

All India Coordinated Research Project on Sugarcane
ANNUAL REPORT 2012-13
FARIDKOT CENTRE

INTRODUCTION

Sugarcane is an important agro industrial crop, which occupied about 80 thousand hectares in Punjab during 2011-12. The average cane yield was 70.7 tonnes per hectare. The average sugar recovery was 9.1 per cent.

Realizing the importance of sugarcane crop in the State Indian Council of Agricultural Research sanctioned sugarcane research station, Faridkot under the All India Coordinated Research Project on Sugarcane during 1995. Faridkot Station is working as coordinating Centre for conducting Zonal trials in breeding and agronomy disciplines in North West Zone.

The Regional Research Station, Faridkot was established in April 1970 and has about 45 acres of rich fertile, leveled and well laid out farm area for experimentation. It is located in the agriculturally most potential region - Zone IV of Punjab. Zone IV lies between the Central-Plain Zone on the Northeast and Western Zone (plain with sand dunes) on the Southwest. The Zone IV comprises 21 development blocks. It covers about 10 049 Sq Km (14, 91,300 ha gross cropped area) area representing nearly 20 percent area of the State.

The major thrust area of this zone is to develop sugarcane varieties and production technologies for saline water, late planting (after wheat harvest) conditions and sugarcane cultivation under wheat based cropping system. Two recommendations have been made by Faridkot Centre viz sugarcane variety CoJ 88 (CoJ 99192) recommended for cultivation under saline water and CoJ 89 (CoJ 20193) for late planting condition in Punjab State in order to enhance productivity through crop diversification. The recommendation of garlic intercropping in sugarcane has been made during 2012-13. Sugarcane planting in standing wheat sown by Furrow Irrigated Raised Bed (FIRB) method has been recommended. Faridkot centre is also associated in the development and release of mid late variety CoJ 20193 for North West Zone of India. Recommended a mid late maturing sugarcane variety CoH 119 for general cultivation in Punjab. Recommended paired row trench planting of sugarcane for higher water use efficiency. Promising genotypes CoPb 09181 is being tested in 18 adaptive research trials in Punjab. The centre contributed two entries CoPb 12181 and CoPb 12182 for testing in Zonal Varietal Trials of North West Zone in 2012.

WEATHER AT FARIDKOT

Data on weather parameters recorded at Faridkot center during 2012-13 are presented in Table 1. It received 247 mm annual rainfall spread over 17 days. Mean maximum temperature was 39.98°C during June 2012. The lowest mean minimum temperature of 5.11°C was recorded during January 2013. Crop attained good growth. Top borer, Root borer, termite and wilt incidence was noticed under field conditions.

**Table 1. Meteorological Data for 2012-2013
North West Zone
Location – FARIDKOT**

Month/Year	Temperature °C		Rainfall Mm	No. of rainy days	Pest/Disease incidence
	MAX	MIN			
Apr.'12	33.5	18.70	03.0	1	Shoot borer
May'12	39.46	23.84	Nil	Nil	Shoot borer
Jun.'12	39.98	26.64	42.0	2	Top borer
Jul.'12	36.48	27.60	Nil	Nil	Top borer
Aug.'12	33.41	26.32	34.0	3	Top borer
Sep.'12	32.77	23.48	65.0	3	Top borer
Oct.'12	30.86	16.27	Nil	Nil	Termite
Nov.'12	26.74	10.69	Nil	Nil	Root borer
Dec.'12	18.55	06.69	17.0	1	Root borer
Jan.'13	16.66	05.11	10.0	1	Termite, wilt
Feb.'13	19.63	09.12	69.0	5	Termite, wilt
Mar.'13	27.13	13.85	07.0	1	Termite, wilt
Total			247.0	17	

BREEDING

A. ZONAL VARIETAL TRIALS

1. Initial Varietal Trial (Early)

The experiment was conducted with twelve entries and two checks viz; Co 09020, CoH 09261, CoH 09262, CoH 09263, CoLk 09201, CoLk 09202, CoLk 09203, CoPb 09181, CoPb 09211, CoPb 09212, CoPb 09213, Co 09246 checks- CoJ 64, CoPant 84211 in RBD with three replications. Test entries CoPb 09181 (122.11 t/ha and 14.83 t/ha), CoH 09262 (102.11 t/ha and 12.35 t/ha) and CoLk 09201 (96.84 t/ha and 12.26 t/ha) were significantly superior to the best check CoPant 84211 (83.16 t/ha and 10.271 t/ha) in cane and sugar yield (Table 2).

Conclusion: CoPb 09181, CoH 09262 and CoLk 09201 were found promising in cane and sugar yield.

2. Advanced Varietal Trial (Early) I Plant

The experiment was conducted with three entries and two checks viz; CoPb 08211, CoPb 08212, Co 08233 checks- CoJ 64, CoPant 84211 in RBD with four replications. Test entry CoPb 08212 (96.48 t/ha and 11.99 t/ha) was significantly superior to the best check CoJ 64 (80.56 t/ha & 9.61 t/ha) in cane and sugar yield (Table 3).

Conclusion: CoPb 08212 was found promising in cane and sugar yield.

3. Advanced Varietal Trial (Early) II Plant

The experiment was conducted with five entries viz; Co 06032, Co 07023, Co 07025, CoH 07261, CoLk 07201 and two checks- CoJ 64, CoPt 84211 in RBD with three replications. The highest cane and sugar yield was recorded in CoH 07261 (105.96 t/ha & 11.40 t/ha) which was significantly superior to the best standard CoPant 84211 (79.30 t/ha & 9.07 t/ha). Detailed data pertaining to yield and quality characters are presented in Table 4.

Conclusion: CoH 07261 was found promising in cane and sugar yield.

4. Advanced Varietal Trial (Early) Ratoon

Five entries viz; Co 06032, Co 07023, Co 07025, CoH 07261, CoLk 07201 were tested for their ratooning ability against two checks viz; CoJ 64, CoPt 84211 in RBD with three replications. Test entries CoH 07261 (90t/ha and 10.46 t/ha) and Co 07025 (83.70 t/ha and 9.80 t/ha) were significantly superior to the best check CoPt 84211 (68.52 t/ha and 8.75 t/ha) in cane and sugar yield (Table 5).

Conclusion: CoH 07261 and Co 07025 had good ratooning ability and found promising in cane and sugar yield.

**Table 2. Initial Varietal Trial (Early) 2012-13
Location – FARIDKOT (North West Zone)**

Design: RBD, Replications: 3, Date of Planting: 17.02.2012, Plot Size: 6 rows X 6m X 75cm

Sl.	Variety	Ger (%)	No. of shoots 000/ha	NMC 000/ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt (Kg)	November				January				CCS (t/ha)	Ext. (%)
									Brix (%)	Sucr. (%)	Purity (%)	CCS (%)	Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	Co 09020	36.00	127.96	86.48	74.04	184.7	2.75	0.957	16.83	14.87	88.34	10.28	18.83	16.63	88.39	11.52	8.53	48.30
2	CoH 09261	46.88	171.30	102.96	96.14	199.7	2.48	0.947	17.17	14.77	86.03	10.09	17.63	15.34	87.35	10.72	10.30	50.30
3	CoH 09262	56.02	178.52	102.59	102.11	218.7	2.60	1.047	19.37	17.15	88.51	11.87	19.63	17.37	88.22	12.09	12.35	51.44
4	CoH 09263	42.36	155.93	108.33	109.12	217.7	2.47	1.054	16.03	14.14	88.19	9.77	17.13	15.05	87.87	10.45	11.41	46.15
5	CoLk 09201	50.58	214.81	141.67	96.84	218.7	2.03	0.697	19.63	17.32	88.25	11.96	20.90	18.26	88.47	12.67	12.26	45.17
6	CoLk 09202	58.68	227.78	127.04	101.40	216.7	2.26	0.826	17.73	15.35	86.58	10.51	17.93	15.65	87.14	10.72	10.88	38.49
7	CoLk 09203	37.85	135.74	96.11	55.09	192.0	2.45	0.897	17.70	15.49	87.55	10.67	18.07	15.94	88.09	10.99	6.05	44.78
8	CoPb 09181	53.13	187.59	118.89	122.11	230.3	2.85	1.322	18.50	16.40	88.65	11.36	19.33	17.25	89.39	12.13	14.83	53.26
9	CoPb 09211	32.64	175.74	119.44	86.32	223.0	2.28	0.966	18.27	16.11	88.17	11.13	18.50	16.46	88.94	11.48	9.90	51.10
10	CoPb 09212	46.41	182.22	128.33	77.19	153.7	2.25	0.669	17.30	15.24	88.03	10.52	18.57	16.47	89.43	11.46	8.83	45.53
11	CoPb 09213	31.13	190.00	118.33	71.23	220.0	2.17	0.848	17.47	15.37	87.97	10.60	18.87	16.83	89.65	11.81	8.41	43.75
12	CoS 09246	47.22	203.33	130.37	97.19	205.0	2.37	0.828	17.40	15.21	87.36	10.46	18.67	16.09	87.18	11.35	11.05	53.32
Standards																		
1	CoJ 64	50.58	186.85	107.22	79.30	216.7	2.64	0.916	18.93	17.02	89.89	11.86	20.00	17.79	88.56	12.36	9.83	49.71
2	CoPt 84211	45.83	195.37	111.11	83.16	212.7	2.04	0.820	18.97	16.89	89.05	11.72	19.63	17.66	90.10	12.35	10.27	42.07
	CD (5%)	5.73	17.55	10.29	11.49	16.9	0.16	0.161	1.54	1.42	1.71	1.02	1.15	1.00	1.52	0.61	1.54	6.39
	CV%	7.50	5.77	5.36	7.65	4.85	3.84	10.45	5.11	5.36	1.16	5.56	3.63	3.57	1.02	3.15	8.82	8.02

Table 3. Advanced Varietal Trial (Early) I Plant 2012-13
Location – FARIDKOT (North West Zone), Design: RBD, Replications: 4,
Date of Planting: 25.2.2012, Plot Size: 8 rows X 6m X 75cm

Sl.	Variety	Ger. (%)	No. of shoots 000/ha	NMC 000 /ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt. (Kg)	November				January				CCS (t/ha)	Ext. (%)
									Brix (%)	Sucr. (%)	Purity (%)	CCS (%)	Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	CoPb 08211	20.67	158.22	97.11	65.37	197.8	2.65	0.96	19.30	17.21	89.16	11.95	21.25	19.24	90.52	13.46	8.79	52.74
2	Co Pb 08212	26.08	159.44	107.33	96.48	253.8	2.14	1.04	18.30	16.20	88.53	11.21	19.98	17.88	89.52	12.44	11.99	45.33
3	CoS 08233	41.17	197.00	136.11	83.33	208.8	2.19	0.85	18.65	16.61	89.04	11.52	18.90	16.88	89.32	11.74	9.78	49.33
	Standards																	
1	CoJ 64	41.58	194.78	114.56	80.56	211.3	2.35	0.92	18.98	16.94	89.27	11.77	19.00	17.11	90.03	11.93	9.61	51.23
2	CoPt 84211	39.42	161.89	105.00	71.11	234.0	2.17	0.96	18.90	16.84	89.11	11.69	19.00	17.16	90.32	11.99	8.54	45.73
	CD (5%)	4.29	22.45	11.04	9.93	15.50	0.14	0.08	0.56	0.47	NS	0.33	0.68	0.62	NS	0.45	1.25	3.76
	CV%	8.24	8.36	6.39	8.11	4.55	3.85	5.67	1.93	1.81	0.57	1.82	2.26	2.29	0.70	2.37	8.34	4.99

Table 4. Advanced Varietal Trial (Early) II Plant 2012-13
Location – FARIDKOT (North West Zone), Design: RBD, Replications: 3,
Date of Planting: 25.2.2012, Plot Size: 8 rows X 6m X 75cm

Sl.	Variety	Ger. (%)	No. of shoots 000/ha	NMC 000 /ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt. (Kg)	November				January				CCS (t/ha)	Ext. (%)
									Brix (%)	Sucr. (%)	Purity (%)	CCS (%)	Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	Co 06032	20.83	97.96	75.00	68.77	245.7	2.60	1.180	18.27	16.17	88.53	11.20	20.53	18.26	88.93	12.67	8.71	47.03
2	Co 07023	30.56	118.52	86.11	94.74	222.0	2.70	1.146	16.83	14.70	87.34	10.11	17.63	15.59	88.43	10.79	10.23	46.05
3	Co 07025	35.97	171.30	113.89	97.19	211.7	2.58	1.118	16.77	14.58	86.96	10.00	17.13	15.11	88.17	10.44	10.16	48.24
4	CoH 07261	56.25	154.63	122.41	105.96	230.7	3.05	1.605	16.63	14.53	87.31	9.99	17.70	15.58	88.03	10.75	11.40	51.72
5	CoLk 07201	27.22	135.19	112.04	94.04	193.3	2.71	0.985	16.80	14.71	87.54	10.12	17.60	15.56	88.38	10.76	10.11	46.29
	Standards																	
1	CoJ 64	39.03	150.93	115.74	70.88	196.3	2.51	0.877	18.57	16.34	88.02	11.28	19.07	16.74	87.80	11.54	8.16	49.18
2	CoPt 84211	35.97	162.96	126.30	79.30	214.3	2.30	0.980	18.01	15.94	88.50	11.03	18.67	16.54	88.61	11.45	9.07	45.59
	CD (5%)	5.32	15.98	16.20	16.31	33.1	0.23	0.162	0.68	0.66	NS	0.49	0.65	0.59	NS	0.43	1.87	3.95
	CV%	8.90	6.37	9.08	10.43	8.90	4.78	7.67	2.25	2.47	0.73	2.64	2.04	2.07	0.84	2.20	10.64	4.71

Table 5. Advanced Varietal Trial (Early) Ratoon 2012-13
Location–FARIDKOT (North West Zone) Design: RBD, Replications: 3
 Date of Ratooning: 01.02.2012, Plot Size: 8rows X 6m X 75cm

Sl.	Variety	No. of shoots 000/ha	NMC 000/ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt (Kg)	November (300 days)				CCS (t/ha)	Ext. (%)
								Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	Co 06032	119.81	67.59	47.41	180.67	2.61	0.798	19.10	17.09	89.18	12.06	5.71	49.31
2	Co 07023	232.59	108.33	67.78	193.00	2.72	0.827	18.77	16.88	90.31	11.73	7.95	46.00
3	Co 07025	206.30	121.67	83.70	183.33	2.52	0.767	18.40	16.57	90.43	11.71	9.80	46.39
4	CoH 07261	137.22	98.89	90.00	188.00	2.94	0.963	18.03	16.27	90.70	11.65	10.46	47.39
5	CoLk 07201	174.07	106.48	63.70	181.33	2.77	0.732	17.27	15.37	88.92	10.64	6.78	42.18
Standards													
1	CoJ 64	120.00	85.00	67.04	174.67	2.63	0.775	21.20	18.38	86.74	12.53	8.39	47.36
2	CoPt 84211	192.59	115.37	68.52	197.67	2.62	0.849	20.00	18.04	90.46	12.77	8.75	42.10
	CD (5%)	24.50	14.68	9.88	23.69	0.20	0.131	1.14	1.05	1.82	0.57	1.05	4.98
	CV%	9.09	9.21	8.28	7.42	4.19	8.87	3.41	3.51	1.18	2.76	7.35	6.06

5. Initial Varietal Trial (Mid late)

The experiment was conducted with eight entries and three checks viz; Co 09021, Co 09022, CoH 092654, CoLk 09204, CoPb 09214, CoS 09232, CoS 09240 checks- CoS 767, CoS 8436 and CoPant 97222 in RBD with three replications. Test entries CoH 09264 (113.33 t/ha & 12.50 t/ha), CoLk 09204 (99.65 t/ha & 11.28 t/ha) and CoPb 09214 (99.30 t/ha & 11.42 t/ha) were significantly superior to the best check CoS 767 (87.37 t/ha) in cane yield and CoPant 97222 (10.18 t/ha) in sugar yield (Table 6).

Conclusion: CoH 09264, CoLk 09204 and CoPb 09214 were found promising in cane and sugar yield.

6. Advanced Varietal Trial (Mid late) I Plant

The experiment was conducted with six entries and three checks viz; CoH 08262, CoH 08263, CoH 08264, CoPb 08217, CoS 08234, CoS 08235, checks- CoS 767, CoS 8436 and CoPant 97222 in RBD with three replications. Test entries CoPb 08217 (102.59 t/ha & 13.22 t/ha), CoH 08263 (104.07 t/ha & 12.65 t/ha) and CoS 08234 (98.52 t/ha & 11.71 t/ha) were significantly superior to the best check CoPant 97222 (87.41t/ha & 10.06 t/ha) in cane and sugar yield. Detailed data pertaining to yield and quality are presented in Table 7.

Conclusion: CoPb 08217 CoH 08263 and CoS 08234 were found promising in cane and sugar yield.

7. Advance Varietal Trial (Mid late) II Plant

The experiment was conducted with nine entries and three checks viz; Co 07028, CoH 07263, CoH 07264, CoLk 07202, CoLk 07203, CoPb 07212, CoPb 07213, CoS 07232, CoS 07234 checks- CoS 767, CoS 8436 and CoPant 97222 in RBD with three replications. Test entries CoPb 07212 (108.89 t/ha & 14.31 t/ha) and CoH 07264 (105.19 t/ha & 12.65 t/ha) were significantly superior to the best check CoPant 97222 (89.26 t/ha & 10.65 t/ha) in cane and sugar yield. Detailed data pertaining to yield and quality are presented in Table 8.

Conclusion: CoPb 07212 and CoH 07264 were found promising in cane and sugar yield.

8. Advanced Varietal Trial (Mid late) Ratoon

Nine entries viz; Co 07028, CoH 07263, CoH 07264, CoLk 07202, CoLk 07203, CoPb 07212, CoPb 07213, CoS 07232, CoS 07234 were tested for their ratooning ability against three checks viz; CoS 767, CoS 8436 and CoPt 97222 in RBD with three replications. Test entry CoPb 07213 (85.11 t/ha) was significantly superior to the best check CoS 767 (72.89 t/ha) in cane yield which was also at par in sugar yield (Table 9).

Conclusion: CoPb 07213 had good ratooning ability and found promising in cane and sugar yield.

Table 6. Initial Varietal Trial (Mid late) 2012-2013
Location – FARIDKOT (North West Zone)
Design: RBD, Replications: 3, Date of Planting: 03.2.2012, Plot Size: 6 rows X 6m

Sl.	Variety	Ger (%)	No. of shoots 000/ha	NMC 000/ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt (Kg)	January				March				CCS (t/ha)	Ext. (%)
									Brix (%)	Sucr. (%)	Purity (%)	CCS (%)	Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	Co 09021	34.72	212.22	116.30	97.54	217.3	2.78	1.29	16.00	13.76	85.98	9.39	17.53	15.34	87.38	10.60	10.34	48.85
2	Co 09022	33.33	220.22	128.15	96.49	225.0	2.43	0.97	17.40	15.03	86.34	10.28	18.73	16.49	87.94	11.37	10.97	48.44
3	Co H 09264	48.19	187.78	130.00	113.33	289.7	2.66	1.76	17.30	15.11	87.33	10.39	18.17	16.00	88.11	11.03	12.50	51.13
4	CoLk 09204	24.58	202.00	104.07	99.65	232.0	2.40	1.05	17.37	15.20	87.54	10.47	18.50	16.31	88.15	11.33	11.28	47.88
5	CoPb 09214	35.14	217.78	118.89	99.30	233.0	2.39	0.94	18.13	15.90	87.68	10.96	19.57	16.99	87.61	11.52	11.42	45.08
6	CoS 09231	36.39	227.11	102.04	89.47	204.0	2.47	1.06	17.23	15.18	88.09	10.49	17.77	15.62	88.17	10.86	9.71	47.09
7	CoS 09232	31.81	245.56	105.93	90.88	222.7	2.58	1.26	18.27	16.09	88.10	11.11	19.13	16.92	88.34	11.75	10.69	48.64
8	CoS 09240	20.00	160.67	86.11	79.65	189.3	3.13	1.44	17.80	15.70	88.14	10.84	18.17	16.05	88.31	11.02	8.78	45.60
Standards																		
1	CoS 767	34.58	206.44	118.70	87.37	226.0	2.18	0.89	17.27	14.92	86.41	10.21	18.67	16.51	88.33	11.45	10.01	50.11
2	CoS 8436	28.89	218.44	99.63	69.12	184.3	2.39	1.09	17.83	15.70	88.04	10.84	19.40	17.21	88.58	11.98	8.28	44.27
3	CoPt 97222	37.22	192.67	116.48	86.67	224.7	2.66	1.24	17.70	15.55	87.87	10.73	19.07	16.95	88.78	11.75	10.18	50.52
	CD (5%)	5.20	18.33	9.02	9.63	16.01	0.22	0.16	1.15	1.19	1.30	0.88	0.95	0.72	NS	0.37	1.07	3.39
	CV %	9.29	5.16	4.76	6.25	4.24	5.05	8.09	3.85	4.54	0.88	4.90	3.00	2.55	0.52	1.93	6.06	4.18

**Table 7. Advanced Varietal Trial (Mid late) I Plant 2012-2013
Location–FARIDKOT (North West Zone) Design: RBD, Replications: 3,
Date of Planting: 06.02.2012, Plot Size: 8 rows X 6m**

Sl.	Variety	Ger (%)	No. of shoots 000/ha	NMC 000/ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt (Kg)	January				March				CCS (t/ha)	Ext. (%)
									Brix (%)	Sucr. (%)	Purity (%)	CCS (%)	Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	CoH 08262	26.53	167.78	79.81	87.22	243.3	2.73	1.50	16.97	14.80	87.22	10.17	18.50	16.40	88.64	11.44	9.98	47.98
2	CoH 08263	37.64	218.89	112.04	104.07	224.0	2.69	1.37	19.10	16.72	87.51	11.51	19.60	17.25	87.99	12.16	12.65	55.10
3	CoH 08264	26.94	198.22	99.63	96.67	208.7	2.80	1.20	18.67	16.47	88.21	11.38	18.37	16.33	88.89	11.28	10.90	54.55
4	CoPb 08217	30.00	228.89	125.37	102.59	238.7	2.69	1.46	19.50	17.04	87.43	11.72	20.90	18.62	89.09	12.89	13.22	52.08
5	CoS 08234	31.94	283.11	121.85	98.52	217.0	2.63	1.15	19.20	16.85	87.78	11.62	19.43	17.30	89.00	11.89	11.71	53.45
6	CoS 08235	26.25	191.11	78.89	71.48	241.7	2.81	1.19	18.90	16.68	88.27	11.53	19.23	17.01	88.46	11.85	8.46	49.07
Standards																		
1	CoS 767	36.94	184.44	112.78	80.93	234.0	2.32	1.07	18.37	16.19	88.16	11.19	18.57	16.47	88.67	11.46	9.24	51.23
2	CoS 8436	39.72	172.22	105.56	62.96	198.7	2.80	1.08	19.07	16.63	87.24	11.43	18.97	16.88	88.97	11.68	7.35	52.28
3	CoPt 97222	42.08	210.22	117.41	87.41	243.0	2.66	1.33	18.77	16.46	87.74	11.35	18.97	16.68	87.95	11.51	10.06	53.66
	CD (5%)	6.23	30.83	12.19	8.76	20.58	0.17	0.17	0.93	0.84	NS	0.62	1.05	1.02	NS	0.56	0.90	4.01
	CV %	10.88	8.64	6.65	5.75	5.22	3.76	7.75	2.85	2.97	1.09	3.17	3.18	3.46	0.79	2.74	5.00	4.44

**Table 8. Advanced Varietal Trial (Mid late) II Plant 2012-2013
Location–FARIDKOT (North West Zone) Design: RBD, Replications: 3,
Date of Planting: 27.2.2012, Plot Size: 8 rows X 6m**

Sl.	Variety	Ger (%)	No. of shoots 000/ha	NMC 000/ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt (Kg)	January				March				CCS (t/ha)	Ext. (%)
									Brix (%)	Sucr. (%)	Purity (%)	CCS (%)	Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	Co 07028	40.97	215.56	140.93	100.74	243.7	2.25	1.01	18.97	16.78	88.45	11.61	19.47	17.36	89.20	12.22	12.29	49.45
2	CoH 07263	44.79	231.11	121.85	98.52	243.3	2.96	1.55	16.57	14.37	86.72	9.85	17.27	15.11	87.47	10.46	10.28	49.69
3	CoH 07264	38.31	193.33	96.67	105.19	276.0	2.74	1.58	18.80	16.42	87.33	11.29	19.40	17.13	88.33	11.99	12.65	48.72
4	CoLk 07202	40.05	273.78	115.74	98.89	248.7	2.47	1.17	16.77	14.70	87.67	10.13	17.33	15.25	87.98	10.46	10.34	49.81
5	CoLk 07203	29.98	220.89	127.04	96.67	238.0	2.37	0.96	17.60	15.41	87.56	10.61	19.10	16.90	88.47	11.80	11.40	47.35
6	CoPb 07212	46.53	239.33	139.81	108.89	220.7	2.81	1.25	18.90	16.79	88.81	11.64	21.07	18.81	89.26	13.15	14.31	50.81
7	CoPb 07213	49.88	253.33	170.74	99.26	212.3	2.25	0.84	18.00	15.84	87.99	10.93	18.50	16.40	88.64	11.18	11.10	47.81
8	CoS 07232	42.71	252.22	131.48	100.00	229.0	2.41	1.01	17.73	15.67	88.36	10.84	18.43	16.34	88.63	11.33	11.33	49.24
9	CoS 07234	35.30	200.00	130.00	76.67	210.0	2.38	0.90	18.67	16.36	87.65	11.27	18.60	16.54	88.94	11.52	8.83	46.61
Standards																		
1	CoS 767	34.95	226.00	128.33	87.78	241.7	2.48	1.06	18.53	16.22	87.52	11.16	18.53	16.49	88.96	11.34	9.95	52.18
2	CoS 8436	35.19	216.67	109.63	75.93	160.0	2.81	0.98	18.73	16.48	87.96	11.37	19.53	17.37	88.91	11.99	9.10	48.54
3	CoPt 97222	39.47	200.22	113.70	89.26	224.3	2.49	1.02	18.83	16.72	88.75	11.59	19.20	17.11	89.12	11.92	10.65	51.07
	CD (5%)	4.74	21.46	16.18	13.94	20.37	0.24	0.22	0.98	0.91	NS	0.66	1.15	1.09	NS	0.65	1.70	2.80
	CV %	7.04	5.60	7.53	8.70	5.26	5.63	11.68	3.21	3.39	0.89	3.56	3.61	3.84	0.76	3.32	9.14	3.36

**Table 9. Advanced Varietal Trial (Mid late) Ratoon 2012-2013
Location–FARIDKOT (North West Zone) Design: RBD, Replications: 3
Date of Ratooning: 04.3.2012, Plot Size: 8rows X 6m**

Sl.	Variety	No. of shoots 000/ha	NMC 000/ha	Cane yield t/ha	Stalk length (cm)	Stalk dia. (cm)	Single Cane wt (Kg)	January (330 days)				CCS (t/ha)	Ext. (%)
								Brix (%)	Sucr. (%)	Purity (%)	CCS (%)		
1	Co 07028	194.44	124.00	72.22	179.3	2.50	0.74	20.35	18.10	89.06	12.65	9.14	54.70
2	CoH 07263	234.89	116.22	75.56	181.7	2.81	0.93	17.56	15.18	86.67	10.29	7.78	48.56
3	CoH 07264	221.33	114.44	76.67	187.7	3.04	1.09	18.63	16.33	87.66	11.37	8.71	52.75
4	CoLk 07202	195.33	122.22	73.56	208.0	2.68	0.91	19.62	17.49	89.21	12.12	8.91	55.39
5	CoLk 07203	222.00	147.78	70.00	199.3	2.46	0.75	19.65	17.47	88.47	12.07	8.47	53.14
6	CoPb 07212	238.89	138.89	71.11	169.0	2.94	0.94	21.05	18.76	88.75	12.93	9.19	54.98
7	CoPb 07213	251.33	148.89	85.11	199.3	2.69	0.81	19.36	16.82	86.19	11.37	9.70	55.42
8	CoS 07232	185.11	153.33	61.56	158.7	2.58	0.65	18.66	16.30	86.92	10.94	6.73	54.30
9	CoS 07234	226.89	135.33	76.67	186.7	2.64	0.84	20.20	17.94	89.06	12.42	9.51	53.63
Standards													
1	CoS 767	250.44	142.67	72.89	183.0	2.61	0.77	19.69	17.51	88.60	12.24	8.92	57.64
2	CoS 8436	133.56	84.44	61.78	116.0	3.10	0.78	20.39	18.13	88.93	12.63	7.83	52.75
3	CoPt 97222	184.67	133.56	70.00	162.3	2.70	0.85	19.65	17.78	90.45	12.70	8.88	58.17
	CD (5%)	29.39	19.00	11.95	28.53	0.26	0.18	1.29	1.17	2.09	0.63	1.62	4.02
	CV %	8.22	8.64	9.79	9.51	5.56	12.69	3.89	4.01	1.40	3.11	11.07	4.38

B. FLUFF SUPPLY PROGRAMME

1572.5 g fluff obtained from 23 Bi- parental crosses, 9 Zonal Crosses, 6 Poly Crosses and 35 GC's attempted at NHG Coimbatore and 8 Bi- parental crosses of introgressed clones at National Distant Hybridization facility (SBI Research centre) during November 2012. The fluff has been stored at -20°C and seedlings will be raised in September 2013.

Seedling raised from fluff received during February 2012

Date of fluff sowing: 8.11. 12

Date of seedling transplanted: 25.3.2013

Bi-parental crosses

Sr	Cross	fluff(g)	Seedlings
1	ISH 100 X Co 86011	18.29	177
2	Co 87272 X CoJ 46	6.81	41
3	CoLk 8102 XCo 86002	21.12	182
4	CoS 96275 X Co 86002	13.89	128
5	Co 0240 X CoJ 46	15.8	147
6	CoJ 72 X Co 62198	10.85	38
7	Co 0238 X Co 510	13.9	75
8	BO 91 x Co 453	15.3	245
9	Co 88 X CoSe 92423	20.85	15
10	Co 88039 X CoS 510	15.53	41
11	ISH 100 X Co 94008	25.72	72
12	ISH 100 X Co 86001	29.57	177
13	ISH 100 X Co 8213	28.5	162
14	NB 94-545 X Co 1148	55.59	374
15	CP 52-1 X CoSe 92423	21.17	81
16	CoJ 65 X Co 1148	21.5	123
17	CoJ 88 X ISH 176	18.27	149
18	CoA 7602 X CoSe 92423	12.53	68
19	Co 8213 x CoSe 92423	30.28	131
20	Co 8213 X Co 62198	24.7	170
21	CoJ 88 X Co 62198	24.05	90
22	CoJ 64 X Co 62198	6.3	63
23	CoJ 88 x Co 1148	9.91	83
	Sub-Total	460.43	2826

Zonal Crosses

1	BO 91 X Co 453	6.75	66
2	Co 0238 X CoSe 92423	7.4	53
3	CoS 8436 X Co 89003	7.7	90
4	LG 95053 X BO 91	6.39	23
5	CoS 8436 X CoPt 97222	11.37	38
6	Co 98010 X Co 775	3.45	93

7	Co7201 PC	5.65	233
8	Co 7314 X Co 1148	5.27	33
9	MS 6847 X Co V92102	6.53	108
	Sub-Total	60.51	735
Poly Crosses			
1	CoS 8436	14.35	18
2	Co 7201	9.1	110
3	CoSe 92423	18.75	179
4	81V 48	7.2	306
5	CoSe 95422	7.9	162
6	CoJ 99192	8.65	27
7	CoJ 83	11	50
8	ISH 100	8.7	54
	Sub- Total	85.65	905
General collection			
1	Co 1148	65.5	338
2	CoLk 8102	23.34	102
3	CoJ 64	2.9	124
4	Co 88039	6.74	148
5	CoS 97261	32.41	168
6	Co 89003	18.6	538
7	CoH 110	9.68	66
8	CoS 8436	26.7	144
9	SP 80-185	34.8	20
10	CoJ 88	22.05	204
11	CoJ 82191	8.65	20
12	BO 91	14.09	1014
13	CoS 96275	12.11	24
14	CoPt 90223	13.39	32
15	Co 0238	23.69	20
16	ISH 100	14.71	20
17	CoSe 92423	28.49	278
18	CoJ 65	32.2	20
19	CoA 7602	10.88	42
20	CoPt 90224	42.22	484
21	CoSe 95422	34.5	20
22	CoS 97261	5.25	104
23	Co 8213	18.17	214
24	Co 0240	6.6	44
25	Co 87272	15.63	20
26	ISH 100	10.8	62
27	CoH 119	27.93	160
28	NB 94-545	83.16	20
	Sub-Total	645.19	4450
68	Grand Total	1251.78	8916

Year wise progress of fluff supply programme

Sl	Year	Cross	GC	ZC+ PC	Seedlings Raised	Present Stage				
						CI	CII	CIII	PVT	MLT
1	2012-13	31	35	9+6	Stored	-	--	60	9	2
2	2011-12	23	28	9+8	8,916	1183	147	43	26	2
3	2010-11	24	16	10+7	11,441	909	124	35	12	3
4	2009-10	25	23	6+8	7,786	803	84	26	10	1
5	2008-09	28	20	10+3	10,026	1161	202	31	17	--
6	2007-08	13	47	9+2	9,376	1500	70	48	--	--
7	2006-07	39	25	8+3	2,385	742	242	--	--	--
8	2005-06	24	38	3	871	4772	--	--	--	--
9	2004-05	25	43	-	6,312	--	--	--	--	--

The Faridkot centre contributed eight clones viz; CoPb 09181, CoPb 10181, CoPb 10182, CoPb 10183, CoPb 11181, CoPb 11182, CoPb12181 and CoPb 12182 for testing in Zonal Varietal Trials of North West Zone. These improved clones have also been included as parental stock in National Hybridization Garden.