SHORT COMMUNICATION

Studies in Brinjal Genotypes: Part I–Qualitative Characterization for Northern Karnataka

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An experiment was conducted to characterise the plant type traits of 90 brinjal genotypes in Dharwad, Karnataka. The characterization was done with reference to fourteen vegetative, flower and fruit traits. All genotypes were grouped into round, long, oblong and teardrop depending upon the shape; and depending upon stripeness on the fruit surface genotypes divided into striped and non-striped cultivars. Amongst the non-striped accessions, purple black fruited genotypes were dominant in number followed by purple, light green and pale purple

Key words: Brinjal, Characterization, Northern Karnataka, Qualitative

In brinjal, rigid preferences for colour of the fruit, shape of the fruit, size of the fruit, spinyness, suitability for the preparation of specific culinary preparations (stuffed, sliced, bartha etc.) are prevalent in Northern Karnataka. Hence, in brinjal improvement programme, these local preferences should be taken care of. Thus, an experiment was carried out to help breeders to select an appropriate genotype for crop improvement based on the knowledge of genetics of various characters.

Ninety brinjal genotypes from germplasm maintained at Department of Horticulture, UAS, Dharwad were evaluated during 2000-2001 in a randomized block design with two replications in vegetable sections of Golden Jubilee Block, Kumbapur Farm, Dharwad. The visual observations for 14 characters were recorded on three plants selected randomly and shown in Table 1.

Of all the 90 brinjal genotypes, round fruited genotypes were dominant in number (36.7%), followed by long (33.4%), oblong (26.7%) and teardrop (2.2%). Based on colour of the fruit surface, non-striped genotypes were grouped into purple black (36.7%), purple (16.7%), light green (6.7%) and pale purple (4.4%). Among striped genotypes, 71.4% fruits had green background and 8.9% had white background. Purple striped fruits with white/ green blackground and round/oblong/teardrop shaped fruits are highly suitable for stuffed brinjal and bhaji

Table 1. Qualitative characterization if ninety brinial genotypes for fourteen traits

S. No	Genotypes	Cotyledon Colour	Hypocotyle colour	Plant growth	Leaf blade Lobing	Leaf blade angle	Midrib colour	Lamina colour	Petiole colour	Spinyness				Flower colour	Fruit colour at markable stage	Fruit colour distribution at marketable stage	Fruit colour at physiological maturity	Fruit shape
										Stem	Leaf	Flower	Fruitz					
1	DBC-1-TR	DG	LG	I	W	A	V	LG	V	NS	NS	S	S	LV	LG	U	CY	OB
2	DBC-2-KA	G	LG	U	I	I	GV	G	GV	NS	NS	S	S	LV	G	S	SBY	R
3	DBC-7-MP	DG	DG	U	S	A	V	G	G	NS	NS	NS	NS	BV	PB	U	BY	R
4	DBC-8-KA	DG	LG	U	I	A	V	G	G	S	S	S	S	PV	P	S	YS	R
5	DBC-9-KA	DG	LG	U	VW	I	G	G	GV	NS	NS	NS	NS	PV	G	U	BY	R
6	DBC-10-BI	DG	LG	U	VW	A	V	DG	G	NS	NS	NS	NS	LV	P	M	BY	R
7	DBC-11-BI	DG	LG	P	I	A	G	G	G	NS	NS	NS	NS	BV	LG	U	CY	L
8	DBC-12-BI	G	LG	U	I	A	GV	DG	G	NS	NS	NS	NS	BV	PB	U	Y	OB
9	DBC-13-BI	G	LG	P	I	A	GV	LG	GV	NS	NS	NS	NS	BV	LG	U	CY	L
10	DBC-14-KA	GV	LG	U	S	A	G	G	GV	S	S	S	S	LV	PB	U	BY	OB
11	DBC-15-AP	DG	LG	I	I	A	V	G	G	NS	NS	NS	NS	LV	PB	U	BY	OB
12	DBC-16-AP	YG	YG	I	I	A	G	DG	GV	NS	NS	NS	NS	BV	PB	U	BY	OB
13	DBC-17-AP	YG	YG	I	VW	A	V	G	G	NS	NS	NS	NS	PV	G	S	CY	R
14	DBC-18-AP	DG	LG	U	VW	A	G	DG	GV	NS	NS	NS	NS	V	P	U	CY	L
15	DBC-19-KA	DG	LG	U	S	I	G	G	G	NS	NS	NS	NS	LV	G	S	CY	R
16	DBC-20-KA	DG	LG	U	S	I	G	G	G	S	S	S	S	LV	G	S	CY	R
17	DBC-21-PU	DG	DG	P	S	A	V	LG	GV	NS	NS	NS	NS	W	P	U	Y	OB

S. No	Genotypes	Cotyledon Colour	Hypocotyle colour	Plant growth	Leaf blade Lobing	Leaf blade angle	Midrib colour	Lamina colour	Petiole colour	Spinyness				Flower colour	Fruit colour at markable stage	Fruit colour distribution at marketable stage	Fruit colour at physiological maturity	Fruit shape
										Stem	Leaf	Flower	Fruitz					
18	DBC-22-PU	DG	LG	U	W	A	GV	G	GV	NS	NS	NS	NS	V	P	U	BY	L
19	DBC-23-KA	YG	YG	I	S	I	G	G	G	S	S	S	S	V	G	S	SBY	R
20	DBC-25-KA	DG	LG	U	I	I	G	DG	G	S	S	S	S	V	G	S	CY	R
21	DBC-26-KA	DG	DG	U	I	A	GV	G	G	NS	NS	NS	NS	LV	P	U	BY	R
22	DBC-27-KA	DG	LG	U	S	A	G	G	G	NS	NS	NS	NS	PV	P	M	BY	OB
23	DBC-29-TA	DG	LG	U	S	O	V	DG	GV	NS	NS	NS	NS	V	PP	U	CY	OB
24	DBC-30-TA	DG	JG	U	I	I	V	DG	GV	NS	NS	NS	NS	V	PP	U	CY	OR
25	DBC-31-HA	YG	YG	I	I	A	V	DG	GV	NS	NS	NS	NS	LV	PB	U	BY	TD
26	DBC-33-HA	DG	LG	I	VW	A	V	DG	GV	NS	NS	NS	NS	BV	P	U	BY	OB
27	DBC-34-HA	DG	DG	U	W	A	V	G	G	NS	NS	NS	NS	BV	P	U	BY	L
28	DBC-35-HA	YG	YG	I	VW	A	V	GV	V	NS	NS	NS	NS	BV	PB	U	BY	TD
29	DBC-36-HA	DG	DG	I	Q	I	V	DG	GV	NS	NS	NS	NS	BV	DB	U	BY	L
30	DBC-37.HA	DG	DG	U	S	A	V	DG	V	NS	NS	NS	NS	LV	LG	U	CY	L3
31	DBC-38-HA	DG	DG	U	I	A	V	DG	V	NS	NS	NS	NS	BV	PB	U	BY	R
32	DBC-39-HA	YG	VG	P	VW	I	V	G	GV	S	S	S	S	BV	PB	U	Y	L
33	DBC-40-HA	YG	VG	I	W	A	V	DG	V	NS	NS	NS	NS	BV	PB	U	BY	L
34	DBC-42-HA	DG	VG	P	VW	A	V	DG	GV	NS	NS	NS	NS	BV	PB	U	BY	OB
35	DBC-43-HA	DG	DG	P	VW	A	V	DG	GV	NS	NS	NS	NS	BV	P	U	BY	L
36	DBC-44-HA	DG	LG	P	I	A	V	G	V	NS	NS	NS	NS	PV	P	U	U	L
37	DBC-46-HA	DG	LG	I	S	A	V	GG	GV	NS	NS	NS	NS	PV	P	U	BY	L
38	DBC-47-HA	YG	LG	U	I	A	G	DG	V	NS	NS	NS	NS	PV	P	V	BY	OB
39	DBC-49-HA	DG	DG	P	I	A	V	LG	V	NS	NS	NS	NS	BV	PB	U	BY	L
40	DBC-50-HA	DG	DG	I	W	A	V	DG	GV	S	NS	S	S	LV	PB	U	U	L
41	DBC-53-HA	DG	G	U	I	A	G	G	G	NS	NS	NS	NS	W	LG	U	CY	L
42	DBC-54-HA	DG	G	U	I	A	V	LG	V	NS	NS	NS	NS	V	P	U	BY	L
43	DBC-56-HA	DG	G	U	S	A	V	DG	V	NS	NS	NS	NS	V	P	U	U	L
44	DBC-58-HA	DG	G	U	I	A	V	LG	G	NS	NS	NS	NS	V	PB	U	BY	L
45	DBC-65-HA	DG	G	P	I	A	V	DG	V	NS	NS	NS	NS	BV	U	BY	L	
46	DBC-66-HA	DG	G	U	VW	A	V	DG	V	NS	NS	NS	NS	BV	PB	U	BY	L
47	DBC-68-KA	G	G	U	S	A	V	G	G	NS	NS	NS	NS	PV	G	S	CY	R
48	DBC-75-KA	DG	G	U	I	I	G	G	G	S	S	S	S	PV	G	N	CY	R
49	DBC-76-KA	G	G	U	S	I	G	DG	G	NS	S	NS	NS	PV	G	S	Y	R
50	DBC-77-KA	G	G	U	S	O	V	DG	V	NS	NS	NS	NS	LV	G	N	CY	L
51	DBC-79-KA	DG	G	U	I	I	G	GD	G	S	S	S	S	BV	PB	U	BY	R
52	DBC-80-KA	YG	LG	U	I	A	V	G	V	NS	NS	NS	S	PV	G	S	CY	R
53	DBC-81-BI	DG	LG	U	I	A	V	G	GV	NS	NS	NS	NS	LV	P	U	BY	R
54	DBC-82-TA	DG	DG	P	W	A	V	G	V	NS	NS	NS	NS	LV	PB	U	BY	R
55	DBC-83-AP	LG	LG	U	I	A	V	DG	V	NS	NS	NS	NS	LV	G	S	CY	OB
56	DBC-84-KA	YG	LG	U	S	A	G	G	G	S	S	S	S	PV	G	S	CY	R
57	DBC-85-KA	YG	YG	I	I	A	V	G	G	NS	NS	NS	NS	LV	G	S	CY	R
58	DBC-88-KE	DG	LG	U	S	A	V	DG	G	NS	NS	NS	S	LV	PB	U	BY	OB
59	DBC-89-ND	DG	G	I	W	A	V	DG	G	NS	NS	NS	NS	BV	PB	U	BY	L
60	DBC-91-ND	LG	LG	U	W	A	V	DG	G	NS	NS	NS	NS	LV	PB	U	BY	L
61	DBC-94-KE	G	G	U	I	A	V	DG	G	NS	NS	NS	NS	LV	LG	U	CY	L
62	DBC-95.KA	DG	G	U	S	A	V	V	G	NS	NS	NS	NS	BV	U	BY	L	
63	DBC-96-KA	DG	LG	U	W	I	V	V	G	NS	NS	NS	NS	PV	G	S	CY	R
64	DBC-97.TA	YG	LG	U	I	A	V	G	G	NS	NS	NS	NS	LV	G	S	CY	OB
65	DBC-98-TA	LG	LG	U	W	A	V	G	G	NS	NS	NS	NS	LV	P	S	Y	OB
66	DBC-99-KA	YG	LG	U	W	A	V	G	G	NS	NS	NS	NS	LV	P	S	CY	OB
67	DBC-100-KA	G	G	U	W	A	V	G	G	S	S	S	S	LV	P	S	CY	OB
68	DBC-101-KA	YG	LG	U	W	A	V	G	G	NS	NS	NS	NS	LV	P	S	YS	OB
69	DBC-102-KA	LG	LG	U	W	A	V	G	G	S	S	S	LV	G	S	CY	R	
70	DBC-103-KA	YG	LG	U	S	A	V	G	G	NS	NS	NS	NS	PV	G	S	CY	R
71	DBC-104-MH	G	G	U	S	A	V	G	G	NS	NS	NS	NS	V	PB	U	BY.	R
72	DBC-105-MH	YG	YG	I	W	A	V	G	G	S	S	S	S	V	G	S	Y	R
73	DBC-106-MH	G	LG	U	I	A	G	G	G	S	S	S	S	LV	P	S	BY	OB
74	DBC-107-KA	YG	LG	I	I	A	V	G	G	NS	NS	NS	NS	V	GS	Y	R	
75	DBC-108-KA	G	G	U	I	A	V	V	GV	NS	NS	NS	NS	LV	PV	U	BY	OB
76	DBC-109-TR	LG	LG	U	I	A	V	V	GV	NS	NS	NS	NS	LV	PP	U	BY	OB
77	DBC-11-KA	LG	LG	U	S	A	V	G	G	NS	NS	NS	NS	LV	PB	U	BY	OB
78	DBC-112-GO	YG	LG	U	S	A	V	G	G	NS	NS	NS	NS	PV	PB	U	BY	R
79	DBC-113-GO	YG	LG	U	S	A	V	G	G	NS	NS	NS	NS	PV	P	U	Y	R
80	DBC-114-GO	YG	LG	U	S	A	V	G	G	NS	NS	NS	NS	PV	P	U	BY	R
81	DBC-115-KA	DG	LG	U	I	A	G	G	G	NS	NS	NS	NS	PV	P	S	YS	R
82	DBC-116-UP	YG	LG	U	I	I	V	LG	V	NS	NS	NS	NS	LV	PB	U	BY	L
83	DBC-117-UP	YG	LG	U	I	A	V	LG	GV	NS	NS	NS	NS	LV	PB	U	BY	L
84	DBC-118-KA	DG	DG	U	I	A	G	DG	G	NS	NS	NS	NS	BV	P	S	Y	R
85	DBC-119-KA	G	G	U	S	A	G	G	G	NS	NS	NS	NS	LV	G	S	CY	R
86	DBC-120-KA	LG	LG	U	S	A	GV	DG	G	NS	NS	NS	NS	LV	P	U	BY	R
87	DBC-121-KA	DG	LG	U	S	A	V	DG	V	NS	NS	NS	NS	LV	PB	U	BY	L
88	DBC-122-KA	DG	LG	U	S	A	V	DG	V	NS	NS	NS	NS	BV	PB	U	BY	
89	DBC-123-KA	DG	G	U	S	A	V	DG	V	NS	NS	NS	NS	LV	PB	U	BY	L
90	DBC-124-KA	DG	G	U	S	A	G	DG	G	NS	NS	NS	NS	BV	PB	U	BY	L

1. Cotyledon colour : G: Green, LG : Light Green, DG : Dark Green: YG :Yellowish Green, GV: Greenish Violet
2. Hypocoty Colour : G : Green, LG : Light Green, DG : Dark Green, YG : Yellowish Green, GV: Greenish Violet
3. Plant growth : U : Upright, I : Intermediate, P : Prostrate
4. Leaf blade lobing : S Simple, W : Weak, VW : Very Weak, I : Intermediate
5. Leaf blade angle : A: Acute, I : Intermediate, O : Obtuce
6. Mid rib colour : G : Green, GV : Greenish Violet, V : Violet
7. Lamina colour : G. Green, LG : Light Green, DG : Dark Green
8. Petiole colour : G : Green, GV : Greenish Violet, V : Violet
9. Spinyness : S: Spiny, NS : Non spiny
10. Flower colour : LV : Light Violet, PV : Pale Piolet, BV : Bluish Violet
11. Fruit colour at marketable stage : LG : Light Green, G : Green, P : Purple, PB : Purple Black, PP : Pale Purple
12. Fruit colour distribution at marketable stage : U : Uniform S : Striped, N : Netted, M : Mottled
13. Fruit colour at physiological maturity : BY : Brownish Yellow, Y : Yellow, CY : Complete Yellow, YS : Yellow Striped, SBY : Striped Brownish Yellow
14. Fruit shape, R : Round, OB : Oblong, L : Long, TD : Tear Drop

preparation in Northern Karnataka region. The green fruits with creamy patches at stylar end are preferred along the West Coast (Udipi, Karwar etc.) and also interior Northern Karnataka (Kudchi, Bijapur etc.) For this DBC-75-KA is a promising genotype with high yielding potential.

Seventy genotypes were non-spiny and rest (20) were spiny. Violet midrib colour was observed in 63 genotypes followed by green (21) and greenish violet (6). Green coloured lamina was observed in 43 genotypes followed by dark green (35), light green (8) and violet (4). Colour of the petiole was green in 38 genotypes, greenish violet in 22 and violet in 20 genotypes. NBPGR (1995) have also characterized the 1181 brinjal genotypes. PDVR (1995-96) characterized 165 genotypes of brinjal and Singh *et al.*, (1999) characterized 325 accessions.

References

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