

**DRR Dhan 64 - (IET 28358) - First Nitrogen Use Efficient, Early Transplanted Rice Variety**

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Received: 8<sup>th</sup> May 2023; Accepted: 29<sup>th</sup> May, 2023

### Abstract

DRR Dhan 64 [IET 28358 (RP 5599-212-56-3-1)], an early transplanted rice variety was developed from MTU-1010/KMR-3R cross. It was evaluated in AICRIP multi-location ETP trials during wet seasons of 2019 to 2021. DRR Dhan 64 consistently out-performed the check varieties in Eastern Zone (Zone III) with a mean grain yield 5330 kg/ha, which is 8%, 28% and 12% higher than National check, Zonal and Local checks, respectively. In addition, it exhibited moderate resistance to Leaf blast and Neck blast; and also resistant to gall midge and rice thrips; and moderately resistant to planthoppers and whorl maggot. DRR Dhan 64 has early duration of 115-120 days (seed to seed) and possesses desirable grain and cooking quality parameters. It was released for cultivation in aerobic ecosystems of Bihar and West Bengal (Zone III) states through Central Sub-committee on Crop Standards, Notification and Release of Varieties for Agricultural Crops vide S.O. 4065(E) dt. 31<sup>st</sup> Aug 2022 [CG-DL-E-31082022-238490].

**Keywords:** Irrigated rice, grain yield, cooking quality

### Introduction

Rice (*Oryza sativa* L.) is cultivated in <22 million hectares under irrigated ecology which accounts approximately 50% of the total area under rice production in India. In view of developing differential nitrogen use efficiency and its response to low nitrogen uptake with earliness, efforts started in 2011 with crossing of MTU-1010/KMR-3R. The segregating populations were evaluated in low nitrogen (0, 20, 40 and RDN) under station trials. The promising line, RP 5599-212-56-3-1 was identified and nominated in AICRIP ETP trial-2019. Subsequently, the entry performed well in all the

three years and released as early transplanted and first Nitrogen use efficient rice variety - DRR Dhan 64 through Central Sub-committee on Crop Standards, Notification and Release of Varieties for Agricultural Crops vide S.O. 4065(E) dt. 31<sup>st</sup> Aug 2022 [CG-DL-E-31082022-238490] suitable for cultivation in Bihar and West Bengal States of eastern zone (Zone III). The overall mean grain yield of DRR Dhan 64 in Zone III was 5330 kg/ha, which is 8, 28 and 12% higher than National check, Zonal and Local checks, respectively. The weighted mean grain yield was 5382 kg/ha in Bihar and this was 8%,



37% and 18% higher than National check, Zonal and Local checks, respectively. In West Bengal state, the weighted grain yield mean was 5266 kg/ha and out yielded the national, regional and local checks by 7, 18 and 6%, respectively (**Table 1**).

**Table 1: Yield performance of DRR Dhan 64 in Zone III**

Zone / State	Mean Grain Yield (Kg. ha <sup>-1</sup> )	Superiority over checks		
		National Check (%)	Zonal Check (%)	Local Check (%)
Z-III	5254	7	34	9
Bihar	5382	8	37	18
West Bengal	5266	7	18	6

It exhibited resistance to major insect pests and diseases such as leaf blast, neck blast, gall midge and rice thrips; moderate resistance to plant hoppers and whorl maggot. It has good hulling (80.2%), milling (72.2%) and head rice recovery (66.8%) in comparison with the checks and qualifying varieties. It possesses intermediate amylose content (22.5 %), gel consistency (62 mm), Long Slender (LS)

grain type (KL- 6.36 mm; KB- 2.07 mm) and other desirable grain and cooking quality parameters (**Figure 1 and 1B**).

The variety DRR Dhan 64 is highly suitable for cultivation under irrigated (E TP) growing regions (Bihar, and West Bengal). Sowing is preferably to be done during the second week of June to second week of July. Weed management is a big menace and to resolve this, apply any one of the pre-emergence herbicides on 3<sup>rd</sup> or 4<sup>th</sup> day after sowing to control weeds in the lowland nursery. Keep a thin film of water and allow it to disappear. Avoid drainage of water. This will control germinating weeds. One intermittent weeding is recommended (two if more weeds) during crop growth period. The DRR Dhan 64 has an advantage of 10-15 days (115-120 seed to seed duration) in comparison with other transplanted rice and can yield up to 5-5.5t/ha subject to use under area of adoption and recommended climate conditions and adoption of package of practices. It is suitable for irrigated ecosystems of both early *kharif* (wet) and *rabi* (dry) seasons.



**Figure 1A: Field view of DRR Dhan 64**



**Figure 1B: Paddy, Brown rice and Polished rice of DRR Dhan 64**