

Supplementary Table 1 List of wild rice accessions with their source of collection point and agroclimatic zone

Sl. No.	Genotype	State	Agroclimatic Zone
1	NKSWR 310	Goa	Western Coastal Plains and ghats (WCPG)
2	NKSWR 247	Uttarakhand	Western Himalayan Regions (WHR)
3	NKSWR 245	Uttarakhand	Western Himalayan Regions (WHR)
4	NKSWR 243	Uttarakhand	Western Himalayan Regions (WHR)
5	NKSWR 402	Himachal Pradesh	Western Himalayan Regions (WHR)
6	NKSWR 177	Himachal Pradesh	Western Himalayan Regions (WHR)
7	NKSWR 171	Himachal Pradesh	Western Himalayan Regions (WHR)
8	NKSWR 168	Himachal Pradesh	Western Himalayan Regions (WHR)
9	NKSWR 214	Uttar Pradesh	Mid-Gangetic Plains (MGP)
10	NKSWR 207	Uttar Pradesh	Mid-Gangetic Plains (MGP)
11	NKSWR 190	Uttar Pradesh	Upper Gangetic Plane (UGP)
12	NKSWR 162	Uttar Pradesh	Upper Gangetic Plane (UGP)
13	NKSWR 372	Assam	Eastern Himalayan Region (EHR)
14	NKSWR 453	Andaman and Nicobar	Island Region (IR)
15	NKSWR 457	Andaman and Nicobar	Island Region (IR)
16	NKSWR 223	Bihar	Mid-Gangetic Plains (MGP)
17	NKSWR 117	Bihar	Mid-Gangetic Plains (MGP)
18	NKSWR 158	Bihar	Mid-Gangetic Plains (MGP)
19	NKSWR 136	Bihar	Mid-Gangetic Plains (MGP)
20	NKSWR 110	Bihar	Mid-Gangetic Plains (MGP)
21	NKSWR 119	Bihar	Mid-Gangetic Plains (MGP)
22	NKSWR 126	Bihar	Mid-Gangetic Plains (MGP)

Supplementary Table 2 Morphological variations among 22 wild rice accessions for agronomically important traits

Sl. No.	Plant sample	PH	TN	DTF	PN	SY	BY	PL
1	NKSWR214	126.5	37.7	120	30	32	103.8	23.4
2	NKSWR177	115	28	118	28	8.1	208.4	24.2
3	NKSWR453	86	45.4	101	42.9	86.6	340.5	22.4
4	NKSWR402	75	28.6	102	26	13.9	42.7	17.6
5	NKSWR310	79.5	38.4	99	38.4	61.16	167.4	25
6	NKSWR243	83.75	37	108	36	77.4	217.1	25.1
7	NKSWR190	83	40.4	106	40	105.6	187.3	25.9
8	NKSWR162	92.5	72	103	72	12.05	311.5	25
9	NKSWR223	97.5	35.3	113	32.8	62.8	158.75	25.5
10	NKSWR117	70	82	115	80	67.4	185.8	22
11	NKSWR171	79.5	28	95	27	40	178.5	22.5
12	NKSWR457	117.5	35	129	33	138.5	350.5	30
13	NKSWR372	52.5	57	109	54	180	331.4	26
14	NKSWR136	85	19	118	17.6	40	128.1	26.3
15	NKSWR158	79.5	20	90	18.8	29.5	76.1	22.1
16	NKSWR110	77.5	17	112	15	39.4	94.9	28
17	NKSWR207	80.5	42.6	102	42.6	110.5	188.9	26.1
18	NKSWR119	74.25	62	115	61.3	69.9	236.3	22.3
19	NKSWR168	78.75	26.5	92	25.7	34.5	65.36	21.6
20	NKSWR247	97.5	37.5	78	36.6	70.87	196.7	26.9
21	NKSWR245	70.5	60.7	101	60.4	100.8	263.9	33.1
22	NKSWR126	80	52	104	50	110.8	254.5	27

PH, Plant Height; TN, Tiller Number; DTF, Days to Fifty percent flowering; PN, Panicle Number; SY, Seed Yield per Plant; BY, Biological Yield per plant; PL, Panicle Length.

Supplementary Table 3 Inferred ancestry of individuals among Q1 and Q2 populations based on STRUCTURE analysis

Sl. No.	Germplasm Accessions	Q1	Q2
1	NKSWR214	0.152	0.848
2	NKSWR177	0.047	0.953
3	NKSWR453	0.106	0.894
4	NKSWR402	0.926	0.074
5	NKSWR310	0.506	0.494
6	NKSWR243	0.165	0.835
7	NKSWR190	0.067	0.933
8	NKSWR162	0.067	0.933
9	NKSWR223	0.068	0.932
10	NKSWR117	0.306	0.694
11	NKSWR171	0.349	0.651
12	NKSWR457	0.972	0.028
13	NKSWR372	0.968	0.032
14	NKSWR136	0.939	0.061
15	NKSWR158	0.901	0.099
16	NKSWR110	0.87	0.13
17	NKSWR207	0.174	0.826
18	NKSWR119	0.177	0.823
19	NKSWR168	0.095	0.905
20	NKSWR247	0.161	0.839
21	NKSWR245	0.679	0.321
22	NKSWR126	0.156	0.844

Supplementary Table 4 Analysis of variance for different wild rice accessions with replication in response to traits; Plant height, tiller number, panicle number, days to fifty percent flowering, seed yield per plant, and biological yield

Source of Variation	Degree of freedom	Sum of Squares	Mean Square	F value	Pr(>F)
Wild rice accessions	21	902219	42963	23.4535	3.33E-10***
Replications	1	6671	6671	3.6417	0.07011
Residuals	21	38468	1832		

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

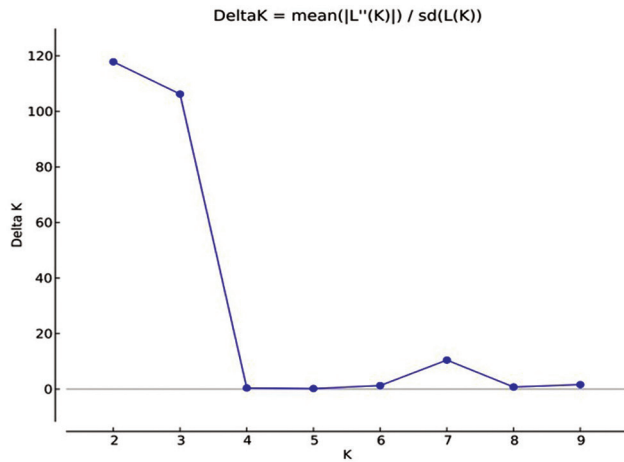
Supplementary Table 5 Trait wise analysis of variance for different wild rice accessions with their mean sum of square (MSS), error, F-calculated and level of significance

Source of Variations	MSS	Error	F-Calculated	Significance
Plant Height (PH)	70.802	6.689	10.585	<0.001
Tiller number (TN)	796.656	33.386	23.862	<0.001
Days to 50% flowering (DTF)	266.194	2.17	122.66	<0.001
Panicle Number (PN)	705.188	20.722	34.032	<0.001
Seed Yield per Plant (SYP)	3,696.60	198.208	18.65	<0.001
Biological Yield (BY)	16,175.02	782.18	20.679	<0.001

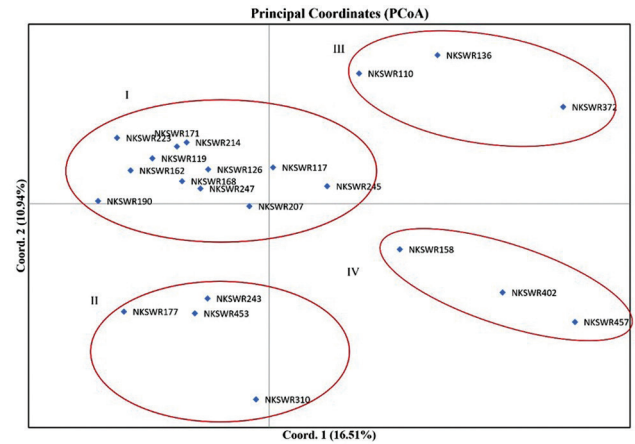
Supplementary Table 6 Principal component analyses table for mentioned phenotypic trait with significant eigen value and variance percentage value

Traits	PC1	PC2	PC3
Plant Height (PH)	0.16982	-0.5651	-0.4022
Tiller Number (TN)	-0.4892	0.25105	-0.3567
Days to fifty percentage flowering (DTF)	-0.1124	-0.5162	-0.4404
Panicle Number (PN)	-0.4918	0.26773	-0.3277
Seed Yield per plant (SY)	-0.4154	-0.1607	0.46588
Biological Yield per plant (BY)	-0.4826	-0.2144	0.01184
Panicle Length (PL)	-0.2682	-0.4558	0.43864
Eigen value	3.04003	1.58831	1.12949
Percentage Variance	43.429	22.6901	16.1355
Cumulative Variance percentage	43.429	66.11913	82.25464

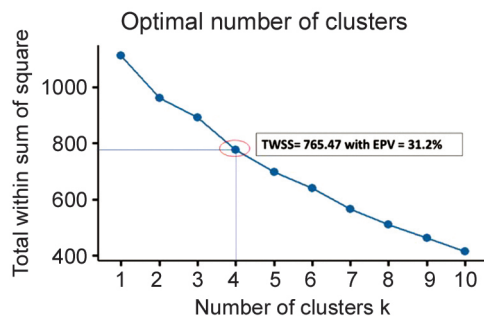
PC, Principal component



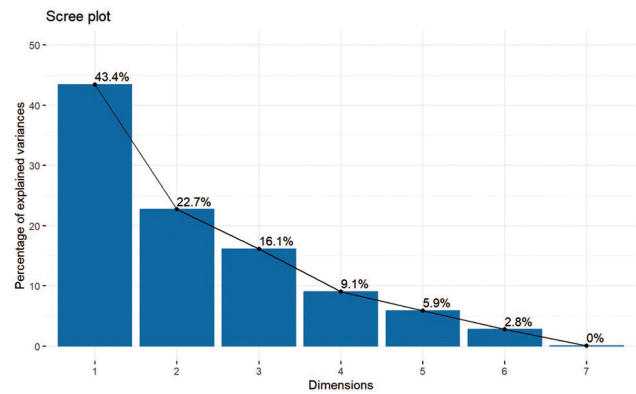
Supplementary Fig. 1 Delta K Plot for the optimum number of population selection based on peak (K=2).



Supplementary Fig. 3 Principal coordinates of wild rice accessions based on ISSR profiling. Group I, II, III and IV.



Supplementary Fig. 2 Identification of optimal number of K-mean cluster, TWSS – total within sum of square and EPV – Explained phenotypic variance.



Supplementary Fig. 4 Scree plot for percentage phenotypic variance explained by first three principal components: PC1 (43.4%), PC2 (22.7%), and PC3 (16.1%) based on phenotypic trait.