asia that could contribute to the efforts for the realization of food security [4].

In India, rice ranks second in both area and production and cultivated over 43.90 million hectares, yielding 114.45 million tonnes with a productivity of 2607 kg ha^{-1}[7].

The world's rice production has doubled during the last 25 years, largely due to the use of improved technology such as high yielding varieties and better crop management practices [1]. But, awareness on high yielding medium duration rice variety is the main concern among the farming community and due to this reason farmers are still growing old varieties on a widerscale.

In West Godavari district, paddy is the major crop cultivated in almost all the districts during k*harif* with an area of 84,891 ha, production and productivity of 4.2 lakh T, 5002 kg/ha, respectively [9].MTU 7029 (Swarna) old variety occupy a large proportion of the area in West Godavari district under rice cultivation, despite wider choices of rice cultivars released for general cultivation since 1995. The possible reason may be that the newly developed varieties may or may not have satisfied the farmers' end use. There is thus a dire need to introduce new varieties in farmers' fieldsthrough assessment, refinement and demonstration of proven technology under micro farming situation in a district.

Keeping this in view, Krishi Vigyan Kendra, Undi introduced MTU 1281(a non lodging, medium slender, Nitrogen responsive, moderately resistant to leaf blast, neck blast and brown

plant hopper with low grain shattering) in farmers fields of West Godavari district through on-farm trial (OFT) with an objective to evaluate production potentiality and to assess the adoptability of improved variety in the locality during the year 2022 and 2023. After getting significant results of On-Farm Trial (OFT) at the farmer's field, Krishi Vigyan Kendra, Undi promoted this variety for larger recognition.

Materials and Methods:

The performance of rice variety MTU 1281 on yield and economics of rice was assessed by Krishi Vigyan Kendra, Undi through On Farm Testing (OFT) in three distinct locations during the *kharif* season for two succeeding years 2022 and 2023. Every year, three different places were chosen for the trials thus making a total of six farmer field demonstrations at Gumparru, Chinnamvaripalem, Navuduru and N.R.P agraharam villages. Each demonstration conducted in 0.2 ha area. MTU 1281a non lodging, medium slender, Nitrogen responsive, moderately resistant to leaf blast, neck blast and brown plant hopper with low grain shattering rice variety was taken as demo plot and locally cultivated old variety MTU 7029 was considered as farmers practice. With the assistance of department authorities, direct observation from field trips and interactive discussions, and innovativeness, progressiveness, and active use of the latest technologies, six farmers were chosen. Field days, farmer trainings and group meetings on new rice variety and sound agricultural practices in rice crop were also arranged to provide chance to other nearby farmers to see the advantages of technologies that were showcased.Throughout the duration of the demonstration programme, the KVK scientists used to regularly visit the farmer's plot (control) and the demonstration plots to provide close monitoring and data gathering. In addition to yield data, economics from assessment plots and control plots were recorded individually at harvest time during both the years of study.

Results and Discussion:

Yield: Results of the Table 1 indicated that the higher yield was realized with MTU 1281 variety i.e., 7261, 7078 and 7170 kg/ha as compared to MTU 7029 variety (6504, 6625 and 6565 kg/ha) during both the years of study as well as in pooled data. The higher yield with MTU 1281 variety owing to more number of filled grains/panicle, test weight and less incidence of pesta and diseases[2, 5].

Table 1: Performance of rice variety MTU 1281 in farmers fields of West Godavari district during *kharif* 2022 and 2023.

Year	No. of filled grains/panicle		Yield (Kg/ha)		Net Returns (Rs./ha)		B:C ratio	
	MTU 1281	MTU 7029	MTU 1281	MTU 7029	MTU 1281	MTU 7029	MTU 1281	MTU 7029
2022	244	194	7261	6504	75,198	58,145	2.03	1.78
2023	236	190	7078	6625	83,273	71,603	2.16	1.98
Pooled	240	192	7170	6565	79,236	64,874	2.09	1.88

Net Returns and B:C ratio:

MTU 1281 variety registered the higher net returns and B:C ratio of Rs. 75,198, 83,273, 79,236/ha and 2.03, 2.16, 2.09 than MTU 7029 variety i.e., Rs. 58,145, 71,603, 64,874/ha and 1.78, 1.98, 1.88 during both the years of experimentation and in pooled data as well,

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respectively[3, 8]. Higher yield recorded with MTU 1281 variety might be the reason for increased net returns and B:C ratio. Crop lodging, blast incidence and reduced grain quality leads to less yield which in turn reduced Net returns and B:C ratio with MTU 7029 variety.

Conclusion:

MTU 1281 rice variety recorded more number of filled grains/panicle, lower pest and disease incidence which reduced plant protection cost, non lodged and higher yield and Net returns in farmer's fields of West Godavari district under On Farm Trials besides overcome the lodging problem compared to MTU 7029, which is susceptible to blast and lodged before harvest.

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