

CHATHA

SK University of Agricultural Sciences & Technology of Jammu (SKUAST-J) Jammu & Kashmir

A sub-station was established by Department of Agriculture at Ponichak, Jammu to carry out the research work on rice. Later on, All India Coordinated Research Improvement Project (AICRIP) nominated it as one of the testing center for coordinated research only that too on voluntary basis (without any financial assistance). The mandate includes breeding high yielding varieties suitable for Sub-tropical, Mid-hills, High-hills and Rainfed areas, increasing grain length of traditional varieties with desired aroma. Public and private sector rice hybrids are being tested and recommended for cultivation among the farming community.



Major contributions to AICRIP

Crop Improvement

- This rigorous screening resulted in isolation of a Japonica-glutinous rice variety **Giza 14** suitable for mid hill areas of the region where hailstorm is the problem. Because of its high yield potential and non-shattering character, farmers accepted it very readily and still cultivating it.
- With the screening of coordinated trials, one more variety viz., **IET 1410** an early maturing semi-fine variety was identified and isolated for sub-tropical areas of Jammu, Kathua, Udhampur and Rajouri districts under assured irrigation and still farmers do cultivate it.
- A number of other cultures viz., **K 39, K 78, K 343** and **K 448** were also evaluated and recommended for mass cultivation in the mid hill and high hill areas of this region.
- Subsequently with the identification of major constraints and donors resistant to various diseases, a comprehensive breeding programme was tailored for execution so as to generate location specific varieties. As a result of these concerted efforts, a semi fine medium maturity rice variety **PC 19 (Tawi)** was isolated and released for sub-tropical areas. Later on, AICRIP was shifted to R. S. Pura to carry out rice research work on both Basmati and non basmati rice.

Varieties developed & released

Ranbir Basmati (IET 11348)

- Superfine quality rice variety
- Matures 20-25 days earlier to Basmati 370
- Less susceptible to lodging
- Yield potential - 25-30 q ha⁻¹.
- Suitable to Rajouri and Poonch districts



Saanwal Basmati (IET 15815)

- Medium tall Basmati variety of *indica* group
- Average height -140-145 cm having compact and straight panicle
- Slow senescence
- Moderately resistant to shattering
- Matures in 140-145 days
- Recommended for Basmati growing belts of Jammu & Kathua districts.

Basmati 564 (IET 17269)

- Quality parameters similar to Basmati 370 besides having good aroma.
- Resistant to lodging and other biotic stresses.
- Yield potential - 35-40 q ha⁻¹



SJR-5 (IET 19972)

- Recommended for release at national level for the states of Jammu & Kashmir, Haryana and Tamil Nadu.
- Desirable quality characters like HRR (68.25%), grain length (6.96 mm), amylose content (24.57 %) and soft gel consistency.
- Yield potential - 55-60 q ha⁻¹

Giza 14

- Japonica type rice introduced from Egypt
- Highly resistant to hailstorm
- Recommended for mid hills and hilly areas of Rajouri and Poonch districts.
- moderately resistant to blast
- Late in maturity and has short bold grains.

RR 8585 (Ajay)

- Replacement for Jaya and matures about a week earlier
- Very high tillering, has erect, broad and green leaves.
- Non lodge because of its stiff straw
- Panicle is dense and compact with good panicle exertion
- Highly resistant to BLB
- Yield potential - 60 q ha⁻¹.
- Recommended for cultivation in the sub-tropical irrigated conditions of Jammu division.

K 343, K448 and K 39

- Identified and recommended for hill ecology of Jammu region.

Some of the recent released varieties of rice released by SKUAST-Kashmir for temperate conditions Viz. Shalimar rice², Shalimar rice³ are also cultivated in temperate conditions of Jammu region.

Crop production

Agronomy

Popularizing recent rice production technologies

- System of rice intensification (SRI) is a new technique introduced in the state. The FLD's on SRI conducted using popular cultivars have shown 15-20 % higher yield compared to the farmers' conventional practices.
- Hybrid rice - Farmers in Jammu region are growing hybrid rice very extensively and during kharif 2014 the total area under hybrid rice was more than 6000 hectares.
- Integrated nutrient management (INM) - Farmers are now aware of the judicious use of chemical fertilizers along with other green manuring crops like sesbania which is profitable to add the N requirement in rice cultivation. Generally farmers of the state are applying and incorporating FYM / compost during ploughing. Some progressive farmers are also applying calcium, magnesium and sulphur in combination with NPK.

Crop protection

Entomology

- Pest scenario of the region reveal the extent of damage of paddy nursery by grasshopper to the extent of 20-25%, while transplanted paddy was damaged up to 2-5% by rice hispa and leaf folder.

- One entry 17786 (NDR 9930029) was found resistant rice leaf folder. The parasitization of *Apanteles* sp on *C. medinalis* ranged from 20-25%.
- The AICRIP paddy trials are being screened for resistance to plant pathogenic nematodes viz., *Meloidogyne graminicola*, *Helicotylenchus*, *Tylenchorhynchus*, and *Pratylenchus*.

Plant pathology

- ♦ Screening of the germplasm against different diseases is being done regularly to assess the advanced breeding lines and to identify broad-spectrum resistance to brown spot, bacterial leaf blight, sheath blight, false smut and grain discoloration.
- ♦ Among the new fungicides evaluated for controlling sheath blight, sheathmar (Validamycin), bumper (propiconazole), contaf (hexaconazole) and metominostrobin 20SC have been found superior over other test formulations.
- ♦ Besides Saaf and companion (combinations of carbendazim and mancozeb), contaf and sitara (Hexaconazoles), Indofil M-45 and metominostrobin 20SC were highly effective in checking brown spot.
- ♦ Among the biopesticide formulations, defender and floezen-P proved effective in controlling brown spot.
- ♦ Three sprays either of saaf (a combination of carbendazim and mancozeb), bavistin, contaf (hexaconazole) or result (propiconazole) at an interval of 10 days after the appearance of disease symptoms, were found effective in controlling glume discoloration in panicles and spikelets besides increasing grain yield over the untreated plots.