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Supplementary Tables

Table S1. List of 69 rice genotypes used in this study

S. No	Genotypes	Landraces/varieties	Area
1.	CO 51	Variety	Tamil Nadu
2.	BABTLA	Variety	Kanchipuram, TN
3.	KARUPUKAVUNI	Landraces	AC and RI, Madurai
4.	SUPER PONNI 43	Variety	Kanchipuram
5.	IR50	Variety	Kanchipuram
6.	GUNDU	Variety	Kanchipuram
7.	RLR	Variety	Kanchipuram
8.	LLR	Variety	Kanchipuram
9.	CHINNAR	Landraces	Tamil Nadu
10.	KRG 13	Variety	West Bengal
11.	KRG 12	Landrace	Tamil Nadu
12.	KRG 9	-	-
13.	KRG 7	Landrace	Tamil Nadu
14.	KRG 4	Landrace	Tamil Nadu
15.	KRG 3	Landrace	Tamil Nadu
16.	KRG 10	Variety	Uttarakhand

17.	KRG 11	-	-
18.	KRG 2	Landrace	Tamil Nadu
19.	KRG 5	Variety	Bangladesh
20.	KRG 16	Landrace	Tamil Nadu
21.	KRG 15	Variety	West Bengal
22.	KRG 14	Variety	Orissa
23.	KRG 17	-	-
24.	KRG 6	Landrace	Tamil Nadu
25.	KRG 1	-	Tamil Nadu
26.	KRG 62	-	-
27.	KRG 65	-	-
28.	KRG 60	-	-
29.	KRG 19	-	-
30.	KRG 20	-	-
31.	KRG 64	Variety	West Bengal
32.	KRG 63	-	-
33.	KRG 61	-	-
34.	KRG 50	Variety	
35.	KRG 45	-	-
36.	KRG 24	Landrace	Tamil Nadu
37.	KRG 21	-	-
38.	KRG 29	Landrace	Tamil Nadu
39.	KRG 22	-	-
40.	KRG 30	Landrace	Tamil Nadu

41.	KRG 66	-	-
42.	KARTHIKA	Variety	Kerala
43.	PUNCHAKAYMA	Landraces	Kerala
44.	PRATHYASA	Variety	Kerala
45.	PISINI	Variety	Kanchipuram
46.	RENJINI	Variety	Kerala
47.	PAVITHRA	Variety	Kerala
48.	MAKOM	Landraces	Kerala
49.	MYSORE MALLI	Landraces	Thanjavur
50.	THOOYAMALLI	Landraces	Thanjavur
51.	VALLAN SAMBA	Landraces	Thanjavur
52.	ILLUPAIPOO SAMBA	Landraces	Thanjavur
53.	THANGA SAMBA	Landraces	Thanjavur
54.	KULLAKAR	Landraces	AC and RI, Madurai
55.	MILAGU SAMBA	Landraces	AC and RI, Madurai
56.	KOTHAMALI SAMBA	Landraces	AC and RI, Madurai
57.	ASD 16	Variety	TNAU, Coimbatore
58.	TPS 3	Variety	TNAU, Coimbatore
59.	CO 53	Variety	TNAU, Coimbatore
60.	KEERAI SAMBA	Landraces	Kanniyakumari

61.	ADT 45	Variety	TNAU, Coimbatore
62.	POONGAR	Landraces	AC and RI, Madurai
63.	AMMAN PONNI	Variety	AC and RI, Madurai
64.	SITHIRAIKAR	Landraces	AC and RI, Madurai
65.	KARUMKURUVAI	Landraces	State seed farm, Kanniyakumari
66.	JCL NEL	Variety	Madurai
67.	RAKTHASALI	Landraces	-
68.	KALASAR NEL	Landraces	Kottaram
69.	KOTTARAM SAMBA	Landraces	Kottaram

Table S2. Analysis of variance (ANOVA) for panicle architecture and yield attributing traits among 69 rice genotypes

Characters	Mean sum of squares		
	Genotype	Replication	Error
Degrees of freedom	68	2	136
Days to 50% flowering	393.13**	4.41	3.95
Plant height	1254.98**	31.98	38.94
Number of productive tillers per plant	21.0283**	5.8019	3.1794
Panicle length	36.606**	2.188	2.541
Number of primary branches	7.4246**	3.3120	2.3909
Number of secondary branches	195.707**	17.399	10.537
Number of seeds per Primary branch	41.397**	4.860	5.540
Number of seeds per secondary branch	19.0226**	0.5380	0.4682
Panicle weight	1.36284**	0.05091	0.62829
Number of filled grains per panicle	2309.91**	152.45	217.64
Spikelet fertility percentage	208.982**	0.032	3.958
1000 grain weight	86.372**	0.094	0.704
Single plant yield	156.301**	11.220	5.728

Table S3. Mean performance of panicle architecture and yield attributing traits for 69 genotypes

S. No	Genotypes	DTF	PH	PT	PL	PB	SB	SPB	SSB	PW	FG	SF	1000 GW	SPY
1.	CO 51	106.67	81.00	17.33	21.67	7.00	8.00	10.57	9.24	1.59	80.01	78.40	15.76	26.77
2.	BABTLA	117.00	64.83	11.00	15.33	7.00	13.00	12.43	6.48	1.20	76.33	72.65	19.74	18.46
3.	KARUPUKAVUNI	116.33	119.33	6.33	24.33	9.00	30.00	16.00	4.75	2.18	134.00	91.16	26.56	22.54
4.	SUPER PONNI 43	90.00	66.33	6.67	19.67	7.00	6.00	10.14	11.40	1.52	90.00	78.26	15.78	9.47
5.	IR50	90.00	82.33	15.00	18.33	6.00	12.00	7.67	3.16	2.30	89.00	67.42	17.74	23.68
6.	GUNDU	105.67	65.00	9.67	17.67	10.00	16.00	13.50	8.11	1.55	91.00	70.00	16.10	14.16
7.	RLR	105.67	75.67	6.67	22.67	7.00	32.00	20.00	4.38	2.28	123.33	82.84	15.88	14.82
8.	LLR	90.67	82.33	6.33	22.67	8.00	32.00	20.63	5.16	2.49	145.00	86.83	17.56	16.13
9.	CHINNAR	91.67	72.33	8.00	17.67	8.00	19.00	19.13	8.05	1.15	92.00	75.41	27.22	20.03
10.	KRG 13	106.00	108.67	7.00	21.00	6.00	8.00	9.17	6.88	2.45	115.00	90.55	17.16	13.81
11.	KRG 12	106.33	93.00	11.00	16.33	8.00	22.00	13.13	6.94	1.53	88.00	89.09	20.34	21.93
12.	KRG 9	106.33	115.33	10.00	20.33	5.00	12.00	13.60	5.73	3.81	90.00	67.67	32.78	29.50
13.	KRG 7	106.00	76.33	7.67	16.33	9.00	15.00	11.56	6.60	3.36	100.00	72.99	16.00	12.27
14.	KRG 4	115.67	73.67	5.00	15.00	9.00	21.00	13.33	4.88	1.33	109.00	74.17	21.04	9.36
15.	KRG 3	106.33	125.00	4.67	21.67	8.00	30.00	19.38	5.82	2.22	125.67	81.76	17.50	11.35
16.	KRG 10	106.00	96.33	7.67	18.67	9.00	27.00	16.22	5.77	2.76	94.67	80.00	21.88	14.76
17.	KRG 11	91.00	119.67	5.67	20.00	6.00	7.00	11.00	9.43	1.53	95.00	77.87	22.08	11.89
18.	KRG 2	91.00	95.00	7.33	28.33	8.00	38.00	14.25	4.08	3.48	130.33	80.59	25.58	25.70
19.	KRG 5	105.67	86.67	6.33	19.67	5.00	13.00	10.80	6.48	1.46	79.00	76.74	29.60	18.56
20.	KRG 16	116.67	104.00	5.33	23.00	9.00	33.00	15.33	4.18	1.98	126.67	78.57	29.04	17.04
21.	KRG 15	90.00	83.00	6.67	19.33	7.00	8.00	10.43	9.13	1.44	108.00	83.08	17.66	12.72
22.	KRG 14	116.00	109.00	8.00	19.67	10.00	12.00	10.50	8.75	2.99	103.33	84.62	25.72	22.63

23.	KRG 17	117.00	66.00	4.00	15.33	8.00	25.00	17.00	5.61	1.88	82.33	71.82	21.40	6.76
24.	KRG 6	116.67	104.33	5.00	20.67	6.00	12.00	12.00	6.00	1.97	96.67	76.92	17.52	8.76
25.	KRG 1	90.00	70.33	5.00	18.00	7.00	13.00	8.29	4.46	1.69	86.67	69.77	27.18	12.23
26.	KRG 62	106.67	104.00	5.33	23.00	8.00	13.00	9.63	5.62	1.52	109.00	71.33	18.04	9.81
27.	KRG 65	106.67	119.67	5.33	26.00	6.00	10.00	10.17	9.33	2.24	104.00	87.39	21.52	11.94
28.	KRG 60	106.00	68.67	4.00	16.67	8.00	16.00	14.75	7.34	1.63	89.00	68.99	22.12	7.87
29.	KRG 19	106.00	69.67	4.33	20.33	7.00	14.00	10.00	5.19	1.38	87.00	86.61	17.86	7.51
30.	KRG 20	117.00	66.00	5.00	20.00	9.00	21.00	12.44	5.66	1.67	140.00	89.74	25.24	17.67
31.	KRG 64	117.00	132.33	4.33	23.33	5.00	10.00	11.00	5.50	1.57	70.00	73.68	20.42	6.19
32.	KRG 63	116.67	112.33	4.33	24.00	9.00	24.00	12.67	4.75	3.15	158.00	88.27	15.36	10.52
33.	KRG 61	116.00	90.33	5.00	18.00	6.00	14.00	13.33	5.71	1.81	110.00	89.43	19.34	10.64
34.	KRG 50	106.33	125.33	4.33	29.67	8.00	18.00	13.13	5.83	3.17	153.33	85.86	25.42	18.73
35.	KRG 45	106.33	123.00	3.00	20.67	10.00	36.00	15.00	5.65	2.99	150.00	80.21	19.20	8.64
36.	KRG 24	116.00	124.00	3.33	14.67	6.00	20.00	17.50	5.58	2.18	112.33	76.28	14.70	5.83
37.	KRG 21	106.67	70.33	9.67	21.33	9.00	19.00	13.78	6.76	2.45	100.00	63.16	20.10	23.32
38.	KRG 29	125.33	71.33	11.33	20.33	9.00	14.00	8.22	5.29	2.34	137.33	85.56	15.12	26.39
39.	KRG 22	116.00	122.33	6.33	20.00	9.00	21.00	14.78	6.20	2.07	155.00	92.26	16.90	16.59
40.	KRG 30	105.67	108.67	10.00	19.67	6.00	30.00	20.00	4.00	1.78	160.00	85.11	13.26	21.22
41.	KRG 66	116.00	85.67	5.00	25.67	9.00	15.00	9.33	9.27	2.77	154.00	86.52	19.56	15.06
42.	KARTHIKA	90.00	99.00	5.33	21.33	9.00	12.00	8.44	7.77	2.13	129.00	83.23	21.18	14.57
43.	PUNCHAKAYMA	90.00	103.33	3.67	23.00	6.00	17.00	13.67	4.82	3.23	175.00	86.84	19.26	11.65
44.	PRATHYASA	90.00	101.33	8.00	22.33	8.00	32.00	20.00	5.00	3.22	103.33	57.89	26.44	23.27
45.	PISINI	90.00	105.33	6.00	18.00	6.00	11.00	11.83	6.33	3.03	111.00	86.05	21.20	18.83
46.	RENJINI	106.67	123.33	8.33	19.67	8.00	13.00	6.25	3.85	2.38	125.67	86.00	20.40	14.04

47.	PAVITHRA	106.00	126.33	8.33	23.67	10.00	32.00	16.50	5.16	2.88	151.33	90.32	18.34	25.68
48.	MAKOM	90.00	135.33	4.67	23.33	9.00	23.00	15.56	6.09	2.54	146.00	92.22	30.60	25.40
49.	MYSORE MALLI	116.67	125.33	7.67	24.33	10.00	8.00	13.70	17.13	3.00	178.00	93.68	16.18	13.44
50.	THOOYAMALLI	106.33	84.67	6.00	25.67	7.00	13.00	12.86	6.92	3.22	170.00	91.89	22.48	19.11
51.	VALLAN SAMBA	90.00	72.67	5.00	20.67	8.00	15.00	13.75	7.33	2.25	140.00	91.50	17.56	14.75
52.	ILLUPAIPOO SAMBA	106.00	80.67	8.67	17.00	8.00	13.00	11.25	6.92	2.53	106.33	77.93	26.14	26.58
53.	THANGA SAMBA	116.67	103.33	5.00	20.67	9.00	10.00	8.89	8.07	2.24	128.00	91.43	13.64	10.48
54.	KULLAKAR	116.00	101.33	8.33	25.00	6.00	10.00	9.33	5.60	2.45	140.00	73.68	23.20	27.06
55.	MILAGU SAMBA	116.67	72.33	13.00	18.00	6.00	12.00	12.67	6.66	2.36	104.00	85.07	15.60	23.12
56.	KOTHAMALI SAMBA	134.00	74.00	7.67	15.33	8.00	18.00	14.88	6.54	1.55	112.00	86.15	24.20	20.78
57.	ASD 16	116.33	111.00	8.67	22.67	7.00	20.00	16.86	5.45	2.57	116.67	71.86	24.40	28.31
58.	TPS 3	116.00	111.00	7.67	20.33	8.00	14.00	8.25	6.59	3.49	134.00	89.33	25.20	29.28
59.	CO 53	116.67	97.33	3.00	19.33	9.00	20.00	11.89	5.35	2.34	140.00	87.50	31.20	13.10
60.	KEERAI SAMBA	116.67	114.67	7.00	24.33	13.00	27.00	12.00	5.78	2.67	136.67	75.76	27.40	28.77
61.	ADT 45	106.33	110.67	8.00	21.67	7.00	25.00	20.71	5.80	2.96	120.00	71.86	30.60	29.38
62.	POONGAR	116.67	116.00	5.33	22.67	7.00	14.00	15.00	7.71	2.98	159.00	88.33	33.00	27.97
63.	AMMAN PONNI	116.67	112.33	8.33	24.00	12.00	33.33	18.50	4.44	2.00	160.00	88.89	18.60	24.79
64.	SITHIRAIKAR	116.67	116.00	7.33	22.33	7.00	26.00	21.86	5.26	3.09	144.00	87.27	27.40	28.92
65.	KARUMKURUVAI	90.00	75.67	8.00	16.67	8.00	16.00	12.38	8.86	3.47	141.33	92.94	23.80	30.08
66.	JCL NEL	90.00	105.00	6.33	18.00	10.00	13.00	15.90	12.56	2.01	119.00	87.50	36.20	27.27
67.	RAKTHASALI	134.00	84.00	7.67	17.67	9.00	12.00	18.00	13.83	2.00	108.00	90.00	15.00	12.42
68.	KALASAR NEL	116.33	113.00	7.33	32.33	8.00	12.00	19.75	13.17	3.65	183.33	95.00	16.80	23.40
69.	KOTTARAMSAMBA	90.00	110.33	7.33	17.33	9.00	14.00	17.11	11.00	2.38	138.00	86.25	28.60	28.93
	Mean	107.22	97.31	6.98	20.78	7.90	18.03	13.62	6.80	2.34	121.15	81.97	21.65	18.18

GM±SE	1.38	2.46	0.32	0.42	0.19	0.97	0.45	0.30	0.08	3.34	1.00	0.65	0.87
Min	90.00	64.83	3.00	14.67	5.00	6.00	6.25	3.16	1.15	70.00	57.89	13.26	5.83
Max	134.00	135.33	17.33	32.33	13.00	38.00	21.86	17.13	3.81	183.33	95.00	36.20	30.08

Note: DTF- Days to 50% flowering, PH- plant height, PT- Number of productive tillers, PL- Panicle length, PB- Number of primary branches, SB- Number of secondary branches, SPB- Seeds per primary branch, SSB- Seeds per secondary branch, PW- Panicle weight, FG- Number of filled grains per panicle, SF- Spikelet fertility, 1000GW- 1000 grain weight, SPY- Single plant yield.

Table S4. Eigenvalues and percent of variation of principal component axes among 69 rice genotypes

Principal components	Eigen values	Percentage of variation	Cumulative percentage
PC1	3.2393	24.92	24.92
PC2	1.9156	14.74	39.65
PC3	1.7210	13.24	52.89
PC4	1.3589	10.45	63.34
PC5	1.0782	8.29	71.64
PC6	0.9075	6.98	78.62
PC7	0.8107	6.24	84.86
PC8	0.6592	5.07	89.93
PC9	0.5245	4.03	93.96
PC10	0.4732	3.64	97.60
PC11	0.1951	1.50	99.10
PC12	0.0682	0.52	99.63
PC13	0.0486	0.37	100.00

Table S5. Distribution of 69 rice genotypes among 6 different clusters based on Mahalanobis D^2 statistics

Clusters	Number of genotypes	Name of genotypes
I	8	CO51, IR50, KRG9, KRG7, KRG10, KRG14, Prathyasa, Milagu samba
II	27	Babtla, Karupukavuni, Chinnar, KRG4, KRG3, KRG11, KRG16, KRG17, KRG1, KRG65, KRG60, KRG64, KRG63, KRG50, KRG22, Karthika, Renjini, Pavithra, Makom, Thanga samba, Kothamali samba, ASO16, CO53, Keerai samba, ADT45, Ammanponni, Sithiraikar
III	20	Superponni43, Gundu, RLR, LLR, KRG13, KRG2, KRG15, KRG6, KRG62, KRG19, KRG20, KRG61, KRG21, KRG29, KRG66, Punchakayama, Thooyamalli, Vallan samba, Kullakar, Poongar
IV	9	KRG12, KRG5, Pisini, Illupaipoo samba, TPS3, Karumkuruvai, JCLNEL, Rakthasali, Kottaram samba
V	3	KRG45, KRG24, KRG30
VI	2	Mysore malli, Kalasarnel

Table S6. Cluster mean values of panicle architecture and yield attributing traits among 69 rice genotypes

Traits	I	II	III	IV	V	VI
PH	91.75	104.41	85.78	94.63	118.56	119.17
PT	10.83	6.12	6.47	7.67	5.44	7.50
PL	19.42	21.05	21.88	17.89	18.33	28.33
PB	7.50	8.30	7.50	7.89	7.33	9.00
SB	16.25	20.35	16.55	14.22	28.67	10.00
SPB	12.85	14.10	12.57	13.18	17.50	16.73
SSB	6.36	6.01	6.55	8.83	5.08	15.15
PW	2.80	2.16	2.26	2.43	2.32	3.33
FG	95.54	120.98	126.03	113.85	140.78	180.67
SF	74.26	81.56	82.68	86.20	80.53	94.34
1000GW	21.49	23.02	19.70	25.12	15.72	16.49
SPY	22.00	17.25	16.33	23.76	11.90	18.42

Note: PH- plant height, PT- Number of productive tillers, PL- Panicle length, PB- Number of primary branches, SB- Number of secondary branches, SPB- Seeds per primary branch, SSB- Seeds per secondary branch, PW- Panicle weight, FG- Number of filled grains per panicle, SF- Spikelet fertility, 1000GW- 1000 grain weight, SPY- Single plant yield.

Table S7. Average inter and intra-cluster values among six clusters based on Mahalanobis D^2 statistics

	C1	C2	C3	C4	C5	C6
C1	**41.47**	51.89	47.99	50.50	58.30	54.77
C2		**38.54**	53.21	57.24	56.19	59.43
C3			**45.89**	50.77	60.51	65.32
C4				**32.41**	50.52	52.83
C5					**33.38**	59.51
C6						**36.75**

Diagonal bolded values are intra-cluster values