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Short Communication

EVALUATION OF SUGARCANE CLONES UNDER COASTAL CONDITIONS OF ANDHRA PRADESH

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Two varieties, Co 6907 (early) and Co 7219 (mid-late) occupy major area under sugarcane in Andhra Pradesh, particularly the coastal region. Co 6907 is a non-flowering type under natural conditions and hence cannot be utilised in hybridisation programmes, thus limiting the number of local varieties available for crossing. To identify some promising early and mid-late types for future use in crossing programmes, 50 canes mostly 1983 'Co' series alongwith three standards, namely, Co 6304, Co 7219 and Co 6907 were evaluated in a randomised block design with two replications. The clones were planted in two row plots of 6m length spaced 80cm apart. Twenty five three-budded setts were planted at equal distance in each row. At 10 month crop stage, sample juice analysis was carried out to identify the elite clones in comparison with the early standard Co 6907. The trial was harvested at 12 month crop stage and data on various cane yield and juice quality parameters were recorded.

The analysis of variance showed significant differences among genotypes for all the traits, except purity percentage, indicating the potentiality of the material for isolating parents which may produce better progenies. The maximum genetic variance was observed for the number of millable canes (NMC) followed by the cane yield and the cane length. The observed high variability amongst the clones could be due to different genetic constitution of the genotypes in respect to these characters. In general, variance for quality traits was low.

Between the mid-late standards, Co 6304 was the better variety for sugar yield per plot (16.91 kg) at 12 months; Co 8345, Co 8349, Co 8350, Co 8356 and Co 8369 were significantly superior to it. In comparison with the local mid-late check, Co 7219, Co 7606, Co 7643, Co 7901, Co 8344, Co 8345, Co 8346, Co 8349, Co 8350, Co 8356, Co 8361, Co 8363, Co 8364, Co 8366, Co 8367, Co 8369, Co 85035, Co 85036 and Co 85044 yielded significantly higher sugar yield per plot. The performance of Co 8014, Co 8343, Co 8347, Co 8351, Co 8352, Co 8357, Co 8359, Co 8365, Co 85041 and Co 86047 was similar to the standard variety Co 7219. Further, Co 8347 and Co 8351 for germination per cent; Co 7643, Co 7901, Co 8345, Co 8346 and Co 85033 for NMC; Co 8365 and Co 8366 for cane length; Co 8365 and Co 8369 for single cane weight and Co 8345 for cane yield were significantly superior to the respective best standards.

The early variety Co 6907 was included to compare the sucrose percentage in juice and to identify promising clones which accumulated sucrose at par with this

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Table 1. Mean performance of promising flowering clones under coastal conditions of Andhra Pradesh

Genotype	Germination %	NMC	Cane diameter (cm)	Cane length (cm)	Single cane weight (kg)	Sucrose (%) 10th month	Sucrose (%) 12th month	Purity (%)	CCS (%)	Cane yield (kg)	CCS/ plot (kg)	Flowering time	Pollen fertility (%)
Co 7643	49.67	151*	2.20	261	0.80	18.16	19.16	87.75	13.37	120.75	16.16	IV,OCT	87.4
Co 7901	52.67	189*	2.10	233	0.58	16.18	20.22	90.22	14.12	109.40	15.47	III, Nov	45.0
Co 7907	60.99	141	2.30	264	0.82	17.59	18.39	87.91	12.68	115.25	14.63	I,Nov	45.0
Co 8021	64.34	133	2.20	282	0.88	19.07	19.99	87.99	13.77	117.15	16.10	IV,Nov	25.0
Co 8342	61.34	145	2.70	286	1.16	19.34	19.36	91.48	13.61	116.20	22.53*	I,DEC	65.0
Co 8345	64.67	164*	2.55	269	0.98	15.80	19.05	89.57	13.41	160.50*	21.52*	III, Nov	81.0
Co 8346	61.33	147*	2.55	281	0.94	17.12	18.72	89.30	13.01	137.70	17.92	IV,Nov	5.0
Co 8347	82.00*	132	2.50	254	0.96	17.29	17.16	88.84	11.90	126.60	15.05	I, Nov	51.0
Co 8351	80.00*	99	2.90	245	1.08	17.47	19.89	86.82	13.64	106.90	14.58	III,NOV	16.0
Co 8357	46.34	87	2.75	278	1.16	17.24	19.57	88.92	13.57	100.55	13.66	II,NOV	0.0
Co 8361	43.99	126	2.50	283	1.06	15.70	20.27	90.64	13.69	133.50	18.28	IV,Nov	44.0
Co 8365	28.00	63	3.05	324*	1.50*	15.78	20.24	87.73	13.84	92.80	12.84	II,Nov	66.0
Co 8366	49.34	115	2.60	318*	1.26	17.23	20.07	89.21	13.53	143.30	19.37	II,Nov	0.0
Co 8368	29.67	102	2.65	290	1.14	19.86	20.50	90.27	14.36	114.55	16.42	IV,Nov	11.0
Co 8369	38.67	103	3.00	299	1.46*	16.90	19.04	87.71	13.49	148.90	20.08*	IV,Nov	7.0
Co 85033	45.34	168*	2.20	227	0.82	19.08	20.04	89.49	13.95	137.85	19.17	III,Nov	7.0
Co 85041	44.67	114	2.30	270	0.84	17.98	18.96	86.93	13.01	95.80	12.46	I,Nov	0.0
Co 86047	42.00	98	3.00	287	0.96	18.96	20.01	89.29	13.91	94.10	13.09	II,Nov	33.0
Standards													
Co 6304 (ML)	41.00	126	2.95	1.04	18.84	18.76	86.92	12.88	131.00	16.91	II,Nov	9.6	
Co 7219 (ML)	51.00	108	2.35	266	0.84	18.43	19.58	88.35	13.54	90.70	12.27	II,Nov	32.6
Co 6907 (E)	60.33	131	2.30	232	0.76	19.58	19.83	89.72	13.81	99.90	13.88	Non-flowering	-
C.D (5%)	18.83	15.66	0.35	43.11	0.23	1.73	1.15	NS	0.99	20.66	2.97		

* Significant at P=0.05

+ Observations recorded at Coimbatore (Main Campus) during 1988.

I, II, III, IV - Four weeks of month

local check. The clones, Co 8021, Co 8025, Co 8342, Co 8350, Co 8356, Co 8358, Co 8362, Co 8368, Co 85033 and Co 85268 were found promising for sucrose percentage at 10 month crop stage in comparison with the early check. Since all the clones evaluated did not flower at Coimbatore and non-flowering clones could not be utilised in future breeding programmes, therefore, performance of only some elite flowering clones is presented in Table 1. Some of the clones could serve as genetic stocks which may contribute to sugarcane improvement in east coast zone.