

KOTA

Agricultural Research Station, Ummedganj, Kota Rajasthan

This Agricultural research station was established in December 1975 at Kota in Rajasthan with the mandate to develop high yielding aromatic / basmati varieties with export quality characteristics, possesses resistance to biotic and abiotic stresses.



Major contributions to AICRIP

Crop Improvement

- In crop improvement, the prominent rice varieties “Pratap Sugandh-1 (RSK-1091-10-1-1) , BK-79, BK-179 and Chambal have been released by SVRC & notified from the centre.
- Rice varieties Viz, Taraori , Mahi sugandh, PHB-71, Pusa Sugandha-4, Pusa Sugandha-5 and Improved Pusa basmati-1 were found better for their intensive cultivation in the zone. All these were also included in the package of practices.
- Rice varieties like, Pusa sugandha-4, Pusa Sugandha-5, Improved Pusa Basmati-1, Pusa Sugandha-2 & 3, Pratap Sugandh-1 and Taraori basmati are most popular in the state for cultivation and covered about 90-95 percent area of total rice growing areas in the Zone.

Popular varieties released from Kota:



Pratap Sugandh-1 (RSK-1091-10-1-1)

Parentage - IET-13846 x Pusa basmati 1

Duration (Days) -135-140

Average yield (Kg/ha) -4500-5000

Special features - Moderate resistance to blast, bacterial leaf blight and stem borer

Chambal

Parentage - IR-8 x NP-130

Duration (Days) -135-140

Average yield (Kg/ha) -6000-6500

Special features - Moderate resistance to bacterial leaf blight and planthoppers

BK-190

Parentage - IR-14 x IR - 8

Duration (Days) -145-150

Average yield (Kg/ha) -7000-7500

Special features - Moderate resistance to bacterial leaf blight and planthoppers

BK-79

Parentage - TN 1 x NP-130

Duration (Days) -125-130

Average yield (Kg/ha) -4500-5000

Special features - kernel is long slender, white and translucent with good cooking quality.

Crop production

Agronomy

Weed management: Significant findings include -

- Application of pendimethalin (STOMP) @ 1.00 kg a.i. / ha. at 3-4 DAT, butachlor @ 1.5kg/ha at 3-5 DAT, Benthocarb @ 1.00 kg/ha applied as pre-emergence in rice nursery, Anilophos + 2,4-DEE @ 0.4 + 0.53 kg/ha applied at 3-6 days after transplanting, Cinmethylin +2, 4-DEE (50 EC) @ 0.375 kg a.i. / ha applied at 7 days after transplanting, Pretilachlor 50 EC @ 0.750 kg a.i./ha applied at 3-5 DAT, Penoxsulam @ 0.025 kg/ha at 0-5 days after transplanting, Bispyribac-sodium @ 35g /ha at 20 DAT and Anilophos + Ethoxysulfuron (24 + 1 SE) @ 0.3125 + 0.0125 kg a.i./ha at 10 DAT against grassy and broad leaf weeds

Nutrient Management:

- Application of bio-fertilizer (Azolla), one tone + BGA (6 kg/ha) gave 14.0 percent higher grain yield of rice than control (Bio-fertilizer).
- Among the modified urea and coated urea materials, Nimin coated urea applied as basal gave significantly higher grain yield.

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- NPK @ 150:60:50 kg/ha was considered to be the best for hybrid rice. However 50% N and full P₂O₅ and K₂O as basal at planting and remaining 50% N with two equal splits at tillering and panicle initiation stage. Application of nitrogen @ 90 kg /ha was found to be the best for basmati rice. Traditional aromatic rice planted between 10th to 20th July and application of 50 % nitrogen through FYM + 50 % RDF produced higher grain yield.

Water management:

- System of rice intensification (SRI) technique was found effective in transplanted rice and gave higher grain yield and monetary returns against traditional method.
- Irrigation schedule of 150% CPE along with N₁₂₀ P₆₀ K₅₀ kg/ha was found suitable for grain yield of rice under aerobic rice situation
- Rice hybrids PHB-71 and PA 6201 were found suitable for direct seeding under puddled condition with intermittent irrigation.
- Low cost production technology:
- Dipping of roots of seedling in 0.5% ZnSo₄ solution for 12-15 hours was found to be significant superior to foliar spray of ZnSo₄ solution with lime applied three times.
- Yield maximization of rice under irrigated condition revealed that maximum grain yield was obtained by 33 percent extra plant stand and recommended fertilizer application.
- 15th July was found most suitable of transplanting date for scented rice varieties in South-Eastern Rajasthan.
- 30kg seed rate / ha with 20 cm row spacing was found most appropriate to produce more grain yield of rice under aerobic situation.