

VARANASI

Banaras Hindu University (BHU)
Uttar Pradesh

AICRIP center at Varanasi was established as a sub center in 1976 at Institute of Agricultural Sciences, Department of Genetics & Plant Breeding, BHU with the objective of developing varieties suitable for rice-wheat cropping system keeping in view the constraints of high rainfall, poor drainage and poor soil fertility. Presently, emphasis is given to hybrid rice and boro rice.



Major Contributions

Crop Improvement

Varieties Identified & Released

HUBR 2-1(Malaviya Dhan-1)

SVRC release in 2005

Parentage: HBR92/Pusa Basmati/Kasturi

Duration: 130-135 days

Grain yield: 45-50 q/ha

Characters: medium duration, high yielding variety, having fine grain, and high aroma



HUR-36 (Malviya Dhan 36)

SVRC release in 1997.

Parentage: Mahsuri by mutation breeding

Duration: 135-140 days

Grain yield: 40-45 q/ ha

Characters: Semi tall, matures 10-15 days earlier to the parent

HUR-105 (Malviya Sugandh-105)

CVRC release in 2009

Parentage:

Duration: 135-140 days

Grain yield: 45-50 q/ha

Characters: photo insensitive variety, high yielding variety, having long grain, and strong aroma

HUR-3022 (Malaviya Dhan-2)

SVRC release in 2005

Parentage: IR36/ HR137

Duration: 110-115 days

Grain yield: 45-50 q/ha

Characters: Early variety with fine grain quality



HUR-4-3 (Malviya Sugandh 4-3)

CVRC release in 2009

Parentage: Mutation breeding of Lanjhi, a tall aromatic land race

Duration: 130-135 days

Grain yield: 60-65 q/ha

Characters: fine grain with mild aroma



HUBR 10-9 (Malviya Basmati Dhan 10-9)

CVRC release in 2013

Parentage: Taraori Basmati/Jaya Duration: 134-137 days

Grain yield: 50-60 q/ha

Characters: fine grain with moderate aroma for basmati areas, responsive to fertilizers. Suitable for rice-wheat cropping system.

HUR-917(Malviya Sugandh Dhan-917)

SVRC release in 2014

Parentage: selection from Dehradun Basmati

Duration: 134-137 days

Grain yield: 45-50 q/ha

Characters: tall (110 cm) and does not lodge, high hulling and milling recovery, excellent cooking quality with good taste and mild aroma

Crop Production

Agronomy

- For double transplanting or locally known as “Sunda planting” of rice in flash flood areas, nursery period of seedling should not be extended beyond 7 weeks. It should be of 3 + 3 weeks or 3 + 4 weeks. All double transplanting (with tall Mahsuri variety) performed better as compared to single transplanting.
- Concerted efforts of AICRIP and State dept of agriculture resulted in increase in hybrid rice area.
- Rice seedling with 8-row drum seeder should be done 6 hours after puddling and should not be beyond 24 hours.
- Hybrids APHR-2, VRH-4, Pro Agro-6201, PHB-71, KRH-2 and Arize-6444 were found promising under agro climatic zones of Varanasi.
- Hybrid rice could be fertilized with 150 kg N, 20 kg Mg and 1.0 kg B along with basal application of 75 kg P₂O₅, 60kg K₂O and 5.25 kg Zn per ha for increasing productivity as well as for improving quality.
- Among scented rice varieties, Haryana basmati, Pusa basmati-1 and GR-32 were found promising and yielded maximum at 60 kg N ha⁻¹.
- Application of Butachlor or Anilophos fb. 2, 4-D Na were found to be most effective in managing the weeds in direct sown rice.
- For managing weeds in transplanted rice, new herbicide molecules of Flucetosulfuron, Penoxulam + Cyhalofop- butyl, Bispyribac sodium as well as



sequential application of Flucetosulfuron followed by bispyribac sodium were found effective.

- Farmers were motivated to adopt SRI method of cultivation, especially with hybrid rice for increased productivity.
- Aerobic rice yield (Var. HUR-3022) increased significantly with increasing seed rate from 25 to 35 kg ha⁻¹ whereas 20 cm row spacing recorded significantly higher yield as compared to wider row spacings (25 and 30 cm). Application of Pendimethalin + Bispyribac sodium for managing savior weed problem of weeds in aerobic rice proved as effective as need based hand weeding.
- Higher Zn and Fe content in aromatic rice grain (variety HUBR 2-1) can be achieved with the application of Zn EDTA @ 1 kg ha⁻¹ through soil and Fe-EDTA @ 0.5 kg ha⁻¹ through foliar spray separately.