MANDYA

Zonal Agricultural Research Station, V.C.Farm, Mandya
Karnataka

This Agricultural research station was established in December 1969 as AICRP on rice at V.C. farm of Mandya in Karnataka. It has been upgraded as Zonal Agricultural Research Station under the University of Agricultural Sciences, Bangalore, Karnataka.

Major contributions to AICRIP

Crop Improvement

Plant Breeding

Popular varieties released from Mandya

BR 2655 (IET 17165)
Duration (days) - 140-145
Average yield (Kg/ha) –6000-6500
Special features – Blast tolerance

Thanu (KMP 101) (IET 17164)
Duration (days) - 110-115140-145
Average yield (Kg/ha) –4500-5000
Special features – Earliness and Blast tolerance features

KRH-4
Duration (days) - 130-135
Average yield (Kg/ha) –7500-8000
Special features – Higher grain and straw productivity, MS grain

Raksha (KMP 105)
Duration (days) - 110-115
Average yield (Kg/ha) –5000-5500 an yield potential of 5.0-5.5 t/ha. S
Special features – Earliness and Blast tolerance

KRH-2
Duration (days) - 130-135
Average yield (Kg/ha) –7000-7500
Special features – Higher grain and straw productivity, wider adaptability

Mandya vijaya
Duration (days) - 140-145
Average yield (Kg/ha) –5000-5500
Special features – Good cooking quality and Higher grain straw productivity

- Developed and released 18 Rice varieties for three different ecosystems of Karnataka *viz.,* - Southern *maidan* areas (Zone-4, 5 & 6), Hilly zone (Zone-9) and coastal zone (Zone-10). Madhu, Mangala, Mandya Vani, Pushpa, Mukthi (CTH-1), *Bili* Mukthi (CTH-3), Thanu and Raksha are few important varieties which are still popular and in seed production chain.
- Identified 13 rice varieties from all India Coordinated materials and one variety from INGER materials and released for different rice growing ecosystems of Karnataka. Important varieties among them includes Intan and IET-7191 for Hilly Zone, GMR-17 for coastal zone and IET 7575, IET 8116, IR-20, IR-30864 (for saline-alkaline) and IET 1444 (Rasi) for Southern *maidan* areas (Zone-4, 5 & 6).

- Three Rice varieties *viz.,* MTU 1001, MTU 1010 and JGL 1798 released from ANGRAU have been locally evaluated, endorsed and released to irrigated *maidan* areas of Southern Karnataka through SVRC.

- Developed and released three rice hybrids *viz.*, KRH-1, KRH-2 and KRH-4. KRH-1 was released as first ever rice hybrid in India during 1994. KRH-2 was released in 1996 for Karnataka. Later it was identified by CVRC for all India release in 1998. KRH-4 is a medium duration, ms grain hybrid with a yield potential of 8.5-9.0 t/ha., was released in 2012 for Karnataka.

KRH 2

KRH 3

- Developed more than 100 breeding lines for various traits including resistance to BPH, blast and higher water use efficiency through hybridization and selection, and nominated ten of them for AICRIP breeding trials and two of them for plant hopper screening nurseries.
- Collected more than 350 traditional varieties of rice from different parts of the Karnataka. They are characterized for DUS attributes and evaluated for their yield and other special attributes like Protein, Zinc, Iron and amylose content; and resistance to BPH and Blast.
- Fourteen new CMS lines (KCMS 42 to 53) are developed through backcross breeding and ten promising heterotic restorers have been identified for development of new hybrid combinations. Rice hybrids with an ability to withstand moisture stress and BPH tolerance have been identified.
- Public-Private partnership for commercialization of rice hybrid KRH 2 has been established with two seed companies
- After evaluation of more than 1000 rice genotypes 73, 41 and 71 genotypes have been identified with varied degrees of resistance to BPH, leaf blast and neck blast, respectively that can be used in resistance breeding programmes.

Crop production

Agronomy

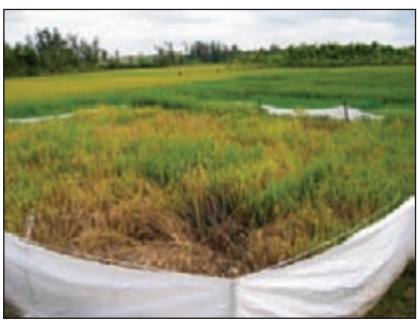
- Standardized fertilizer dose @100:50:50 Kg NPK/ha, for varieties and @120:60:60 Kg NPK/ha., for hybrid rice cultivation in Cauvery command and other irrigated *maidan* areas of the southern Karnataka and included in the Package of practices of UAS (B).

- Measures for reclamation of saline soils through different drainage systems and use of press mud as an amendment in problematic soils have been standardized and recommended in Cauvery command area.
- New weedicides *viz.,* Butachlor 50 EC @ 1250 g a.i./ha or Pyrazosulfuron ethyl 10WP @ 25 g a.i./ha or Bensulfuron methyl 60 g + Pretilachlor 600g a.i./ha (66G) or Pretilachlor 50 EC +Safenor @ 300 g a.i./ha is recommended at 3DAS for both wet and dry rice nursery as against Butachlor 50 EC @ 1250 g a.i./ha within 24 hours of sowing that showed phytotoxicty, more weeds/m^2 and less weed control efficiency.
- In mechanical transplanting nursery establishment method, land preparation, planting, weed management *etc.,* have been standardized and recommended as per local needs. Use of machine transplanting increased the paddy yield by 15-20 % over farmers practice of manual transplanting besides saving the cost of up to Rs. 2000/ha.

Crop Protection

Entomology

- Selection of eco-friendly insecticides *viz.,* Indoxacarb 14.5SC @ 0.3ml/ L for leaf folder, Flubendiamide 480SC@ 50 ml/ha or Flubendiamide 20 WDG @ 150 g/ ha and Chlorantraniliprole 10% OD for stem borer and leaf folder, buprofezin 25SC @ 1.4ml/l for brown planthopper (BPH).
- Identification of 155 promising entries against BPH.
- Selection of 22 local rice germplasm accessions *viz.,* Ratna choodi-1, Ratna choodi-2, Kala kolli, Kottayam, Honasu-1, Honasu-2, JBT-3614, Myroremallige , Akkalu-I, Akkalu-2, Salem sanna ,Raja mudi,Chinnaponni, Karpoorakeli, Rai bog, Anilamanil, Baiganmanji, Manila,Ugibatta,Najarbaat, PS-339 for tolerance BPH.



Plant Pathology

- Management of Udbatta disease of rice: Seed treatment with Carbendazim 25 + Mancozeb 50 WS @ 4 g/kg of dry seeds or to sprouted paddy seeds one day before sowing.
- Management of rice blast disease in nursery by seed treatment: Seed treatment with tricyclazole 75% WP @ 3 g/kg of seeds.
- Management of sheath blight of paddy: Spray propiconazole 25% EC @ 1ml/lt as soon as the symptoms are seen and if necessary at 15 days interval.