

Telangana Vari 4 [IET 27869 (JGL 25958)] – Mid early duration, long slender, high yielding rice variety

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Abstract

Telangana Vari 4 was derived through pedigree method of breeding from a cross MTU 1010 and NLR 34449 with an aim to develop a high yielding short duration variety. It has long slender grains with mid early duration and suitable for both *kharif* and *rabi* seasons. It was evaluated during 2018 to 2020 in AICRIP trials and recorded +10.51, +63.73 and +21.18 percent increase in yield over national, zonal and local checks, respectively in overall mean. Telangana Vari 4 was found to have moderate resistance to neck blast and rice tungro virus. Telangana Vari 4 was recommended by Varietal Identification Committee (VIC) during 2021 and approved by Central Sub-Committee on Crop Standards, Notification and Release of Varieties for irrigated conditions in the states of Odisha, Bihar and Jharkhand (Zone III) and notified vide Gazette Publication No. S.O. 8 (E) Dated 24.12.2021.

Keywords: Telangana, Rice, high yielding, duration, moderate resistance

Introduction

Short duration rice varieties in general have an advantage of suiting to different seasons and sowing windows. Long slender grain varieties have more preference and occupy more area than medium slender or bold grain varieties owing to fetching better market price. Accordingly, a cross was attempted between MTU 1010 (High yielding, short duration variety) and NLR 34449 (High yielding, fine grain variety with blast resistance) during the year 2007 with an objective to develop high yielding short duration, long slender variety at Regional Agricultural Research Station, Jagtial, Telangana. The pedigree method of breeding was followed and handled the segregating material from 2008 to 2014. Telangana Vari 4 was identified in the year 2014 at F₇ generation and promoted for replicated yield testing during *rabi*, 2014-15.

Morphological traits

Telangana Vari 4 is a short duration (115-120 days) variety suitable for *kharif* and *rabi* seasons. It has semi-erect, medium dwarf plant type, long and well exerted panicles (**Figure 1**). It has erect to semi erect and medium size flag leaf with no pigmentation on



Figure 1: Field view of Telangana Vari 4 (JGL 25958) variety



any plant part. The grains are devoid of awns, long slender in shape with 6.27 mm kernel length, 2.01 mm kernel breadth and 3.12 L/B ratio. Matured grains

have straw coloured glumes, translucent kernel with no abdominal white (**Figure 2**). The test weight ranges from 21 to 22 g.



Figure 2: Grain, rice and panicle of Telangana Vari 4 (JGL 25958) variety

Yield performance

Telangana Vari 4 was tested in AICRIP yield trials *viz.*, IVT ETP, AVT 1 ETP and AVT 2 ETP during 2018 to 2020 and exhibited 32.08, 45.57 and 21.33 per cent yield increase in Bihar, 4.19, 68.51 and 14.41 per cent yield increase in Jharkhand, 79.96 and 25.54 per cent yield increase in Odisha over zonal and local checks, respectively. The test entry also exhibited 12.24, 0.61 and 2.98 per cent yield increase over hybrid check in Bihar, Jharkhand and Odisha, respectively.

Telangana Vari 4 has recorded 10.51, 63.73 and 21.18 percent increase in yield over national, zonal and local check, respectively in overall mean in the states proposed *viz.*, Bihar, Jharkhand and Odisha. It also exhibited 5.24 per cent yield increase over the hybrid check. The entry has shown superior performance in Zone III (Eastern) over national, zonal and local checks with 12.24, 44.12 and 12.80 per cent increase, respectively.

In Agronomy trials with different nutrient levels conducted at different locations indicated the significant yield reduction by application of only 50% RDN (Low input) at Coimbatore (4.87 t/ha), Faizabad (3.95 t/ha), Karjat (2.80 t/ha), Maruteru (3.38 t/ha),

Rewa (4.70 t/ha), Sabour (4.16 t/ha), Vadgaon (3.78 t/ha) and Varanasi (3.15 t/ha) compared to 100% RDN, whereas, 50% RDN recorded numerical yield advantage at Hazaribagh (4.75 t/ha) and Jagdalpur (3.02 t/ha) over 100% RDN.

Reaction to biotic and abiotic stresses

Based on NSN1 and NSN2 screening trials data of AICRIP, Telangana Vari 4 was found to have moderate resistance to neck blast, rice tungro virus and grain discoloration.

Grain quality parameters

Telangana Vari 4 has good quality parameters of high milling percentage (70.2%) and head rice recovery (61.35%), It has intermediate amylose content of 22.38%, alkali spreading value of 4.0, gel consistence of 72.5 with very occasional chalkiness.

Release and notification

Telangana Vari 4 was recommended by Varietal Identification Committee (VIC) during 2021 and approved by Central Sub-Committee on Crop Standards, Notification and Release of Varieties for cultivation in the states of Odisha, Bihar and Jharkhand (Zone III) and notified vide Gazette Publication No. S.O. 8 (E) Dated 24.12.2021.