Stress-tolerant Rice Varieties

Product Catalogue - South Asia

IRRI

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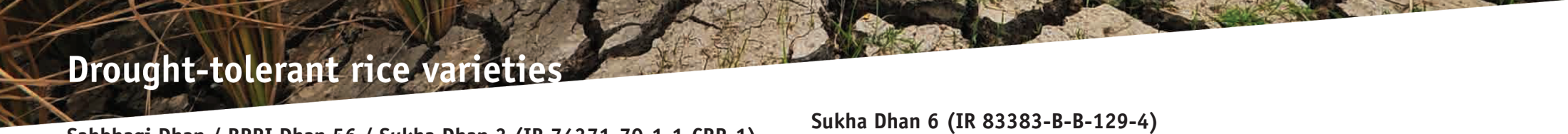

Drought-tolerant rice varieties

Sahbhagi Dhan / BRRI Dhan 56 / Sukha Dhan 3 (IR 74371-70-1-1-CRR-1)

Salient features: Released in 2009 and notified in 2011, Sahbhagi Dhan is a conventionally bred drought-tolerant variety for commercial cultivation in India, Nepal (Sukha Dhan 3) and Bangladesh (BRRI Dhan 56). It has the potential to yield well under drought conditions due to its ability to have better grain setting under drought.

Parent variety: IR 55419-4*2/WAY RAREM
Duration in days: 105-110
Suitable land type: Upland and upper shallow lowland

Grain type: Long slender
Plant height: 95-105 cm
Yield: 4-4.7 t/ha

IR64-Drt1 (DRR 42, IR 87707-445-B-B-B-RP 5208-3; IET 22836)

Salient features: DRR 42 is the improved version of another popular variety IR 64 developed through marker assisted breeding. Along with drought-tolerance potential, it has an added advantage of high yield production. Tolerant to drought, especially drought at flowering and grain filling stage. Resistant to blast, moderately resistant to bacterial blight, brown spot.

Parent variety: Aday Sel/*3 IR 64
Year of notification: 2014
Duration in days: 115-120
Suitable land type: Shallow lowland

Grain type: Long slender
Plant height: 100-105 cm
Yield: 5-5.5 t/ha

DRR 43 (IR 83876-B-B-RP 5124-11-6-2; IET 22080)

Salient features: This variety has been released for commercial cultivation in India. Apart from good yield potential and drought tolerance, it has good grain quality and resistant to blast, moderately resistant to BLB, BPH and WBPH.

Parent variety: IR 03L03/IR 1148
Year of notification: 2014
Duration in days: 115-120
Suitable land type: Shallow lowland

Grain type: Long bold
Plant height: 100-105 cm
Yield: 4-5.0 t/ha

DRR 44/Hardinath 3 (IR 93376-B-B-130)

Salient features: It is the latest released drought-tolerant rice variety in India & Nepal (Hardinath 3). Has excellent yield potential and good grain quality and also drought tolerance. Resistant to blast, moderately resistant to bacterial leaf blight (BLB).

Parent variety: IR 71700-247-1-1-2/IR 03 L120
Year of notification: 2016
Duration in days: 120
Suitable land type: Shallow lowland

Grain type: Long slender
Plant height: 100-105 cm
Yield: 5-5.5 t/ha

Sukha Dhan 5 (IR 83388-B-B-108-3)

Salient features: Sukha Dhan 5 is another drought-tolerant good yielding variety released in Nepal.

Parent variety: IR8383B-B-108
Year of notification: 2014
Duration in days: 125
Suitable land type: Shallow lowland

Grain type: Medium fine
Plant height: 89-105 cm
Yield: 4.5-5 t/ha

Sukha Dhan 6 (IR 83383-B-B-129-4)

Salient features: Sukha Dhan 6 has both submergence as well as drought-tolerant characteristics. This variety is released in Nepal. Resistant to bacteria leaf blight, blast, and brown spot.

Parent variety: IR83383-B-B-129-4 (IR 72022-46-2-3-3-2/IR57514-PMI-5-B-1-2)
Year of notification: 2014
Duration in days: 120-125

Suitable land type: Shallow lowland and mid low land
Grain type: Medium fine
Plant height: 95-102 cm
Yield: 4.5-5 t/ha

BRRI Dhan 57 (BR 7873-5*)

Salient features: A drought-tolerant rice variety released in Bangladesh.

Parent variety: BR11, ICR 146-7027-224
Year of notification: 2010
Duration in days: 100-105
Suitable land type: Upland

Grain type: Slender
Plant height: 110-115 cm
Yield: 4-4.5 t/ha

BRRI Dhan 66 (IR 82635-B-B-75-2)

Salient features: A drought-tolerant variety released in Bangladesh.

Year of notification: 2014
Parent variety: IR 8875-176-B-2, IR 78875-207-B-3
Duration in days: 110-115

Suitable land type: Shallow lowland
Grain type: Medium slender
Plant height: 118-120 cm
Yield: 4.5-5 t/ha

BRRI Dhan 71 (IR82589-B-B-84-3)

Salient features: A drought-tolerant variety released in Bangladesh.

Year of notification: 2014
Parent variety: IR 55423-01 (NSIC RC 9), IRRI 148
Duration in days: 114-117

Suitable land type: Shallow lowland
Grain type: Medium slender
Plant height: 107-108 cm
Yield: 5-5.5 t/ha

Swarna Shreya (IET 24003) (RCPR-8-IR 84899-B-179-16-1-1-1)

Salient features: Swarna Shreya is a high yielding, semi-dwarf, early maturity rice variety suitable for cultivation in aerobic condition or water limiting areas in Chhattisgarh, Madhya Pradesh and Bihar states. It is moderately resistant to leaf blast, neck blast, brown spot, sheath rot and RTD diseases. It also showed moderately resistance to major pests like stem borer, leaf folder, gall midge (biotype 1) and whorl maggot under natural screening.

Parent variety: IR 78877-208-B-1-1 / IRRI 132
Year of notification: 2016
Duration in days: 120-125
Suitable land type: Water limiting irrigated

lowland,rainfed shallow lowland and medium upland
Grain type: Long Bold
Plant height: 105-110 cm
Yield: 4.29-5.0 t/ha

Flood-tolerant rice varieties

Swarna Sub 1/BRRI Dhan 51 (IR05F102)

Salient features: Swarna Sub 1 has submergence tolerance up to 2 weeks, because of Sub 1 gene. This variety is widely grown in flood-prone ecologies of Odisha, WB, Bihar and other eastern states of India along with Bangladesh.

Parent variety: Swarna*3/IR 49830-7-1-2-2
Duration in days: 140-145
Suitable land type: Lowland

Grain type: Medium bold
Plant height: 100 cm
Yield: 5.5-6.5 t/ha

BINA Dhan 11 (Ciherang- Sub1, IR09F436)

Salient features: This submergence-tolerant is the version of Indonesian mega variety called Ciherang. It can tolerate complete submergence for 2 weeks. The variety has a good grain quality, which provides the promising potential to replace other existing low-varieties.

Parent variety: IRRI149, Ciherang
Year of notification: 2015
Duration in days: 120
Suitable land type: Medium lowland

Grain type: Medium slender
Plant height: 107-115 cm
Yield: 5.5-6 t/ha

CR 1009 Sub 1 (IR07F291)

Salient features: CR 1009 Sub 1 is one of the highest rice yielding varieties. It can tolerate complete submergence for 2 weeks. This variety is the flood-tolerant version of CR 1009 (Savitri).

Parent variety: IR49830-7-1-2-2, CR1009
Year of notification: 2017
Duration in days: 150-155
Suitable land type: Lowland

Grain type: Short bold
Plant height: 110-120 cm
Yield: 6-6.5 t/ha

Samha Mahsuri Sub 1/BINA 12 (IR07F101)

Salient features: Sambha Mahsuri Sub 1 is the medium duration fine grain quality flood-tolerant rice variety. It can tolerate complete submergence for 2 weeks. It is the flood-tolerant version of Samba Mahsuri (BPT5204), which is the largest non-basmati export rice variety in India. Also released in Bangladesh.

Parent variety: IR49830-7-1-2-2,
Samba Mahsuri
Duration in days: 135
Suitable land type: Lowland

Grain type: Medium slender
Plant height: 80-85 cm
Yield: 4.5–5 t/ha

Ranjit Sub 1 (Ranjit/Swarna Sub 1//Ranjit)

Salient features: Suitable for cultivation in low land areas. Submergence-tolerance capacity up to two weeks.

Parent variety: IR49830-7-1-2-2, Ranjit
Year of notification: 2018
Duration in days: 150-155
Suitable land type: Lowland areas

Grain type: Medium slender
Plant height: 105 – 110 cm
Yield: 5-5.5 t/ha

Bahadur Sub 1 (Bahadur/Swarna Sub 1//Bahadur)

Salient features: Suitable for cultivation in lowland areas. Submergence-tolerance capacity up to two weeks.

Parent variety: IR49830-7-1-2-2, Bahadur
Year of notification: 2018
Duration in days: 150-155
Suitable land type: Lowland

Grain type: Medium slender
Plant height: 105 – 110 cm
Yield: 5-5.5 t/ha

BRRI Dhan 52 (IR85260-66-654-Gaz2)

Salient features: Submergence tolerance up to 2 weeks.

Parent variety: IR40931-33-1-3-2, BR11
Year of notification: 2010
Duration in days: 140-145
Suitable land type: Lowland

Grain type: Medium slender
Plant height: 116 cm
Yield: 4.5-5 t/ha

Salinity-tolerant rice varieties

CSR 36 (IET 17340)

Salient features: CSR-36 is a medium duration salt-tolerant variety which was developed by CSSRI for saline and sodic areas of country.

Parentage: CSR 13/Panvel 2//IR 36
Year of notification: 2005
Duration in days: 130-135
Stress suitability/tolerance: Can tolerate soil stress up to pH_2

range 9.6 – 9.8 (sodic) and ECe6-10 dSm^{-1} (saline)
Grain type: Long slender
Plant height: 110-112 cm
Yield: 5-5.5 t/ha

CSR 43 (CSR-89IR-8)

Salient features: CSR 43 a short duration salt-tolerant variety, which matures ~ 20 days earlier than the other prevailing varieties by the end of October. It helps in timely sowing of wheat. This variety has a huge potential in sodic soil of UP and Bihar and also becoming popular in other areas due to its earliness with good grain quality.

Parentage: KHAO DAWK MALI 105/IR 4630-22-2-5-1-3//IR 20925-33-3-1-1-28 IR49737-3B-28-2B
Year of notification: 2014 (For sodic soils of UP)
Duration in days: 105-110
Stress suitability/tolerance: Can tolerate up to

pH_2 range 9.5-9.7 and has high potential in sodic soil and suitable for inland salt affected areas
Grain type: Long slender
Plant height: 96-100 cm
Yield: 4.5-5 t/ha

CR Dhan 405 (CR 2577-1)

Salient features: It is an early duration salt-tolerant variety released for cultivation in coastal saline areas of India for dry season.

Parentage: IR72046-B-R-3-3-3-1
Year of notification: 2012 (For costal saline of Odisha)
Duration in days: 105-110
Stress suitability/tolerance: Suitable up to pH

range 5.0-8.0 ds/M and for coastal saline areas
Grain type: Medium slender
Plant height: 110 cm
Yield: 4.5-5.0 t/ha

CR Dhan 406 (CR2092-158-3; IET 19472)

Salient features: It is a long duration salt-tolerant variety released for cultivation in coastal saline areas of Odisha. Resistant to yellow stem borer and moderately resistant to sheath blight and bacterial leaf blight.

Parentage: Jaya/Lunishree
Year of notification: 2012
Duration in days: 150-155
Stress suitability/tolerance:Suitable up to Ece range from

5.0-8.0 dS/m in coastal saline areas
Grain type: Short bold
Plant height: 120 cm
Yield: 5.0-5.5 t/ha

DRR 39 (Jag Jeevan) (IET-19487)

Salient features: This is a salt-tolerant variety released by Directorate of Rice Research, Hyderabad (DRR) for coastal areas and has a good grain quality. Resistant to blast and BPH, moderately resistance to WBPH. It is tolerant to both salinity and drought.

Parentage: CSR3/Kasturi
Year of notification: 2009
Duration in days: 130-135
Stress suitability/tolerance: Suitable for

coastal saline areas
Grain type: 105-110 cm
Plant height: Long slender
Yield: 5.0-5.5 t/ha

Salinity-tolerant rice varieties

BRRI Dhan 47 (IR63307-4B-4-3)

Salient features: A salinity-tolerant variety released in Bangladesh.

Parentage: IR 51511-B-B-34-B/TCCP 266-2-49-B-B-3
Year of notification: 2007
Duration in days: 140-150
Stress suitability/tolerance: Highly saline (8-10 dS/m) coastal saline areas
Grain type: Short bold
Plant height: 100 cm
Yield: 4.0-7.0 t/ha

BINA Dhan 8 (IR66946-3R-149-1-1)

Salient features: Salinity-tolerance upto 12dS/m.

Parentage: IR 29/POKKALI
Year of notification: 2010
Duration in days: 130-135
Stress suitability/tolerance: Highly coastal saline areas
Grain type: Medium bold
Plant height: 90-95 cm
Yield: 5.5-6.5 t/ha

BRRI Dhan 55 (IR73678-6-9-B)

Salient features: Salinity-tolerance upto 8 dS/m, moderate drought and moderate cold tolerant.

Parentage: IR64, Oryzarufipogon
Year of notification: 2011
Duration in days: 145
Stress suitability/tolerance: Moderate coastal saline acid soils and medium upland areas
Grain type: Long Slender
Plant height: 100 cm
Yield: 6.0-7.0 t/ha

BINA Dhan 10 (IR64197-3B-14-2)

Salient features: Salinity-tolerance upto 10dS/m.

Parentage: IR42598-B-B-B-B-12/NONA BOKRA
Year of notification: 2012
Duration in days: 125-130
Stress suitability/tolerance: Coastal saline areas
Grain type: Medium slender
Plant height: 100-110 cm
Yield: 5.5-6.0 t/ha

BRRI Dhan 61 (BR7105-4R-2)

Salient features: Salinity-tolerance upto 12dS/m.

Parentage: IR64419-3B-4-3/BRRI dhan29
Year of notification: 2013
Duration in days: 145-150
Stress suitability/tolerance: Coastal saline areas
Grain type: Medium slender
Plant height: 95 cm
Yield: 5.5-6.0 t/ha

BRRI Dhan 67 (BR7100-3R-6-6)

Salient features: Salinity-tolerance upto 12 dS/m.

Parentage: IR61247-3B-8-2-1/BRRI dhan36
Year of notification: 2014
Duration in days: 140-150
Stress suitability/tolerance:Coastal saline areas
Grain type: Medium slender
Plant height: 100 cm
Yield: 3.8-7.4 t/ha (depends on salinity-stress condition) and 6-7.5 t/ha (in non-stress condition)

BRRI Dhan 73 (IR78761-B-SATB1-28-3-24)

Salient features: Salinity-tolerance upto 12dS/m.

Parentage: BRRI dhan40/IR 61920-3B-22-1-1
Year of notification: 2014
Duration in days: 120-125
Stress suitability/tolerance: Coastal saline areas
Grain type: Medium slender
Plant height: 120-125 cm
Yield: 3.5-6 t/ha

Multi Stress-tolerant Rice Varieties

BRRI Dhan 79 (BR9159-8-5-40-14-57)

Salient features: Submergence and stagnant water tolerance up to 2 weeks.

Parent variety: BRRI Dhan49, BRRI Dhan52
Year of notification: 2017
Duration in days: 135-140
Suitable land type: Lowland
Grain type: Medium slender
Plant height: 110-112 cm
Yield: 5.5 t/h

CR Dhan 801 (IR 96322-34-223-B-1-1-1-CR 3955-2)

(Drought & Submergence)
Salient features: It is tolerant to both submerge and drought. Released in India.

Parent variety: IET 25667 (IR 96322-34-223-B-1-1-1-CR 3955-2) IR 81896-B-B-195/2*IR05F102//IR 91659- 54-35
Year of notification: Not yet notified
Duration in days: 125-130
Suitable land type: Medium shallow lowland
Grain type: Short bold
Plant height: 80-98 cm
Yield: 5-5.5 t/ha

BRRI Dhan 78 (IR77092-B-2R-B-10)

(Salinity & Submergence)
Salient features: Salinity-tolerance upto 8 dS/m and submergence upto 2 weeks. Released in Bangladesh.

Parent variety: IR 84649 cross
Year of notification: 2016
Duration in days: 130-135
Suitable land type: Tidal/costal saline areas
Grain type: Medium slender
Plant height: 120 cm
Yield: 4.5-5.5 t/ha

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For More Information :

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About STRASA:

Since 2007, IRRI's project Stress-Tolerant Rice for Africa and South Asia (STRASA) in collaboration with AfricaRice delivered rice varieties tolerant to abiotic stresses benefitting nearly 18 million farmers in South Asia and Sub-Sahara cultivating rice in unfavourable environments.

Supported by the Bill & Melinda Gates Foundation, it is a collaborative effort to develop and deliver high-yield rice varieties tolerant to abiotic stresses; submergence, drought, and salinity in South Asia and submergence, drought, salinity, cold and iron toxicity in Africa.

Now in its final phase of implementation ending in 2019, the project aims to reduce poverty and hunger, and increase food and income security for resource-poor farm families and rice consumers in South Asia and Sub-Sahara Africa through the development and dissemination of high-yield rice varieties tolerant to abiotic stresses.