JAGDALPUR

S.G. College of Agriculture & Research Station
Chhattisgarh

This station was established in 1997-98 in Bastar district to cater the research needs of tribal rice farmers. Major mandate is to work on all aspects of upland rice ecosystem.

Major contributions to AICRIP

Crop Improvement

Plant Breeding

- Germplasm - A total of 5628 segregating lines of different generations have been handled by Jagdalpur centre. On the basis of station trials, 5 promising entries have also been nominated to AICRIP. Crossing programmes for early duration rice breeding materials were initiated and 130 crosses were made between Vandana and Morobaken introgressed lines and segregants were selected for earliness and high yield.
- Promising lines have been identified for very early, early, mid early, medium and aromatic slender groups along with hybrids
- Upland rice - Extensive survey was made for well adopted local genotypes and selections are being done for sacrifiable grain yield. Among local materials Jdp-12-33, Jdp-12-34 and Jdp-12- 38 are found promising and are under final level of testing.
- Aerobic rice - Traditional varieties were collected from villages of five districts of Bastar division and exotic lines were obtained from International Rice Research Institute, Philippines. Currently, there are 85 lines for aerobic group, of which IR-84887-B- 15- Jdp-12-5 and IR-86887-46-1-1-2-Jdp-12-8 are promising.

- AICRIP nominations - During 2007-2011, five entries were nominated viz. JDP 13-1-RR 419-7 (IET 21278), JDP 39-1-RR 411-36 (IET 21279) and JDP 382-6-DSU-4-4 (IET 22049) in IVT- VE -DS (TP), AVT VE TP and IVT E DS, respectively. Presently, two varieties are in pipeline and will be nominated shortly in AICRIP trials.
- Maintenance Breeding/ germplasm available - Under NATP project more than hundred local genotypes of rice have been collected from different parts of Bastar division and collected germplasm deposited to NBPGR and Gene bank of IGKV Raipur and are being maintained through single plant selection at this station. Apart from the project, 290 local germplasm have been collected and are being evaluated. At present we have 552 accessions under all avenues of rice research.

Hybridization programme - Looking to wide variability in local rice varieties and large area under upland rice, hybridization programme has been started since 2007.

Achievements at a glance

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Breeding materials generated	130	109	136	89	215	29	146
promising lines identified	11	13	11	10	13	28	32
Attempts on Biotic and abiotic stress tolerant Breeding	-	-	-	-	-	Upland rice breeding programme initiated	
AICRIP nominations	-	-	2	2	1	-	3 entries are in advanced stage of testing
Varieties/hybrids identified/ released	2	3	1	2	4	11	23
Seed Production activities							
Maintenance breeding/ germplasm available	59	68	74	79	120	390	552

Crop Production

Agronomy

Studies have been conducted for levels of nitrogen, interaction between nitrogen levels and cultivars, rice and sun hemp cultivation practices under various fertilizer dosages, dosages and timing of herbicides, nitrogen response trials on selected AVT-2, management practices for enhancing grain yield and soil health of rainfed upland rice, evaluation of new herbicide molecule in direct seeded rice under puddled condition, survey for predominance of weedy rice in different rice ecosystems, management of micronutrient in rice based cropping system, SRI methods, cultural management trials-CMT under upland situation, integrated weed management in aerobic rice and selective mechanization for enhancing productivity and profitability of rice cultivation.

Crop Protection

Entomology

- Host plant resistance studies – Various entries in NSN 2, LFST, MRST, and GMBT were screened for resistance to major pests of rice and identified the a number of promising entries against gall midge, BPH, leaf folder, whorl maggot and GLH every year.
- Under insecticide evaluation studies, several insecticidal treatments targeting leaf folder, whorl maggot, plant hoppers, BPH, GLH, Gall Midge, stem borer were studied and best effective treatments were identified. In Pesticide Compatibility Trials (PCT), insecticide and fungicide combinations for leaf folder, blast, BPH, GLH, stem borer, gall midge were tested and the best combinations were identified.

Plant Pathology

- Under NSN 1, NSN2, NHSN and DSN, 212, 416, 647 and 842 entries were found to be promising on screening for BLB, neck blast, sheath blight and brown spot.
- Through field monitoring of virulence of Pyricularia grisea, highly resistant entries were identified.
- Under Disease Management Trial, some new fungicides were evaluated with check fungicides for the management of leaf blast and neck blast. Trials on evaluation of fungicides against location specific diseases have identified promising dosages.