

Information on AICRIP Centre at Kota

1.	Name of the University/ Department under which the centre is functioning.	Maharana Pratap University of Agricultural & Technology, Udaipur-313001
2.	Name of the centre with postal address, Tel & Fax. E. mail.	Agricultural Research Station, Ummedganj Farm, Post Box No.7, G.P.O.Nayapura,Kaithoon Road, KOTA-324001 Ph: 0744-2844369 (O),Fax: 0744-2844306, E mail: arskota @ hotmail.com.
3.	Name of the person In-charge with E-mail ID & mobile phone no.	Dr.Chandra Prakash,(Agronomist), Ph: 0744-2844369 (O), E mail : cparskota2007@gmail.com Mobile No. 09414862901
4.	Next contact person with e-mail ID & mobile phone no.	Dr. Nanag Ram Koli, (Asstt. Breeder), E mail : nanag70@yahoo.co.in , Ph: 0744-2844369 (O), Mob. 09460570396
5.	Year of establishement as AICRIP centre.	Dec.1975
6.	List of scientist currently on AICRIP roll-discipline wise.	1. Dr.Chandra Prakash Asso.Prof.(Agronomy), 2. Dr. Nanag Ram Koli Asstt. Prof. (Plant Breeding),
7.	List of other AICRIP staff.	Nil
8.	Region of the state represented by the centre.	Kota region (South Eastern Humid Southern Plain)
9.	Rice ecologies represented.	Irrigated transplanted (Wetland)
10.	Districts of the state covered.	Bundi, Baran, Kota, Jhalawar, Banswara, Dungarpur, Udaipur, Chittorgarh, Bhilwara, Rajsamand, Sriganganagar, Hanumangarh, Bharatpur, Alwar, Swaimadhampur, Dholpur & Karoli.
11.	Rice area in each of these districts-ecology wise.	

Table:1- District wise rice area (ha) in Rajasthan 2003-04 (Ecology wise)

Districts	Area in ha.		Total area
	Irrigated (Wetland)	Unirrigated(Upland)	
Kota	5931	0.0	5931
Baran	1363	450	1813
Bundi	7441	1.0	7442
Jhalawar	365	92	457
Kota region	15100	543	15643
Banswara	90	28494	28584
Dungarpur	564	18629	19193
Udaipur	1.0	5140	5141
Udaipur region	655	52263	52918
Bhilwara	178	12	190
Chittigarh	168	608	776
Rajsamand	1.0	92	93
Bhilwara region	347	712	1059
Alwar	159	1.0	160
Bharatpur	1991	53	2044
Dholpur	0.0	779	779
Swaimadhapur	88	70	158
Karoli	17	2041	2058
Bharatpur region	2255	2944	5199
Sriganganagar	3971	0.0	3971
Hanumangarh	20869	0.0	20869
Sriganganagar region	24840		24840

12.	Normal rainfall.	825 mm			
13.	Soil type & fertility status.	(A) Soil type		(B) Fertility status	
		Soil order	Vertisol	Soil Properties	Value
		Soil sub order	Ustert	EC (1: 2.5) dS/m at 25°C	0.37
		Soil great group	Chromustart	pH (1: 2.5)	7.85
		Soil sub group	Typci chromustart	Organic C (g/Kg)	5.69
		Soil texture	Clay loam	CaCO ₃ (g /kg)	3.5
				WHC (%)	49.8
				CEC [cmol (P ⁺) kg ⁻¹]	29.9
				Available N (Kg/ha)	268
				Available P ₂ O ₅ (Kg/ha)	23.9
				Available K ₂ O (Kg/ha)	250.0
				Available Mo (ppm)	0.026
				Available B (ppm)	0.46
		DTPA-Zn (ppm)	0.46		

			Available S (Kg/ha)	9.5
			Db (Mg m ⁻³)	1.48
14.	Popular rice varieties.	Scented group	Non scented group	
		Pusa Basmati-1	Jaya	
		Mahi Sugandha	Ratna	
		Taraori	PBH-71	
		Pusa Sugandha-4		
		Pakistani Basmati		
		Basmati-370		

15. Major production constraints.

(1) Abiotic constraints: - Rain fall is the most important one in which about 60% of the total rice area in the state falls under rainfed farming. Which decide the area under the crop, however, about 60% area in rainfed farming. Only 40% area are irrigation wither through canal or by tube-wells. The productivity of rice under rainfed condition is absolutely determined on the onset of monsoon initial stage and breaks of monsoon at the terminal stage of the growth. Even the 40% area under irrigated rice is also dependent upon the rainfall intensity and distribution in the catchments area of different irrigation projects. The availability of irrigation water from canal system is dependent on adequate rains and if the rains deficient in that even the water for irrigation is hardly available. Uncertainty of availability of irrigation water from canal system forces the cultivators to minimize the rice area and use of early duration varieties resulting in low production. Among the socio –economic factors, poverty and illiteracy are the prominent one. The small holdings and poverty are responsible for imbalance and low use of fertilizers, plantprotection measures over and above to this use of quality seed.

(2) Biotic constraints: - Pest and diseases in rice are not so serious problems so far. However, sporadic appearance of stem borer, army worm, leaf folder, gundhy bug and WBPH among insect pest and BLB, Blast, khaira and *helminthosporium* among diseases may cause a serious threat to the rice cultivation in the area. Imbalance and low fertilizer use, particularly in rainfed rice is an important limiting factor. At present against the recommended dose of at least 40 kg N and 30 kg P₂O₅ /ha the consumption is only 5 percent of the recommended dose in rainfed upland rice area. The uncertainty of rainfall and availability of irrigation water delayed and prolonged transplanting in the field. The transplanting of over aged seedlings invariably results in the severe reduction in the productivity. The use of quality seed is an important input to increase production. However, because of poor risk bearing capacity of farmers they tend to use produce of previous season as their own seed resulting in poor crop stands and heavy infestation of various diseases and pests.

16.	Major contribution of the centre in terms of varieties/ technologies developed.	Varieties Developed	Varieties Recommend for package of practices
		BK-190	Jaya
		BK-79	Ratna
		Chamble	PBH-71

Kasturi

Basmati-370

BK-79

Taraori Basmati

Mahisugandha

Technologies Developed (Rice Agronomy)

1. Dipping of seedling, roots in 0.5% ZnSo₄ solution for 12-15 hour gave best yield. The treatment was significantly superior to foliar spray of ZnSo₄.
2. Application of pendimethalin (STOMP) @ 1.00 kg a.i. /ha 3-4 days after transplanting gave the maximum grain yield of 69.82 qtls/ha as against 52.54 qtls/ha in non weeded check.
3. Butachlore (Machete) @ 1.5kg a. i. /ha at 3-5 DAT was found most effective weedicide for controlling grassy weeds in transplanted rice.
4. Twenty five days old seedlings when transplanted rice gave maximum grain yield. Significant decrease in grain yield was observed when old seedlings were transplanted. Minimum yield was recorded in case of 46 days old seedlings were transplanted.
5. Nimin Coated urea, all basal gave best yield in comparison to prilled urea when applied in three splits. Nimin Coated urea as basal dose gave 20 percent higher grain yield than split application of urea on equal N basis.
6. Use of growth regulators i.e. Brassinosteroids applied @ 1.00 ppm. Both at tillering and panicle initiation stages gave maximum yield with an increase of 28 and 21 percent in the years 1991 and 1992, respectively.
7. Mixture of Azolla (1.00 qt/ha) + BGA (6.0kg/ha) gave 6.9 qtls/ha higher seed yield.
8. The nitrogen requirement of scented dwarf rice varieties is 90 kg which applied 50% (i.e. 45 kg ha⁻¹) at the time of transplanting and remaining 50 per cent is being given in two equal split doses, one of the tillering and another at the panicle initiation.
9. 15th July was found most suitable of transplanting date for scented dwarf rice varieties in South-eastern Rajasthan.
10. Benthocarb @ 1.00 kg ha⁻¹ applied as pre-emergence was found most effective weedicide for weed control in rice nursery.
11. Anilophos + 2,4-DEE @ 0.4 + 0.53 kg ha⁻¹ applied at 3-6 days after transplanting was found most effective herbicide combination for weed control in transplanted.
12. Cinmethylin + 2, 4-DEE @ 0.325 kg ha⁻¹ applied at 7 DAT was found effective herbicide for weed control in transplanted rice
13. Two sprays of Brassino steroid @ 0.5 ppm and Thiourea @ 500 ppm at tillering and panicle initiation stage were found equally effective and gave 8.2 & 8.8 percent higher grain yield of rice over control, respectively.
14. Herbicides: Anilophos + Ethoxysulfaron (24 1 SE) @ 0.3125 + 0.0125 kg a.i. ha⁻¹ at 10 DAT controlled the grassy and broad leaf weeds in transplanted rice. This treatment gave 7.38 and 27.73 per cent higher grain yield over batachlor and non weeded control, respectively.
15. NPK at the rate of 150: 60: 60 kg. ha⁻¹ was considered to 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.
16. Pretilachlore 50 EC @ 0.750 kg a.i. /ha applied at 3-5 DAT was an effective herbicide

for controlling weeds in transplanted rice.

17	Any other relevant information.	Two, Technical Assistant, require for strengthening of the project.
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