

Supplementary Table 1 Details of passport data of 200 ridge gourd germplasm used in the study

S.no	Accession No.	Collection State	S.no	Accession No.	Collection State
1	IC 354856	Karnataka	51	IC 570378	Karnataka
2	IC 92600	Tamil Nadu	52	IC 394721	Assam
3	IC 146492	Uttar Pradesh	53	IC 338527	Uttarakhand
4	IC 354869	Assam	54	IC 344351	Kerala
5	IC 354854	Andhra Pradesh	55	IC 329702	Kerala
6	IC 321215	Himanchal Pradesh	56	IC 363871	Meghalaya
7	IC 345383	Andhra Pradesh	57	IC 427676	West Bengal
8	IC 354864	Jharkhand	58	IC 343156	Jharkhand
9	IC 385913	Jharkhand	59	IC 538150	Uttar Pradesh
10	IC 430121	Rajasthan	60	IC 446607	Telangana
11	IC 354868	Jharkhand	61	IC 281087	Meghalaya
12	IC 430122	Rajasthan	62	IC 284899	Uttar Pradesh
13	IC 354855	Andhra Pradesh	63	IC 385911	Jharkhand
14	IC 439260	Tamil Nadu	64	IC 570374	Karnataka
15	IC 354866	Jharkhand	65	IC 398583	Bihar
16	IC 430132	Rajasthan	66	IC 354858	Uttar Pradesh
17	IC 325864	Rajasthan	67	IC 430135	Rajasthan
18	IC 385912	Jharkhand	68	IC 415696	Maharashtra
19	IC 392544	Uttarakhand	69	IC 354853	Uttar Pradesh
20	IC 410147	Kerala	70	IC 427109	Assam
21	IC 279432	Uttarakhand	71	IC 446605	Telangana
22	IC 385923	Jharkhand	72	IC 297596	Uttar Pradesh
23	IC 521463	Jharkhand	73	IC 284957	Uttar Pradesh
24	IC 272906	Haryana	74	IC 362477	Tamil Nadu
25	IC 265027	Uttarakhand	75	IC 410585	Tripura
26	IC 538160	Tamil Nadu	76	IC 417715	Jharkhand
27	IC 255456	Uttarakhand	77	IC 373141	Odisha
28	IC 430125	Rajasthan	78	IC 538118	Uttar Pradesh
29	IC 257127	Odisha	79	IC 345266	Andhra Pradesh
30	IC 360759	Assam	80	IC 345665	Uttarakhand
31	IC 360802	Assam	81	IC 398555	Bihar
32	IC 264830	Uttarakhand	82	IC 353319	Bihar
33	IC 392534	Uttarakhand	83	IC 298723	Assam
34	IC 266792	Uttar Pradesh	84	DSAT 102	
35	IC 541207	Tamil Nadu	85	IC 438825	Bihar
36	IC 276417	Madhya Pradesh	86	IC 340430	Chattisgarh
37	IC 264964	Uttar Pradesh	87	IC 281118	Meghalaya
38	IC 352782	Assam	88	IC 385914	Jharkhand
39	IC 548584	Uttar Pradesh	89	IC 345282	Andhra Pradesh
40	IC 604590	Uttarakhand	90	IC 417716	Jharkhand
41	IC 265661	Kerala	91	IC 550669	Maharashtra
42	IC 606152	Unknown	92	IC 265026	Uttar Pradesh
43	IC 262202	Uttarakhand	93	IC 352808	Assam
44	IC 570341	Andhra Pradesh	94	IC 382686	Uttarakhand
45	IC 336981	Gujrat	95	IC 345755	Assam
46	IC 259616	Andhra Pradesh	96	IC 347971	Jharkhand
47	IC 257585	Odisha	97	IC 347970	Jharkhand
48	IC 345216	Andhra Pradesh	98	IC 259880	Odisha
49	IC 335918	Karnataka	99	IC 383237	Rajasthan
50	IC 550664	Maharashtra	100	IC 259890	Odisha

Supplementary Table 1 (Concluded)

S.no	Accession No.	Collection State	S.no	Accession No.	Collection State
101	IC 370352	Others	151	IC 383123	Chattisgarh
102	IC 329720	Telangana	152	IC 394720	Assam
103	IC 259825	Odisha	153	IC 427584	Karnataka
104	IC 344007	Andhra Pradesh	154	IC 311134	Meghalaya
105	IC 316014	Arunachal Pradesh	155	IC 427675	West Bengal
106	IC 350310	Andhra Pradesh	156	IC 325952	Gujrat
107	IC 316010	Arunachal Pradesh	157	IC 383931	Andhra Pradesh
108	IC 398554	Bihar	158	IC 259496	Jharkhand
109	IC 398552	Bihar	159	IC 394366	Assam
110	IC 398556	Bihar	160	IC 354353	Gujrat
111	IC 398562	Bihar	161	IC 336827	Madhya Pradesh
112	IC 432129	Maharashtra	162	IC 345259	Andhra Pradesh
113	IC 258003	Andhra Pradesh	163	IC 415715	Maharashtra
114	IC 256432	Andhra Pradesh	164	IC 392183	Andhra Pradesh
115	IC 348001	Jharkhand	165	IC 339166	Uttar Pradesh
116	IC 265650	Kerala			
117	IC 409037	Tamil Nadu	166	IC 335909	Karnataka
118	IC 345279	Andhra Pradesh	167	IC 344625	Gujrat
119	IC 345306	Andhra Pradesh	168	IC 355974	Uttarakhand
120	IC 276304	Uttar Pradesh	169	IC 392538	Uttarakhand
121	IC 343032	Jharkhand	170	IC 392531	Uttarakhand
122	IC 570367	Karnataka	171	IC 333171	Madhya Pradesh
123	IC 331953	Uttar Pradesh	172	IC 373325	Karnataka
124	IC 570368	Karnataka	173	IC 339224	Rajasthan
125	IC 350321	Andhra Pradesh	174	IC 354848	Jharkhand
126	IC 343155	Jharkhand	175	IC 354847	Andhra Pradesh
127	IC 262188	Uttarakhand	176	IC 092689	Unknown
128	IC 344008	Andhra Pradesh	177	IC 392230	Jharkhand
129	IC 526951	Andhra Pradesh	178	IC 398580	Bihar
130	IC 208625	Andhra Pradesh	179	IC 541254	Tamil Nadu
131	IC 344353	Kerala	180	IC 354863	Jharkhand
132	IC 426986	Tamil Nadu	181	IC 092671	Unknown
133	IC 325953	Gujrat	182	IC 092637	Odisha
134	IC 255450	Uttarakhand	183	IC 354860	Unknown
135	IC 343447	Kerala	184	IC 363885	Meghalaya
136	IC 264794	Uttarakhand	185	IC 353321	Bihar
137	IC 255424	Uttarakhand	186	IC 430116	Rajasthan
138	IC 262231	Uttarakhand	187	IC 430117	Rajasthan
139	IC 385601	Tamil Nadu	188	IC 570385	Karnataka
140	IC 262213	Uttarakhand	189	IC 570420	Andhra Pradesh
141	IC 549856	Maharashtra	190	IC 570434	Andhra Pradesh
142	IC 373361	Karnataka	191	IC 570432	Andhra Pradesh
143	IC 545258	Assam	192	IC 345388	Andhra Pradesh
144	IC 539714	Jammu and Kashmir	193	IC 394713	Assam
145	IC 419993	Gujrat	194	IC 430128	Rajasthan
146	IC 326768	Madhya Pradesh	195	IC 279548	Uttarakhand
147	IC 383210	Chattisgarh	196	IC 393305	Uttarakhand
148	IC 339212	Rajasthan	197	IC 410656	Tripura
149	IC 383133	Chattisgarh	198	IC 430133	Tamil Nadu
150	IC 433706	Uttar Pradesh	199	IC 354861	Tamil Nadu
			200	IC 354862	Tamil Nadu

Supplementary Table 2 Variable sets and fourteen observed ridge gourd qualitative trait, codes, measurement units, and measurement procedures

Variable set	Trait/character	Code	Measurement unit and measurement/sampling procedure
Germination stage	Early plant vigour	EPV	3, Poor; 5, Good; 7, Very Good; 99, Others
Vegetative stage	Plant growth habit	PGH	3, Short viny; 5, Medium viny; 7, Long viny; 99, Others
	Leaf shape	LS	1, Cordate; 2, Oblong; 3, Ovate; 4, Obovate; 5, Orbicular, 99, Others
	Leaf margin	LM	1, Entire; 2, Serrate; 3, Multifidi; 99, Others
	Stem Pubescence	SP	1, Smooth; 2, Pubescent; 99, Others
	Stem Shape	SS	1, Rounded; 2, Angular; 99, Others
	Tendrill presence	T	0, Absent; 1, Present
	Tendrill type	TT	0, Coiled; 1, Straight,
	Tendrill branching	TB	1, Unbranched; 2, Branched; 99, Others
Flowering stage	Sex type	ST	1, Monoecious; 2, Gyno-monoecious; 3, Andro-monoecious; 4, Andro-gyno-monoecious, 5, Hermaphrodite; 6, Androecious; 99, Others
Fruiting and maturity stage	Fruit shape	FS	1, Cylindrical; 2, Club shaped; 3, Spindle shape, 4, Elliptical; 5, Globular; 6, Elongate; 7, Heart shape; 99, Others
	Ridge shape	RS	1, Superficial; 2, Rounded; 3, Intermediate; 4, Deep Grooved; 5, Narrowly Winged; 6, Deeply Winged; 99, Others
	Continuity of ridge	RC	1, Continuous; 2, Discrete; 99, Others
	Number of ridges/fruit	RN	In number