Regional Rice Research Station
Navsari Agricultural University, Vyara- 394 652, Dist.: Tapi, Gujarat

The Regional Rice Research Station is the oldest rice research station in the Gujarat state established at Vyara in the year 1934. Geographically Vyara comes under Tapi district at East Longitude: 73^0 20' North Latitude: 20^0 10' and 69 m above sea level. Regional Rice Research Station comes under Navsari Agricultural University, Navsari is mainly working on Rice and Rice based cropping sequence strategically placed in eastern part of South Gujarat to cater the requirements of diverse ecological situation *viz.,* irrigated transplanted, rainfed transplanted and rainfed upland.

Major contributions to AICRIP

Crop Improvement – *Plant Breeding*

- Vyara centre has released 11 rice varieties including two rice hybrids in last ten years *viz*., upland rice varieties **Purna** and **GR 16 (Tapi)**, rainfed transplanted rice variety **GNR 6**, first public sector state release early rice hybrid **GNRH 1** and mid early rice hybrid **GRH 2**, long bold rice varieties **GR 17 (Sardar)** and **GR 25 (Mahatma)**, early maturing fine grain variety **GR 18 (Devli Kolam)**, high protein biofortified variety **GNR 9** (**Lalkada Gold)** and long slender rice varieties **GR 24** (**Navsari Parimal)** and **GR 28 (Navsari Valmiki)** during 2015 to 2025.
- Successfully conducted 146 breeding experiments from 2015 to 2025.
- Nominated 90 entries in 8 different segments *viz.*, upland, aerobic, hybrid, medium slender grain, early, mid-early, CSTVT and ISTVT segment, from 2015 to 2025.

Popular varieties released from RRRS, NAU, Vyara

- Eleven varieties released Puffed and Beaten rice varieties GR 17 (Sardar) and GR 25 (Mahatma) very popular among rice farmers. MoU signed with private sector company for commercialization and wider dissemination of Medium slender grain rice hybrid GRH 2.

Purna: IET 18654
Parentage: Annada x RR 151-3
Duration (Days): 93-97
Average yield (kg/ha): 2500-3000
Grain type: Short bold
Special features: Early maturing, semi tall upland rice variety

GNR-6: IET 23961
Parentage: IR 28 x NAUR 1
Duration (Days): 100-105
Average yield (kg/ha): 2500-3000
Grain type: Long slender
Special features: Early maturing, long slender variety for rainfed transplanted ecology

GNRH-1
Parentage: NVSR-MS1 x 12SP105
Duration (Days): 110-115
Average yield (kg/ha): 5000-5500
Grain type: Long slender
Special features: Early maturing, High yielding

GRH-2
Parentage: NVSR-MS1A x 12KP10
Duration (Days): 120-125
Average yield (kg/ha): 6000-6500
Grain type: Medium slender
Special features: Mid-early, high yielding, good grain quality rice hybrid

GR-16 (Tapi) IET 26646
Parentage: GR 5 x Danteswari
Duration (Days): 95-100
Average yield (kg/ha): 3500-4000
Grain type: Long bold
Special features: Early maturing, non-lodging upland rice variety

GR-17 (Sardar) IET 27876
Parentage: Gurjari x Jaya
Duration (Days): 113-115
Average yield (kg/ha): 5500-6000
Grain type: Long bold
Special features: Early maturing, non-lodging puffed and beaten rice variety, Moderately resistant against leaf blast and neck blast

GR-18 (Devli kolam) IET 27419
Parentage: GAR 13 x JGL 3828
Duration (Days): 110-115
Average yield (kg/ha): 5400-5800
Grain type: Medium slender
Special features: Early maturing, High yielding quality rice variety

GNR-9 (Lalkada gold) IET 28699
Parentage: IR 28 x Lalkada gold
Duration (Days): 110-115
Average yield (kg/ha): 4000-4200
Grain type: Long slender
Special features: Early maturing, non-lodging biofortified rice variety with high protein, Iron & Zinc and moderately resistant against leaf blast

GR-24(Navsari Parimal) IET 29995
Parentage: Gurjari x IR 28
Duration (Days): 110-115
Average yield (kg/ha): 4100-5100
Grain type: Long slender
Special features: Early maturing, non-lodging, long slender grain rice variety with moderately resistant against leaf blast

GR-25 (Mahatma): IET 29778
Parentage: GR 7 x Jaya
Duration (Days): 130-135
Average yield (kg/ha): 6100-6500
Grain type: Long bold
Special features: Beaten (Poha) variety with Mid-late maturity, moderately resistant against leaf blast

GR-28 (Valmiki):
Parentage: GR-7 x NVSR-2094
Duration (Days): 120-125
Average yield (kg/ha): 5200-5600
Grain type: Long slender
Special features: Early duration long slender grain quality rice variety, moderately resistant against leaf blast

Seed production technology

Rice seed producers of South Gujarat taking hybrid rice (GRH 2) seed production during summer season are advice to follow 3:6 (15 cm between male lines, 20 cm between male and female lines and 15 cm between female lines) or 2:6 (30 cm between male lines, 20 cm between male and female lines and 15 cm between female lines) male: female row ratio for higher seed setting, seed yield and net profit.

Crop production

Agronomy

- Farmers of south Gujarat heavy rainfall zone (AES-III), growing aerobic rice (variety GNR 3) are advised to sow crop at spacing of 20 cm between rows for achieving profitable yield.
- Farmers of South Gujarat, growing direct seeded drill rice (Purna or GR 5) organically are recommended to apply 37.5 kg N/ha (50% RDN) through FYM for achieving profitable yield.
- The farmers of South Gujarat growing aerobic rice are recommended to adopt either of the following recommendation (i) Pre-emergence application of pendimethalin 30 % EC 1000 g a.i./ha (100 ml/15 litre of water) *fb.* Post emergence application of triafamone 20% + ethoxysulfuron 10 % WG (premix) 44 +22.5 g a.i./ha (6.5 g/ 15 litre of water) **OR** *fb.*penoxsulam 1.02% + cyhalofop-butyl 5.1% OD (premix) 120 g a.i./ha (60 ml/15 litre of water) at 20-25 days after sowing **OR** *fb.*Hand weeding 30 DAS (ii) Pre-emergence application of Pretilachlor 30 % + pyrazosulfuron-ethyl 0.75 % WG (premix) 600 +15 g a.i./ha (60 g/15 litre of water) *fb*. metsulfuron-methly 10% + chlorimuron-ethly 10 % WP (premix) 4 g a.i./ha (0.60 g/15 litre of water) **OR** *fb*. triafamone 20% + ethoxysulfuron 10% WG (premix) 44.0 +22.5 g a.i./ha (6.5 g/ 15 litre of water) **OR** *fb*. penoxsulam 1.02% + cyhalofop-butyl 5.1% OD (premix) 120 g a.i./ha (60 ml/15 litre of water) as post-emergence at 20-25 days after sowing **OR** *fb*. Hand weeding 30 DAS (iii) Hand weeding at 20 and 40 DAS for effective weed management and obtaining higher yield.

Crop protection

Plant Pathology

- Summer paddy growers in South Gujarat are advised to seed soaking with azoxystrobin 23SC at 0.046% solution, 1ml /500 ml water soaked in one kg seeds for two hrs + Soil application with *Trichoderma harzianum* 1.5% wp (2x 10^6 cfu/gm) @ 1g/m2 or seed treatment with azoxystrobin 23SC at 0.046% solution, 1ml /500 ml water soaked in one kg seeds for two hrs for better plant population, minimum seedling mortality due to *Sclerotium rolfsii* along with good seedling vigor.
- Rice root knot pathogen was identified as *Meloidogyne graminicola* and is first reported in South Gujarat conditions.
- Rice genotypes *viz*., NVSR-591, NVSR 3065, IR-64 and NVSR 3110 were identified resistant against leaf blast disease caused by *Pyricularia oryzae* (native isolate) under artificial inoculation field conditions.
- Rice varieties *viz*., Mandakini. Lambayeque and Aditya were identified moderately resistant against sheath blight disease caused by *Rhizoctonia solani* (native strain) in artificial inoculation field conditions.