

**ALL INDIA CO-ORDINATED RESEARCH PROJECT ON
SUGARCANE**

Crop Improvement Report

2015-16

&

Technical Programme
2016-17

**PUNJAB AGRICULTURAL UNIVERSITY, REGIONAL RESEARCH
STATION, KAPURTHALA -144 601**

ANNUAL REPORT [CROP IMPROVEMENT]

All the 8 research trials programmed for the year 2015-16 conveyed by the Project Coordinator, AICRP(S), Lucknow were laid down as per the technical programme and monitored by the team constituted by the Project Coordinator during Sept, 2015. The results of various trials received under crop improvement are detailed below:

1. Initial Varietal Trial Early (IVT-E)

Ten test clones and two standards were evaluated in this trial for different cane yield and quality traits and data generated is appended in Table 1. The test clones viz. CoH 12261 (107.49 t/ha) surpassed the high yielding standard Co 0238 (106.87 t/ha) for cane yield. Two test clones CoH 12202 (104.81 t/ha) and CoPant 12222 (104.40 t/ha) were at par for cane yield with Co 0238 but superior to standard CoJ 64 (93.19 t/ha). The other cane characters of clone CoH 12261 were more stalk length (2.49 m), higher cane diameter (2.55 cm) and higher single cane weight (1.26 kg). Two clones viz; Co 12027 (13.06) and Co 12026 (12.97) scored highest commercial cane sugar (CCS t/ha) as well as for sucrose per cent (18.57 and 18.58 respectively) as compared to standard CoJ 64 (CCS 11.56 t/ha and sucrose 17.78 %). Similarly, CCS (%) was highest for Co 12027 (13.04 %) closely followed by Co 12026 (12.99 %) which was superior to standard CoJ 64 (12.41 %).

2. Advance Varietal Trial Early I Plant (AVT-E I Plant)

In this trial, four test clones along with two standards were evaluated at for cane yield and quality traits (Table 2). However, no clone could surpass the cane yield possessed by standard Co 0238 (97.55 t/ha). Only one clone CoLk 11202 could result in cane yield of 91.24 t/ha. But, the clone CoLk 11203 recorded highest sucrose per cent (19.53 %); CCS per cent (13.61 %) and pol per cent cane (13.37 %). Also, CCS (t/ha) and fibre (%) were high for CoLk 11203 to the tune of 10.12 and 15.34, respectively. However, clone CoH 11262 had highest stalk length (2.24 m), cane diameter (2.37 cm) and single cane wt. (1.00 kg).

3. Advance Varietal Trial Early II Plant (AVT-E II Plant)

Among three test clones and two standards evaluated for cane yield and component traits in this trial, clone CoH 10261 ranked 1st for cane yield (96.57 t/ha) followed by CoS 10231 having cane yield (95.59 t/ha) and Co 10035 (77.45 t/ha) as compared to standards CoPant

84211 (79.94 t/ha) and CoJ 64 (76.60 t/ha) (Table 3). The clone CoS 10231 recorded highest cane length (2.48 m) while clone CoH 10261 possessed highest cane diameter (2.48 cm) and single cane weight (1.08 kg). For quality traits, CoH 10261 scored highest CCS t/ha (11.20) followed by CoS 10231 (10.99). Clone Co 10035 exhibited highest sucrose per cent (17.24 %) and brix per cent (19.71 %) in 10 month crop which is superior to both the standards tested (Co J64 and CoPant 84211).

4. Advance Varietal Trial Early Ratoon

In advance varietal trial early ratoon, Clone CoH 10261 recorded the highest cane yield (76.30 t/ha), followed by CoS 10231 (75.55 t/ha) and Co 10035 (61.28 t/ha) while NMC 9 months (‘000/ha) was highest for Co 10035 (79.76) followed by CoS 10231 (77.59). For quality traits, clone CoS 10231 recorded the highest CCS (t/ha) (9.75) followed by CoH 10261 (8.67) and Co 10035 (8.29) which is significantly higher than both the standards. The promising clones for sucrose per cent were Co 10035 (19.22 %) followed by CoS 10231 (18.47 %) (Table 4).

5. Initial Varietal Trial Mid-Late (IVT-M/L)

Fifteen test clones along with three standards were evaluated for cane yield and component traits in this trial. Among the test clones Co 12029 ranked 1st for cane yield (96.11 t/ha) followed by CoPant 12226 (92.08 t/ha), CoLk 12224 (90.79 t/ha) and CoH 12263 (87.64 t/ha). However, promising clones for single cane weight were CoLk 12224 (1.29 kg), CoPant 12226 (1.27 kg) and CoLk 12205 (1.21 kg). Among cane yield attributes, promising stalk length (m) was found in clones CoLk 12223 (2.63), CoPb 12182 (2.58), CoPant 12226 (2.48) and CoPb 12211 (2.46) (Table 5). CCS (t/ha) was found to be highest in clone CoPant 12226 (11.30) followed by Co 12029 (10.90) and CoH 12263 (10.69). The test clone Co 12028 showed significant superiority for sucrose per cent 12 months (18.04 %) than standards (CoPant 97222 having maximum 17.48 %) while clones CoH 12262 (17.58 %) and CoPb 12181 (17.85 %) were at par for sucrose per cent 12 months with standards.

6. Advance Varietal Trial Mid-Late I Plant (AVT-M/L I Plant)

This trial consisted of six test clones and three standards which were evaluated for cane yield and quality attributes. The data appended in table 6 showed that the top three clones for

cane yield were CoS 11232 (99.41 t/ha), CoLk 11206 (98.36 t/ha) and CoLk 11204 (91.24 t/ha). Highest stalk length and single cane weight were recorded for clone Co 11027 (2.58 m and 1.29 kg respectively) while stalk diameter was recorded maximum for clone CoLk 11206 (2.51 cm). Top three significantly superior clones for CCS t/ha than standards were CoS 11232 (11.28), CoS 11232 (11.28) and CoLk 11204 (11.07). For sucrose per cent, clones Co 11027 (17.84 %), CoPb 11214 (17.51 %) and CoLk 11204 (17.41 %) were top performers. No test clone could surpass the standards for pol per cent cane, but only CoH 11263 (14.15 %) was at par with the standard CoS 8436 (13.93 %).

7. Advance Varietal Trial Mid-Late II Plant (AVT-M/L II Plant)

In advance varietal trial mid-late II Plant, eight clones including five test and three standards were assessed for cane yield and quality parameters during 2014-15. The most promising clones for cane yield were CoPb 10182 and CoH10262 having equal cane yield (106.12 t/ha), closely followed by CoPb 10181 (105.09 t/ha) and CoH 10036 (103.46 t/ha). All these clones were significantly superior to the standards for cane yield t/ha. The top three clones for single cane weight were CoPb 10181 (2.68 kg), CoH 10036 (2.65 kg) and CoPb 10182 (2.52 kg) (Table 7). Clone CoPant 10221 had significantly higher NMC ('000/ha) (109.03) than standard CoS 8436 (92.80). All the test clones were comparable with standards for stalk diameter. The highest CCS t/ha were recorded for CoPb 10182 (13.00) and clone CoPb 10181 (12.56). No test clone could surpass the standards for sucrose per cent and pol per cent cane.

8. Advance Varietal Trial Mid-Late Ratoon (AVT-M/L Ratoon)

Advance varietal trial mid-late ratoon conducted with five test clones along with three standards showed that cane yield among clones ranged from 93.53 t/ha to 99.13 t/ha. The promising clones for cane yield were CoPb 10181 (99.13 t/ha) followed by CoPb 10182 (98.83 t/ha) and CoH 10036 (96.02 t/ha) and were significantly superior to the standards.

The promising clones for cane length and cane diameter were CoPb 10181 (2.44 m, 2.28 cm) and CoPb 10182 (2.28 m, 2.17 cm) while for single cane weight (kg) were CoPb 10181 (1.03) and CoH 10036 (1.02), respectively. Clone CoPb 10181 excelled significantly for CCS (t/ha) (12.13 %), while clone CoPant 10221 exhibited significant superiority for sucrose per cent (17.86 %) and CCS per cent (12.56 %) than standards (Table 8).

9. Fluff supply programme

Will be communicated shortly as per new format.

10. Technical program 2016 – 2017

During 2016-2017, eight (8) research trials programmed for the year conveyed by the Project Coordinator, AICRP(S), Lucknow were laid down as per the technical programme in the month of Feb-March, 2016. All trials are in progress and data on germination, tiller count has been recorded. The various trials received under crop improvement are detailed below:

S. No.	AICRP(S) Trial	No of entries
1.	Initial Varietal trial- Early	9+2
2.	Advance Varietal Trial –Early I Plant	4+2
3.	Advance Varietal Trial –Early II Plant	4+2
4.	Advance Varietal Trial – Early Ratoon	4+2
5.	Initial Varietal Trial-Mid late	13+3
6.	Advance Varietal Trial – Mid late I Plant	6+3
7.	Advance Varietal Trial – Mid late II Plant	6+3
8.	Advance Varietal Trial – Mid late Ratoon	6+3

ZVT Multiplication

Cane seed of 10 early and 11 mid/late clones as per proceedings of annual group meeting of AICRP(S) at RAU, Pusa, 2015, was collected from SBI, regional centre, Karnal and has been planted for their multiplication.

North West Zone, RRS, Kapurthala Centre

1. Initial Varietal Trial (Early)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % 10 months	Sucrose % 10 Months	Purity % 10 Months	CCS % 10 Months	Pol % Cane 10 Months	Extraction % 10 Months	Fiber % 10 Months	NMC at 10 Months (000/ha)
1	Co 12026	12.97	99.83	20.53	18.58	90.49	12.99	13.24	54.55	14.08	99.75
2	Co12027	13.06	100.17	20.33	18.57	91.36	13.04	13.52	54.69	14.50	97.41
3	CoH 12261	12.86	107.49	17.40	16.68	95.86	11.97	13.30	58.53	14.09	85.47
4	CoLk 12201	11.20	92.08	19.31	17.42	90.26	12.16	12.96	55.80	13.25	88.15
5	CoLk 12202	12.52	104.81	18.65	17.01	91.22	11.94	12.83	58.78	12.77	87.90
6	CoLk 12203	12.19	99.32	18.79	17.38	92.50	12.28	13.07	54.70	12.22	101.48
7	CoLk 12204	9.17	81.93	17.51	15.96	91.15	11.20	11.61	50.81	12.29	93.09
8	CoPant 12221	9.93	91.95	17.74	15.63	88.12	10.79	11.57	52.59	15.63	95.06
9	CoPant 12222	12.35	104.40	19.21	17.06	88.80	11.83	12.47	55.19	13.89	95.06
10	CoS 12231	11.52	100.62	17.66	16.24	91.96	11.44	12.02	52.33	14.77	100.37
Stds											
1	CoJ 64	11.56	93.19	19.74	17.78	90.06	12.41	13.45	57.25	11.54	107.65
2	Co 238	12.53	106.87	19.05	16.92	88.82	11.73	13.30	58.30	12.53	87.74
	CD	1.28	9.83	0.86	0.73	1.57	0.53	0.72	4.03	1.46	12.63
	CV	6.42	5.90	2.71	2.54	1.02	2.59	3.35	4.31	6.40	7.86

S.N.	Clone	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	Brix % 8 Months	Sucrose % 8 Months	Purity % 8 Months	CCS % 8 Months	No. of Shoots (000/ha) 240 days	No. of Tillers (000/ha) 120 days	Germination % 45 Days
1	Co 12026	2.32	2.13	1.00	18.26	17.04	93.31	12.08	113.22	120.99	41.43
2	Co12027	2.13	2.03	1.04	19.85	18.32	92.31	12.93	109.89	117.79	43.56
3	CoH 12261	2.49	2.55	1.26	17.89	15.47	86.47	10.59	97.01	104.53	40.73
4	CoLk 12201	2.62	2.40	1.05	19.00	16.46	86.70	11.27	100.05	109.14	40.05
5	CoLk 12202	2.54	2.47	1.25	18.32	15.97	87.17	10.97	99.76	107.49	40.20
6	CoLk 12203	2.53	2.30	1.03	16.02	14.61	91.20	10.25	114.18	123.44	40.15
7	CoLk 12204	2.11	2.17	0.88	16.42	14.01	85.36	9.52	105.65	113.51	36.55
8	CoPant 12221	2.74	2.13	0.97	16.42	14.74	89.76	10.27	107.90	116.26	37.75
9	CoPant 12222	2.25	2.54	1.14	17.82	15.60	87.54	10.74	108.23	114.59	36.27
10	CoS 12231	2.34	2.07	1.06	17.42	14.68	84.28	9.92	113.25	122.75	34.80
Stds											
1	CoJ 64	2.40	2.39	0.87	18.53	16.54	89.26	11.49	121.52	131.66	43.13
2	Co 238	2.53	2.61	1.26	18.20	16.19	88.96	11.23	99.59	108.64	41.42
	CD	NS	0.29	0.17	0.8	0.77	3.33	0.66	13.24	14.1	4.56
	CV	9.94	7.4	9.7	2.66	2.88	2.22	3.56	7.33	7.19	6.78

2. Advanced Varietal Trial (Early – I Plant)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % 10 months	Sucrose % 10 Months	Purity % 10 Months	CCS % 10 Months	Pol % Cane 10 Months	Extraction % 10 Months	Fiber % 10 Months	NMC at 10 Months (000/ha)
1	CoH 11262	9.30	85.58	17.75	15.71	88.49	10.88	11.55	54.61	13.71	85.20
2	CoLk 11201	8.59	69.13	20.46	18.00	88.01	12.43	13.24	54.43	13.67	73.26
3	CoLk 11202	11.44	91.24	20.21	18.03	89.21	12.53	11.59	49.33	11.15	90.98
4	CoLk 11203	10.12	74.30	21.74	19.53	89.80	13.61	13.37	45.97	15.34	88.85
Stds											
1	CoJ 64	9.03	73.98	19.53	17.51	89.67	12.19	13.19	56.53	10.43	92.33
2	Co 238	11.52	97.55	19.37	17.09	88.21	11.81	13.17	56.26	13.12	84.82
	CD	1.35	8.75	0.91	0.78	NS	0.57	1.03	2.79	0.73	7.42
	CV	7.40	5.88	2.52	2.45	1.13	2.57	4.48	2.91	3.13	4.75

S.N.	Clone	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	Brix % 8 Months	Sucrose % 8 Months	Purity % 8 Months	CCS % 8 Months	No. of Shoots (000/ha) 240 days	No. of Tillers (000/ha) 120 days	Germination % 45 Days
1	CoH 11262	2.24	2.37	1.00	15.64	15.12	88.44	9.99	91.17	98.46	38.27
2	CoLk 11201	1.98	2.25	0.94	18.56	17.21	85.30	11.19	78.39	84.66	37.87
3	CoLk 11202	2.09	2.21	1.00	17.53	16.80	84.72	10.66	97.35	105.14	39.83
4	CoLk 11203	2.24	1.84	0.84	20.37	19.37	87.28	12.73	95.07	103.44	40.40
Stds											
1	CoJ 64	2.36	2.20	0.80	17.38	16.91	88.55	11.15	98.09	106.72	46.75
2	Co 238	2.57	2.45	1.15	17.33	16.47	88.19	10.95	90.11	98.04	43.13
	CD	NS	0.25	0.09	1.05	0.88	NS	0.74	7.93	8.58	3.95
	CV	13	6.41	5.41	3.11	3	2.59	3.66	4.76	4.75	5.3

3. Advanced Varietal Trial (Early II Plant)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % 10 months	Sucrose % 10 Months	Purity % 10 Months	CCS % 10 Months	Pol % Cane 10 Months	Extraction % 10 Months	Fiber % 10 Months	NMC at 10 Months (000/ha)
1	Co 10035	9.20	77.45	19.71	17.24	87.45	11.86	12.25	53.24	11.58	92.17
2	CoH 10261	11.20	96.57	18.97	16.75	88.33	11.58	13.23	57.57	12.81	89.90
3	CoS 10231	10.99	95.59	18.98	16.68	87.90	11.51	12.46	55.63	13.11	93.56
Stds											
1	CoJ 64	9.01	76.60	19.31	17.01	88.06	11.74	12.64	54.65	14.05	87.38
2	CoPant 84211	8.99	79.94	19.10	16.47	86.25	11.25	13.50	57.59	13.91	90.21
	CD	1.17	7.66	NS	NS	NS	NS	0.35	NS	1.16	3.35
	CV	7.71	5.83	2.15	2.63	2.11	3.36	1.79	4.00	5.73	2.40

S.N.	Clone	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	Brix % 8 Months	Sucrose % 8 Months	Purity % 8 Months	CCS % 8 Months	No. of Shoots (000/ha) 240 days	No. of Tillers (000/ha) 120 days	Germination % 45 Days
1	Co 10035	2.45	2.05	0.84	17.85	15.01	84.08	10.12	103.81	111.12	46.54
2	CoH 10261	1.57	2.48	1.08	16.58	13.55	81.79	9.01	98.68	111.16	43.26
3	CoS 10231	2.48	2.40	1.02	16.85	14.35	85.21	9.75	104.21	112.02	44.96
Stds											
1	CoJ 64	2.18	2.14	0.86	17.43	15.23	85.85	9.43	97.55	104.98	47.99
2	CoPant 84211	2.30	1.88	0.87	16.10	13.82	87.43	10.47	105.00	107.88	44.25
	CD	0.59	0.24	0.09	0.79	0.54	2.69	0.41	5.25	4.19	NS
	CV	17.61	7.19	6.84	3.02	2.43	2.05	2.73	3.34	2.49	5.95

4. Advanced Varietal Trial (Early Ratoon)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % at Harvest	Sucrose % at Harvest	Purity % at Harvest	CCS % at Harvest	Pol % Cane at harvest	Extraction % at Harvest
1	Co 10035	8.29	61.28	21.01	19.22	91.44	13.50	12.25	53.24
2	CoH 10261	8.67	76.30	18.65	16.45	88.28	11.37	13.23	57.57
3	CoS 10231	9.75	75.55	20.46	18.47	90.41	12.90	12.46	55.63
Stds									
1	CoJ 64	7.82	60.49	20.01	18.36	91.76	12.92	12.64	54.65
2	CoPant 84211	7.85	62.83	19.34	17.74	91.69	12.48	13.50	57.59
	CD	0.90	7.37	0.89	0.44	NS	0.32	0.28	NS
	CV	6.95	7.11	2.91	1.6	2.11	1.65	1.38	2.86

S.N.	Clone	Fiber % at Harvest Months	NMC at at Harvest (000/ha)	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	No. of Shoots (000/ha) 180 days	No. of Tillers (000/ha) 90 days
1	Co 10035	11.58	79.76	1.99	1.88	0.80	84.38	86.95
2	CoH 10261	12.81	74.52	1.89	2.28	1.03	79.46	86.60
3	CoS 10231	13.11	77.59	2.25	2.20	0.97	84.07	88.99
Stds								
1	CoJ 64	14.05	79.30	1.72	1.96	0.81	76.45	84.15
2	CoPant 84211	13.91	77.02	2.21	1.72	0.83	83.82	89.83
	CD	1.18	3.31	NS	0.22	0.09	4.37	3.54
	CV	5.72	2.77	12.58	7.21	6.98	3.48	2.63

5. Initial Varietal Trial (Midlate)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % 12 months	Sucrose % 12 Months	Purity % 12 Months	CCS % 12 Months	Pol % Cane 12 Months	Extraction % 12 Months	Fiber % 12 Months	NMC at 12 Months (000/ha)
1	Co 12028	9.07	72.61	20.30	18.04	88.86	12.51	13.40	58.81	12.37	72.71
2	Co12029	10.90	96.11	18.83	16.48	87.52	11.34	12.13	51.11	13.20	83.75
3	CoH 12262	8.35	67.86	19.41	17.58	90.55	12.29	12.81	55.40	13.83	62.50
4	CoH 12263	10.69	87.64	19.29	17.45	90.60	12.21	13.41	55.45	13.80	74.06
5	CoLk 12205	9.61	87.30	18.24	15.99	87.68	11.02	12.62	55.90	14.54	70.00
6	CoLk12206	8.78	80.75	17.76	15.71	88.51	10.87	11.63	52.58	15.17	96.77
7	CoLk 12223	8.60	76.18	18.92	16.45	86.93	11.28	12.05	52.26	15.28	89.06
8	CoLk 12224	9.81	90.79	17.72	15.62	88.13	10.79	12.14	58.64	11.58	75.31
9	CoPant 12225	6.26	64.28	16.45	14.23	86.53	9.74	11.42	55.48	13.88	60.83
10	CoPant 12226	11.30	92.08	19.05	17.45	91.65	12.27	12.51	54.07	13.19	71.98
11	CoPb 12181	8.41	67.71	19.96	17.85	89.45	12.42	13.24	56.52	11.82	68.13
12	CoPb 12182	9.17	76.03	19.27	17.31	89.83	12.07	12.84	55.49	14.25	72.08
13	CoPb 12211	8.36	69.86	18.49	17.00	91.95	11.97	12.49	55.31	13.02	68.13
14	CoPb 122212	9.37	77.46	18.43	17.10	92.83	12.10	12.07	50.59	16.18	85.00
15	CoS 12232	9.16	76.09	19.15	17.26	90.12	12.04	12.82	53.71	14.17	76.67
Stds											
1	CoS 767	9.23	79.84	18.30	16.55	90.49	11.57	12.66	53.81	12.75	78.96
2	CoS 8436	8.33	73.79	18.04	16.21	89.90	11.30	12.19	53.03	14.78	72.40
3	CoPant 97222	7.38	60.83	19.65	17.48	88.99	12.13	13.19	54.12	14.12	64.48
	CD	0.94	7.64	0.65	0.54	3.61	0.53	0.5	4.08	1.47	19.19
	CV	6.27	5.93	2.08	1.94	2.43	2.71	2.38	4.5	6.41	15.51

S.N.	Clone	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	Brix % 10 Months	Sucrose % 10 Months	Purity % 10 Months	CCS % 10 Months	No. of Shoots (000/ha) 240 days	No. of Tillers (000/ha) 120 days	Germination % 45 Days
1	Co 12028	1.98	2.57	1.00	16.76	14.37	85.74	9.79	80.31	92.52	39.51
2	Co12029	2.12	2.43	1.16	16.33	13.94	85.37	9.48	99.17	109.24	41.73
3	CoH 12262	2.23	2.45	1.09	18.48	16.60	89.97	11.57	69.03	79.53	40.96
4	CoH 12263	2.16	2.45	1.18	18.46	16.58	89.85	11.55	81.80	94.24	39.84
5	CoLk 12205	2.44	2.08	1.21	17.41	14.09	81.01	9.32	79.32	89.07	39.40
6	CoLk12206	2.08	1.82	0.77	16.03	14.10	87.96	9.73	96.88	106.47	44.29
7	CoLk 12223	2.63	1.93	0.94	17.14	14.72	85.87	10.04	94.93	104.36	43.29
8	CoLk 12224	2.17	2.70	1.29	16.46	14.02	85.18	9.52	83.94	94.21	39.51
9	CoPant 12225	1.67	2.71	1.06	14.41	12.37	85.87	8.43	69.13	78.65	39.40
10	CoPant 12226	2.48	2.89	1.27	17.93	16.26	90.70	11.38	80.22	92.39	42.96
11	CoPb 12181	2.03	2.22	0.92	18.77	16.66	88.76	11.55	75.93	91.41	40.48
12	CoPb 12182	2.58	2.70	1.04	18.34	16.07	87.62	11.07	83.67	99.85	40.52
13	CoPb 12211	2.46	2.45	1.08	17.92	16.22	90.50	11.34	74.94	85.93	40.10
14	CoPb 122212	2.31	2.23	1.00	18.07	16.49	91.26	11.58	96.83	107.79	45.48
15	CoS 12232	1.91	2.25	1.00	17.90	15.98	89.27	11.10	87.67	101.16	42.48
Stds											
1	CoS 767	2.22	2.13	0.92	18.32	16.34	89.20	11.35	90.19	100.75	44.54
2	CoS 8436	1.85	2.18	1.02	18.27	16.40	89.77	11.43	79.64	92.54	41.52
3	CoPant 97222	2.29	2.25	0.94	18.44	16.05	87.04	11.02	70.93	82.42	39.14
	CD	0.41	0.37	0.18	0.67	0.58	3.54	0.54	13.34	12.53	NS
	CV	11.22	9.45	10.47	2.29	2.28	2.43	3.04	9.69	7.98	6.39

6. Advanced Varietal Trial (Midlate I Plant)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % 12 months	Sucrose % 12 Months	Purity % 12 Months	CCS % 12 Months	Pol % Cane 12 Months	Extraction % 12 Months	Fiber % 12 Months	NMC at 12 Months (000/ha)
1	Co 11027	9.76	79.10	20.19	17.84	88.35	12.33	12.60	50.57	16.30	60.26
2	CoH 11263	10.50	88.60	20.13	17.35	86.22	11.86	14.15	56.42	13.10	78.86
3	CoLk 11204	11.07	91.24	19.38	17.41	89.82	12.13	12.52	53.53	13.48	83.72
4	CoLk 11206	11.79	98.36	19.38	17.27	89.24	12.00	12.56	51.36	16.05	81.10
5	CoPb 11214	9.27	77.32	20.20	17.51	86.66	11.99	12.21	46.63	16.54	85.88
6	CoS 11232	11.28	99.41	19.18	16.59	86.50	11.35	12.48	57.99	14.28	90.69
Stds											
1	CoS 767	8.18	68.19	19.34	17.27	89.26	12.00	13.65	58.98	13.51	72.39
2	CoS 8436	10.48	86.44	19.50	17.44	89.44	12.13	13.93	55.99	13.22	84.10
3	CoPant 97222	8.38	68.42	19.94	17.67	88.61	12.24	13.01	57.60	13.57	69.83
	CD	1.05	8.99	NS	NS	NS	NS	0.79	4.37	1.72	11.53
	CV	6.02	6.18	2.29	2.29	1.96	2.8	3.49	4.65	6.86	8.49

S.N.	Clone	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	Brix % 10 Months	Sucrose % 10 Months	Purity % 10 Months	CCS % 10 Months	No. of Shoots (000/ha) 240 days	No. of Tillers (000/ha) 120 days	Germination % 45 Days
1	Co 11027	2.58	2.45	1.29	18.15	15.23	83.92	10.26	66.29	76.89	34.28
2	CoH 11263	2.31	2.48	1.14	17.27	14.48	83.84	9.75	86.74	100.96	38.97
3	CoLk 11204	2.34	2.38	1.09	17.59	15.38	87.46	10.58	92.09	106.83	39.57
4	CoLk 11206	2.44	2.51	1.26	17.54	15.48	88.25	10.70	89.57	103.90	38.73
5	CoPb 11214	2.25	2.16	0.90	16.61	13.82	83.24	9.28	99.05	108.17	39.00
6	CoS 11232	2.57	2.24	1.07	16.59	14.56	87.80	10.04	100.70	117.32	35.04
Stds											
1	CoS 767	2.34	2.41	0.92	18.20	16.18	88.94	11.23	80.30	91.67	40.74
2	CoS 8436	1.98	2.34	1.03	17.22	15.35	89.16	10.66	93.73	107.60	41.24
3	CoPant 97222	2.20	2.21	0.98	16.60	14.17	85.42	9.64	77.83	90.44	37.61
	CD	NS	0.11	0.12	0.41	0.5	3.07	0.5	11.81	13.35	NS
	CV	9.91	2.66	6.7	1.36	1.93	2.06	2.81	7.81	7.69	6.77

7. Advanced Varietal Trial (Midlate II Plant)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % 12 months	Sucrose % 12 Months	Purity % 12 Months	CCS % 12 Months	Pol % Cane 12 Months	Extraction % 12 Months	Fiber % 12 Months	NMC at 12 Months (000/ha)
1	CoH 10036	12.36	103.46	19.32	17.20	89.07	11.94	13.24	57.71	12.27	96.91
2	CoH 10262	13.26	106.12	19.70	17.85	90.59	12.49	13.75	60.12	11.97	97.50
3	CoPant 10221	11.38	99.91	18.43	16.42	89.12	11.40	12.04	54.46	13.24	109.03
4	CoPb 10181	12.56	105.09	19.18	17.18	89.58	11.95	13.67	63.52	10.22	98.56
5	CoPb 10182	13.00	106.12	19.65	17.61	89.58	12.26	13.98	61.64	11.51	99.15
Stds											
1	CoS 767	10.01	77.61	20.27	18.41	90.81	12.89	14.08	57.49	12.31	79.01
2	Cos 8436	12.70	98.44	20.15	18.37	91.15	12.89	14.03	59.10	11.45	92.80
3	CoPant 97222	9.79	79.30	19.55	17.65	90.31	12.33	12.94	54.76	14.48	89.89
	CD	1.50	14.44	0.64	0.47	NS	0.36	0.77	4.77	1.53	11.81
	CV	7.21	8.43	1.87	1.52	1.2	1.66	3.25	4.65	7.16	7.07

S.N.	Clone	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	Brix % 10 Months	Sucrose % 10 Months	Purity % 10 Months	CCS % 10 Months	No. of Shoots (000/ha) 240 days	No. of Tillers (000/ha) 120 days	Germination % 45 Days
1	CoH 10036	2.48	1.04	2.65	18.49	15.40	83.30	10.34	107.04	128.92	42.15
2	CoH 10262	2.35	1.05	2.50	16.79	14.81	88.23	10.24	114.36	124.66	42.48
3	CoPant 10221	2.10	0.84	2.33	17.21	15.32	89.03	10.63	122.17	130.25	40.10
4	CoPb 10181	2.35	1.04	2.68	17.61	15.50	87.99	10.70	107.44	127.11	42.96
5	CoPb 10182	2.24	1.12	2.52	18.34	15.99	87.17	10.98	107.07	122.51	39.52
Stds											
1	CoS 767	2.16	0.90	2.50	18.64	16.21	86.98	11.12	88.81	99.37	40.96
2	Cos 8436	2.54	0.97	2.08	18.11	16.14	89.14	11.21	101.90	116.71	39.40
3	CoPant 97222	2.25	0.81	2.31	16.87	14.47	85.79	9.86	99.05	113.06	39.51
	CD	0.22	0.25	0.15	0.78	0.85	NS	0.73	12.91	14.18	NS
	CV	5.12	6.09	8.59	2.5	3.12	2.37	3.91	6.96	6.73	6.54

8. Advanced Varietal Trial (Midlate - Ratoon)

S.N.	Clone	CCS t/ha	Cane yield t/ha	Brix % at Harvest	Sucrose % at Harvest	Purity % at Harvest	CCS % at Harvest	Pol % Cane at Harvest	Extraction % at Harvest
1	CoH 10036	10.66	96.02	17.85	15.96	89.40	11.10	13.24	57.71
2	CoH 10262	10.65	94.60	18.89	16.42	86.92	11.26	13.75	60.12
3	CoPant 10221	11.75	93.53	19.49	17.86	91.63	12.56	12.04	54.46
4	CoPb 10181	12.13	99.13	19.10	17.43	91.27	12.24	13.67	63.52
5	CoPb 10182	11.71	98.83	18.48	16.88	91.34	11.85	13.98	61.64
Stds									
1	CoS 767	9.13	75.41	18.86	17.22	91.49	12.09	14.08	57.49
2	Cos 8436	10.64	88.21	19.43	17.34	89.27	12.05	14.03	59.10
3	CoPant 97222	8.46	77.52	17.26	15.61	90.44	10.91	12.94	54.76
	CD	1.13	6.81	0.94	0.83	NS	0.76	0.8	4.3
	CV	6.06	4.30	2.9	2.84	2.83	3.69	3.33	4.21

S.N.	Clone	Fiber % at Harvest	NMC at Harvest (000/ha)	Stalk Length (m)	Stalk diameter (cm)	Single cane weight (kg)	No. of Shoots (000/ha) 180 days	No. of Tillers (000/ha) 90 days
1	CoH 10036	12.27	89.08	2.15	1.80	1.02	98.39	113.06
2	CoH 10262	11.97	89.22	2.09	2.09	1.01	98.54	113.24
3	CoPant 10221	13.24	100.21	2.16	2.02	0.88	110.69	127.19
4	CoPb 10181	10.22	93.33	2.44	2.28	1.03	101.73	115.17
5	CoPb 10182	11.51	91.13	2.28	2.17	1.00	99.34	114.15
Stds								
1	CoS 767	12.31	72.62	2.26	2.09	0.99	79.16	89.62
2	Cos 8436	11.45	86.60	1.81	2.45	0.93	94.78	108.25
3	CoPant 97222	14.48	82.62	2.11	2.00	0.86	90.43	103.28
	CD	1.59	13.84	0.15	0.11	0.08	15.25	17.5
	CV	7.43	8.97	3.9	3.04	5.22	9.01	9.04