BIOFORTIFIED

RICE VARIETIES

- ❖ DRR Dhan 45 (IET – 23832)
- ❖ DRR Dhan 48 (IET – 24555)
- ❖ DRR Dhan 49 (IET – 24557)
- ❖ DRR Dhan 63 (IET – 26383)
- ❖ DRR Dhan 67 (BRRI Dhan 84)
- ❖ DRR Dhan 69 (BRRI Dhan 100)
- ❖ DRR Dhan 81 (IET – 31929)
- ❖ DRR Dhan 93 (IET – 31947)
- ❖ DRR Dhan 94 (IET – 31925)
- ❖ DRR Dhan 96 (IET – 31045)

DRR Dhan 45

IET 23832 | First biofortified high zinc variety



It is a biofortified zinc-rich variety is the first of its kind combining high zinc content (22.3 ppm in polished rice) and high yield (5.2 t/ha). It is a mid early duration variety possessing long slender grains



Grain Yield:	Plant height (cm):	Duration (days):
5.2 t/ha	105 cm	130 days (seed to seed)

BIOFORTIFIED HIGH ZINC

High zinc content **22.3 pp min** polished rice

High yield **5.2 t/ha**

DISEASE AND PEST RESISTANCE

Moderately resistant to leaf blast

Ecology:	Irrigated
Season:	Kharif
Released for States:	Tamil Nadu, Karnataka and Andhra Pradesh
Variety Type:	First biofortified high zinc variety
Grain Type:	Long Slender

1000 grain weight (g):	20 g	Alkali spreading value:	3.5
L/B ratio:	3.47	Amylose content (%):	21.1%
Head rice recovery (%):	55.6%	Gel Consistency (mm):	54.0

IDENTIFICATION AND RIGHTS

Rice Variety: DRR Dhan 45 (IET 23832)
Parentage: IR 73707-45-3-2-3 / IR 77080-B-34-3
IET No: 23832
Year: 2016

Notification No: 1438 (E) | 18/04/2016

Protection of Plant Varieties and Farmers' Rights Authority Number: 2019/92

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DRR Dhan 63

IET-26383

Zinc rich rice variety



DESCRIPTION

DRR Dhan 63 is a high yielding **biofortified** rice variety possessing high Zn (24.2 ppm) in polished grains as against 16-17 ppm existing in popular rice varieties. Although rice is a major food crop, it is a poor source of essential micronutrients such as **Zinc** leading to **hidden hunger**. In this context DRR Dhan 63 is found to be promising with enhanced Zn content and developed through pedigree method of **breeding**.It showed excellent grain and cooking quality.

ZINC COMPARISON



Popular Varieties (16-17 ppm)	DRR Dhan 63 (IET-26383) (24.2 ppm)	Other Varieties (16-17 ppm)

HIDDEN HUNGER

Rice is a major food crop, but a poor source of Zinc, leading to hidden hunger.

DRR Dhan 63 helps fight hidden hunger through **biofortification.**

VARIETY IDENTITY

Pedigree: IET 17280 / Pusa Basmati 1
Ecology: Biofortification
Grain type: Short Bold
Duration: 127-130 days
Yield: 5.0 t/ha
Notification No: S.O. 8 (E) | 24/12/2021
Plant height: 103-107 cm
1000 grain weight: 15.6 g

5.0 t/ha
High Yield Potential

GRAIN QUALITY

HUSKED (BROWN) GRAIN



POLISHED (WHITE) RICE



SAIN & COOKING QUALITY

Kernel length:	4.35 mm
Kernel width:	2.09 mm
L/B ratio:	2.08
Milling recovery:	70%
Head Rice Recovery:	59.3 %
Amylose Content:	24.5%
ASV:	4
GC:	26 mm

SALIENT FEATURES

It is a nutritionally rich variety combining **high yield, high Zn** content and good cooking quality features can easily be adopted by the farmers.

RECOMMENDED STATES

Uttar Pradesh, Odisha and Kerala.

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DRR Dhan 48

IET 24555 | Low GI, Zinc Rich, BLB Resistant and Saline Tolerant Fine Grain Rice Variety



It is a bio-fortified variety with high grain zinc (22 ppm in polished rice) coupled with high yield derived from RPBio226*1/CSR27 cross. Zn content is nearly 5 ppm higher than the check varieties IR 64 and BPT 5204. It is a mid-duration variety possessing medium slender grains. Additionally it exhibits resistance to BLB possessing *Xa21*, *xa5* and *xa13* genes

KEY PERFORMANCE

Grain Yield:	Plant height (cm):	Duration (days):
5.2 t/ha	**92-95 cm**	**135-140 days**(seed to seed)

Rice Variety	:	DRR Dhan 48 (IET 24555)
Variety Type	:	Low GI, Zinc Rich, BLB Resistant and Saline Tolerant Fine Grain Rice Variety
Released for States	:	Andhra Pradesh, Telangana, Tamil Nadu, Karnataka and Kerala
Grain Type	:	Medium Slender
Grain Yield	:	5.2 t/ha
Disease and Pest Resistance	:	Moderately resistant to RTD, sheath rot, neck blast and brown spot
Parentage	:	Improved samba Mahsuri*1/CSR27
Ecology	:	Irrigated
Season	:	Kharif

ZINC & BIOFORTIFICATION

22 ppm in polished rice nearly 5 ppm higher than the check varieties IR 64 and BPT 5204

BLB RESISTANCE

Additionally it exhibits resistance to BLB possessing Xa 21 xa5 and xa 13 genes

DISEASE AND PEST RESISTANCE

Moderately resistant to RTD, sheath rot, neck blast and brown spot

IDENTIFICATION

IET No	24555
Year	2018
Notification No:	S.O. 1379 (E) | 27/03/2018
Protection of Plant Varieties and Farmers' Rights Authority Number	2022/0021

GRAIN QUALITY & TECHNICAL SPECIFICATION

1000 Grain Weight:	L/B ratio	Head rice recovery (%)	Alkali spreading value	Amylose content (%)	Gel Consistency (mm)
15.4 g	**2.6**	**60.9%**	**7**	**24%**	**28.5 mm**

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DRR Dhan 49

IET 24557 | Biofortified Zinc Rich Variety



DRR Dhan 49 is a zinc enriched (25.2 ppm in polished rice) high yielding variety with medium duration and medium slender grains. It's Zn content is nearly 8 ppm higher than the check **varieties IR 64 and BPT 5204.**

Rice Variety:	DRR Dhan 49 (IET 24557)
Variety Type:	Biofortified Zinc Rich Variety
Released for States:	Gujarat, Maharashtra and Kerala
Grain Type:	Medium slender
Grain Yield:	4.8 t/ha
Disease and Pest Resistance:	Moderately resistant to BLB, RTD, sheath rot, neck blast and brown spot
Parentage:	RPBio 226*1/CSR27
IET No:	24557
Year:	2018
Notification No:	S.O.1379 (E) | 27.03.2018
Protection of Plant Varieties and Farmers' Rights Authority Number:	2022/0019
Ecology:	Irrigated
Season:	Kharif


PADDY (HUSK)


POLISHED RICE

ZINC BIOFORTIFICATION
25.2 ppm in polished rice
nearly 8 ppm higher than the check varieties IR 64 and BPT 5204

BLB RESISTANCE
It shows resistance to BLB (Xa21+xa13+xa5)

DISEASE AND PEST RESISTANCE
Moderately resistant to BLB, RTD, sheath rot, neck blast and brown spot

KEY PERFORMANCE

Grain Yield:	Plant height (cm):	Duration (days):
4.8 t/ha	**95-100 cm**	**130-135 days (seed to seed)**

GRAIN QUALITY & MILLING CHARACTERISTICS

1000 grain weight (g)	L/B ratio	Head rice recovery (%)	Alkali spreading value	Amylose content (%)	Gel Consistency (mm)
19.2 g	2.6	61.1%	7	23.3%	23 mm

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DRR Dhan 67

BRRI Dhan 84

High Yielding, High Zinc, Red Pericarp,
Long Slender Grain Type Rice Variety



HIGH ZINC
&
RED PERICARP
LONG SLENDER GRAIN TYPE

- ZINC 27.6 mg/kg more than 8.2 mg/kg from other varieties
- 3.0 mg/kg more than another zinc enriched variety BRRI Dhan 74
- The incidence of diseases and pests in BRRI Dhan 84 is relatively low.

YIELD CAPABILITY
6.0-6.5 t/ha

IN FAVORABLE CONDITIONS, UP TO
8.0 tons/ha

Description: DRR Dhan 67 is high yielding, high zinc red pericarp, Long slender grain type. It has strong culm and this doesn't lodge. Because of the erect and long flag leaf, plants look appealing. This variety is capable to produce yield of **6.0- 6.5 tons/ha**. Whereas, in favorable conditions, it can produce up to **8.0 tons/ha**.

Key Highlights: Its zinc **27.6 mg/kg** that's more than **8.2 mg/kg** from other varieties and **3.0 mg/kg** more than another zinc enriched variety BRRI Dhan 74. The incidence of diseases and pests in BRRI Dhan 84 is relatively low.



VARIETY IDENTITY

Pedigree:	BRRidhan29/IR68144/ IBRRi dhan28//BR11
Ecology:	Boro
Grain type:	Long Slender
Duration:	140 - 145 days
Yield:	5.6 t/ha
Notification No:	S.O. 4065 (E) | 31/08/2022

GRAIN AND QUALITY

Plant Height(cm): 96 cm
1000 Grain Weight(g): 22.8 g
L/B Ratio: 3.3
HRR: 60%
AC: 23.70 %
GC: Optimum
ASV: Intermediate

HUSKED GRAIN



MILLED RED PERICARP RICE



SALIENT FEATURES

Boro Irrigated under irrigated conditions, Clay loam to Loam soils.

RECOMMENDED STATES

Assam, Tripura and West Bengal.

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DRR Dhan 69

BRRI Dhan 100

High Yielding, High Zinc,
Long Slender Grain Rice Variety

HIGH ZINC FOR BETTER NUTRITION

SUITABLE FOR BORO SEASON



HIGH YIELD
6.5 t/ha

ABOUT THE VARIETY

DRR Dhan- 69 is high yielding, high zinc with long slender grain rice variety suitable for cultivation in boro season. This variety was evaluated in regional centers of BRRI for 5 years and evaluated through on-farm trials in 2019. The incidence of diseases and pests in BRRI Dhan 100 is relatively low.

Pedigree:	BR7166-5B-5/BG305/BRRI dhan29
Ecology:	Boro
Grain type:	Long Slender
Duration:	148 days
Yield:	6.5 t/ha
Notification No:	S.O. 4065 (E) | 31/08/2022

GRAIN AND QUALITY

Plant Height(cm):	101 cm
1000 Grain Weight(g):	16.7 g
L/B Ratio:	2.75
HRR:	64%
AC:	26.8%



HUSKED GRAIN



POLISHED RICE

EVALUATION AND FIELD SUITABILITY

- evaluated in regional centers of BRRI for 5 years
- evaluated through on-farm trials in 2019
- Boro Irrigated under irrigated conditions, Clay loam to Loam soils.

RECOMMENDED STATES

Assam, Tripura and West Bengal.

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DRR Dhan 81

IET 31929 | Low Glycaemic Index (GI) and High Zinc Rice Variety



Low Glycaemic Index:
GI 55.0

Moderately High Zinc:
22.3ppm

DRR Dhan 81, a medium-duration rice variety with a low glycemic index (GI 55.0). The variety possesses moderately high zinc content (22.3 ppm) along with desirable grain and cooking quality. It exhibits tolerance to salinity and bacterial leaf blight (BLB).

AT-A-GLANCE

- **Ecology:** Irrigated Saline
- **Duration:** 130-135 Days
- **Grain Type:** Short Bold
- **Grain Yield:** 5.2-5.5 t/ha

GRAIN AND COOKING QUALITY



SALINITY AND DISEASE/PEST RESISTANCE

Salinity tolerant; moderately resistant to Stem Borer; moderately tolerant to Bacterial Leaf Blight (BLB).

RELEASED FOR STATES

Bihar, Uttar Pradesh, Assam, Gujarat, Maharashtra, Kerala & Karnataka.

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DRR Dhan 93

IET 31947 | A Zinc rich fine grain variety with moderate resistance to diseases and moderate tolerance to pest Rice variety.

ZINC BIOFORTIFICATION
23.41ppm

DRR Dhan 93 is biofortified zinc (23.41 ppm) rich variety and possesses moderate resistance to various diseases and moderate tolerance to plant hopper with good cooking quality grain.



YIELD	DURATION	HRR
6.0 t/ha	120-126 days	59.53%

Rice Variety:	DRR Dhan 93 (IET 31947)
Variety Type:	A Zinc rich fine grain variety with moderate resistance to diseases and moderate tolerance to pest Rice variety.
Pedigree:	MTU 1010 / Chittimuthyalu
Ecology:	Biofortification
Grain Type:	Medium Slender
Duration:	120-126 days
Yield:	6.0 t/ha
HRR:	59.53%
L/B Ratio:	3.14
ASV:	7.0
AC:	21.94%
GC:	23.67 mm

SALIENT FEATURES

Moderate resistance to Brown Spot, Bacterial Blight, Neck Blast, Sheath Blight, Sheath Rot, and Leaf Blast Moderate Tolerance to Plant hoppers.

VARIETY HIGHLIGHTS

- A Zinc rich fine grain variety
- Biofortification
- Medium Slender grain
- Good cooking quality grain

RECOMMENDED STATES

Gujarat and Maharashtra.

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DRR Dhan 94

IET 31925 | Zinc Rich fine Grain Rice Variety with Zinc content in polished Rice

DRR Dhan 92 is a Bio-fortified Zinc Rich fine grain variety with Zinc content (24.46 ppm) in the rice grain after polishing. It has Moderate Resistance to Neck Blast, Sheath Blight, Leaf Blast, Brown Spot.



ZINC BIOFORTIFIED
24.46 ppm
in the rice grain after polishing

RP 6731-BCRK-RIL-BCR K-4

YIELD:	DURATION:	HRR:
4.935 t/ha	125-130 days	60.77%

Rice Variety:	DRR Dhan 94 (IET 31925)
Variety Type:	Zinc Rich fine Grain Rice Variety with Zinc content in polished Rice
Pedigree:	RNR 15048 *1/Karuppunel
Ecology:	Biofortification
Grain Type:	Medium Slender
Duration:	125-130 days
Yield:	4.935 t/ha



SALIENT FEATURES

Moderate resistance to leaf blast, Brown spot, Bacterial blight, Sheath blight, neck blast.

RECOMMENDED STATES

Assam and Tripura

GRAIN AND COOKING QUALITY

HRR:	L/B Ratio:	ASV:	AC:	GC: 24
60.77%	2.75	4.0	27.61%	mm

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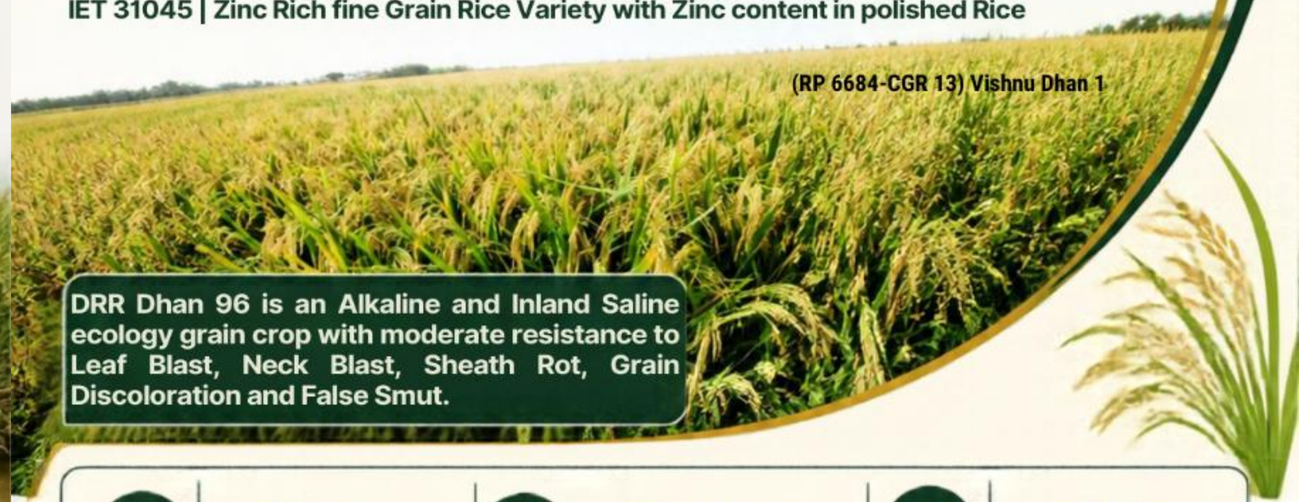
DRR Dhan 96

IET 31045 | Zinc Rich fine Grain Rice Variety with Zinc content in polished Rice



DRR Dhan 96 is an Alkaline and Inland Saline ecology grain crop with moderate resistance to Leaf Blast, Neck Blast, Sheath Rot, Grain Discoloration and False Smut.

Yield:	Duration:	HRR:
4.0 t/ha	120-135 days	61.10%

SALINE-ADAPTATION PERFORMANCE

Ecology: Alkaline and Inland Saline

Gain Over Salinity Check CSR 23: 121%

Gain Over Salinity Check CSR 10: 132%

DISEASE RESISTANCE

moderate resistance to Leaf Blast, Neck Blast, Sheath Rot, Grain Discoloration and False Smut.

SALIENT FEATURES

Moderate resistance to Leaf Blast, Neck Blast, Brown Spot.

Variety Type:
Zinc Rich fine Grain Rice Variety with Zinc content in polished Rice

Grain Type:
Short Slender

Rice Variety: DRR Dhan 96 (IET 31045)
Pedigree: Samba Mahsuri*2 / *Oryza rufipogon-3-TRP-3*
Ecology: Alkaline and Inland Saline
Duration: 120-135 days
Yield: 4.0 t/ha
HRR: 61.10%
ASV: 3.0
AC: 21.50%
GC: 51 mm
Recommended States: Karnataka, Telangana and Andhra Pradesh.

GRAIN APPEARANCE


IET-31045


IET-31045

COOKING QUALITY & GRAIN CHARACTERISTICS

HRR	L/B Ratio	ASV	AC	GC
61.10%	3.135	3.0	21.50%	51 mm

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