

Short Communications

Note on Two Improved Varieties of Minor Millets Released by Gujarat Agricultural University

K. B. Desai, M. R. Patel and P. S. Vashi

Gujarat Agricultural University,
Navsari Campus, Navsari.

Finger millet (*Eleusine coracana* Gaertn) and Kodra (*Paspalum scrobiculatum* Linn) are grown as *kharif* rainfed crops in the less fertile hilly soils by tribal people and are highly adapted to hilly tracts of Dangs district and adjoining areas of South Gujarat. Finger millet's flour is the main food of tribal people which is used in making unleavened bread. In Gujarat minor millets are grown on about two lakh hectares of land.

Research stations for these crops have been established at Waghai and Dohad. Gopani (1972) reported that strain B-11 of Nagli and IPS-19 of Kodra were promising at Waghai.

Wide variability existed in the local material and therefore pure line selection was adopted to isolate lines better than locals. Selection pressure was applied for yield, disease resistance, drought tolerance and brown grain colour, for a period of four years. The comparison of important characters of improved varieties of minor millets as compared to their respective locals is presented in Table 1.

Both of these varieties "Gujarat Nagli-1" and "Gujarat Kodra-1" were

TABLE 1
Comparison of important characters of improved varieties of minor millets as compared to their respective locals.

Sr. No.	Description	Gujarat Nagli-1	Local Nagli B-11	Gujarat Kodra-1	Local Kodra
1.	Plant height (cm)	95	110	94	108
2.	Average tillers per plant	3.0	2.0	15.6	11.1
3.	Days to 50% flowering	90	100	68	76
4.	Days to 100% flowering	95	107	72	80
5.	Days to maturity	130	136	108	116
6.	Ear characters:				
(a)	Average length of main ear (cm)	9	13	13.3	15.4
(b)	Average number of fingers/spiklets per ear	9.2	7.3	3.37	3.92
(c)	Average weight of main ear (gm)	8.3	7.5	1.90	1.78
(d)	Shape of ear	Compact	Open	—	—
7.	Grain characters:				
(a)	Average grain weight of main ear (gm)	5.8	3.6	1.00	0.90
(b)	Weight of 1000 seeds (gm)	2.4	2.4	5.4	5.8
(c)	Colour	Red brown	Red brown	Brown	Brown



Fig. 1. Gujarat Nagli-1

tested under the name of "Nagli-3-8" (Table 2) and "Kodra IPS-19" (Table 3) respectively at Waghai with traditional local varieties.

Gujarat Nagli-1:

It is a pure line selection from local strain. It has very good adaptability in the hilly tracts of Dangs and Valsad districts. Plant stature is semidwarf with yellowish white stem. Plant is attractive with flattened stem exposing very little of the internodes (Fig. 1). It has an incurved earhead with bold size red grains. The average plant height is 90 to 95 cms. It matures earlier than the local variety B-11 by a period of one week. It is fully resistant to drought and frost and is practically free from insect and pathogens. It is non-shattering.

Gujarat Nagli-1(3-8) gave on an average 10.6 per cent higher yield than the local B-11, over four years data. Gujarat Nagli-1 was therefore released in 1976 for kharif cultivation in the hilly area of south Gujarat and for other areas of similar climate.

Gujarat Kodra-1:

It is an early selection made from the original IPS-19 tested in the All India Coordinated trial conducted at Waghai during 1972-73. It is recommended for kharif planting in the hilly tracts of south Gujarat, where Kodra crop is usually grown in area of about 8000 hectares. The plant height is medium tall. The stem is glabrous and nodes are swollen (Fig. 2). The leaves are

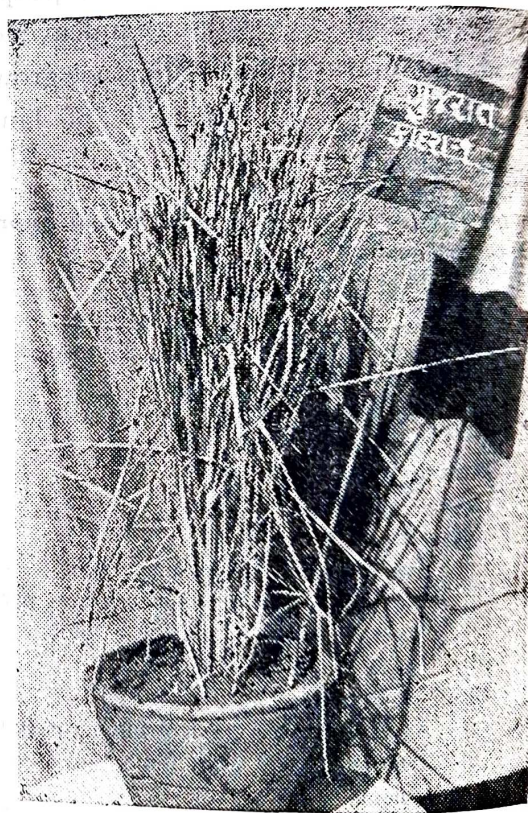


Fig. 2. Gujarat Kodra-1

TABLE 2

Comparative performance of different Nagli varieties from 1971-72 to 1974-75.

No.	Variety	Grain yield (kg/ha)				Average
		71-72	72-73	73-74	74-75	
1.	3-8 (GN1)					
2.	8-9	2536	2289	2010	2598	2358
3.	10-5	2568	1965	1969	2446	2287
4.	22-2	2161	1737	2107	2393	2100
5.	38-1	2190	2009	2342	2571	2278
6.	82-4	2003	2087	2156	2401	2162
7.	IE-267	2140	2332	1842	2407	2180
8.	IE-774	1429	1504	1851	2555	1810
9.	IE-901	1598	1896	1739	2208	1860
10.	B-11 (W)	2124	1925	1489	2376	1976
	Local	2059	2067	2205	2193	2131
	SE (m)	166.6	133.5	155.2	108.3	
	CD (.05)	483.2	387.2	450.3	NS	

TABLE 3

Comparative performance of Kodra varieties from 1972-73 to 1975-76.

No.	Variety	Grain yield (kg/ha)				Average
		72-73	73-74	74-75	75-76	
1.	IPS-19 (GK1)					
2.	IPS-141	2086	1089	3779	2021	2243
3.	IPS-158	2325	753	2849	1925	1963
4.	IPS-192	2188	834	684	1829	1383
5.	IPS-379	737	987	2601	1411	1434
6.	IPS-394	2564	1889	2245	1639	1884
7.	IPS-606	1689	1231	1036	1715	1418
8.	AL-5	2432	1038	2433	1852	1938
9.	S-5	—	—	—	1863	1863
10.	Local	—	—	—	1641	1641
		249	2079	2785	1937	1762
	SE (m)	129.4	166.6	170.7	159.9	
	CD (.05)	380.4	485.8	502.2	NS	

green and narrow with a dark stinge near the leaf joint. Panicle is long as compared to local. The grain size is bold with brown colour. It is non-shattering and resistant to drought, frost and free from known diseases and pests.

Kodra IPS-19 yielded 27 per cent higher than the control (Table 3). Based upon four years performance, Kodra IPS-19 was released by the Gujarat Agricultural University in the year 1977 under the name "Gujarat Kodra-1"

for general cultivation in the areas of Dangs and Valsad districts.

ACKNOWLEDGEMENT

The authors acknowledge the help of Dr. G. J. Patel, convener, Plant Breeding Sub-committee of the Research Council of the Gujarat Agricultural University for providing guide lines in this work.

REFERENCES

- Gopani, D. D. 1972. Review of research work in spices and hill millets. *Nausari Agril. Coll. Mag.* 6 (1): 72.