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KERALA AGRICULTURAL UNIVERSITY
Agricultural Research Station, Kallungal .P.O., Thiruvalla 689 102

No. SRS II/287/07

Dated: 20.06.2016

From,

Professor and Head

To,

Dr. Bakshi Ram
Director,
ICAR-Sugarcane Breeding Institute,
and
Principal Investigator (crop Improvement),
AICRP on Sugarcane,
ICAR-Sugarcane Breeding Institute,
Coimbatore - 641007.

Sir,

Sub: - KAU-SRS- Thiruvalla- Crop Improvement Data for the year 2015-16-
forwarding- reg

I am forwarding herewith the statistically analyzed Crop Improvement Data for the year 2015-16 for necessary action. Delay in submitting the data may kindly be excused.

Yours faithfully

Sd/-

Professor and Head

KERALA AGRICULTURAL UNIVERSITY
Agricultural Research Station
All India Coordinated Research Project on Sugarcane

Annual Report 2015 - 2016

- 1. Title** : Initial Varietal Trial – Early
2. Principal Investigator : Dr. Shajan, V.R., Associate Professor (Plant Breeding)
3. Associates : Sri. Jayakumar, G., Assistant Professor (Agronomy)
: Dr. Surendran, M., Assistant Professor (Plant Pathology)
4. Technical Programme :

- Entries (12) : Co 12001, Co 12003, Co 12006, Co 12007, Co 12008,
CoM 12081, CoM 12082, CoM 12083, CoN 12071,
CoN 12072, CoT 12366 and CoT 12367
- Standards (3) : Co 85004, Co 94008 and CoC 671
- Design : Randomized Block Design
- Replications : Two
- Plot size : Gross: 6m x 6r x 1.2 m
Net : 5m x 4r x 1.2 m
- Seed rate : 12 buds per metre
- Planting date : 05/01/2015
- Crop duration : 10 months

Results:

CCS (t/ha): Clone Co 12006 (7.45 t/ha) recorded highest CCS (t/ha) among the entries followed by CoN 12071 (6.81 t/ha), CoT 12367 (6.67 t/ha), CoM 12082 (5.87 t/ha), Co 12007 (5.53 t/ha) and CoT 12366 (5.53 t/ha) and on par with best standard Co 85004 (6.15t/ha)

Cane yield (t/ha): Clone Co 12006 (58.75 t/ha) recorded highest cane yield (t/ha) among the entries followed by CoN 12071 (56.25 t/ha), CoT 12367 (51.67 t/ha), CoM 12082 (51.25 t/ha), Co 12007 (44.17 t/ha), CoT 12366 (43.06 t/ha), Co 12003 (40.00 t/ha), CoN 12072 (39.72t/ha) and Co 12008 (37.36 t/ha) and on par with best standard Co 85004 (48.33 t/ha)

CCS % (10m): Clone CoT 12366 (12.88) recorded highest CCS % (10m) among the entries followed by CoT 12367 (12.80), Co 12006 (12.68), Co 12007 (12.51) and CoM 12083 (12.44) ad on par with best standard CoC 671(12.91)

Sucrose % (10m): Clone CoT 12366 (18.62) recorded highest sucrose % (10m) among the entries followed by CoT 12367 (18.52), Co 12006 (18.29), Co 12007 (18.07), CoM 12083 (17.96) and CoN 12071(17.51) and on par with best standard CoC 671 (18.63)

Brix % (10 m): Clone CoT 12366 (21.05) recorded highest brix % (10 m) among the entries followed by CoT 12367 (20.95), Co 12006 (20.60), Co 12007 (20.40), CoM 12083 (20.25), CoN 12071 (19.80) and Co 12008 (19.65) and on par with best standard CoC 671 (21.00)

Remarks:

The trial was severally affected by root grub and sheath and shoot rot

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

1. Initial Varietal Trial (Early)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	CCS % (10m)	Sucrose % (10m)	Brix % (10 m)	Purity % (10m)	Pol % cane (10m)	Fibre % (10m)	Extracti on % (10m)	NMC at 10m ('000/ha)
1	Co 12001	4.14	36.11	11.49	16.52	18.45	88.60			57.62	37.36
2	Co 12003	4.83	40.00	12.03	17.30	19.35	88.55			62.16	45.56
3	Co 12006	7.45	58.75	12.68	18.29	20.60	88.00			53.37	71.11
4	Co 12007	5.53	44.17	12.51	18.07	20.40	87.80			54.65	52.08
5	Co 12008	4.53	37.36	12.05	17.40	19.65	87.75			58.09	40.84
6	CoM 12081	3.77	32.78	11.49	16.52	18.45	88.60			60.86	38.89
7	CoM 12082	5.87	51.25	11.47	16.61	18.85	87.30			54.95	52.08
8	CoM 12083	4.34	35.00	12.44	17.96	20.25	87.90			62.05	37.08
9	CoN 12071	6.81	56.25	12.11	17.51	19.80	87.60			59.87	58.48
10	CoN 12072	4.41	39.72	11.07	15.95	17.90	88.20			56.91	43.89
11	CoT 12366	5.53	43.06	12.88	18.62	21.05	87.65			59.20	46.53
12	CoT 12367	6.67	51.67	12.80	18.52	20.95	87.60			57.91	54.86
Stds											
1	CoC 671	3.92	30.28	12.91	18.63	21.00	87.95			61.14	33.06
2	Co 94008	4.77	40.56	11.74	16.95	19.15	87.70			59.41	49.72
3	Co 85004	6.15	48.33	12.71	18.39	20.85	87.40			51.91	54.31
	SE	0.572	4.243	0.297	0.419	0.474	0.576			1.754	4.115
	CD (0.05%)	1.626	12.060	0.845	1.192	1.346	NS			4.987	11.698
	CV	15.418	13.948	3.457	3.379	3.385	0.926			4.277	12.195

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	CCS % (8 m)	Sucrose % (8 m)	Brix % (8 m)	Purity % (8 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 12001	203	2.7	1.257	9.10	13.07	14.6	88.45	34.45	34.59	37.92
2	Co 12003	214	3.0	1.489	9.12	13.18	14.9	87.35	42.92	41.67	57.09
3	Co 12006	228	2.3	1.109	9.71	14.00	15.8	87.85	62.78	65.70	69.58
4	Co 12007	228	2.6	1.131	9.61	13.88	15.7	87.65	43.06	41.81	68.89
5	Co 12008	220	2.8	1.362	9.28	13.41	15.2	87.40	28.89	29.73	41.53
6	CoM 12081	263	3.0	1.585	9.05	13.06	14.7	87.75	30.14	35.56	41.39
7	CoM 12082	289	2.7	1.571	8.47	12.25	13.9	87.20	43.89	45.00	56.25
8	CoM 12083	211	2.8	1.292	9.60	13.86	15.7	87.55	31.95	33.06	50.00
9	CoN 12071	249	3.0	1.630	9.94	14.34	16.2	87.80	55.84	55.14	70.28
10	CoN 12072	196	2.7	1.282	8.41	12.11	13.6	87.85	39.31	41.39	54.59
11	CoT 12366	250	2.9	1.650	10.57	15.26	17.2	87.75	34.45	41.11	50.14
12	CoT 12367	234	3.0	1.570	10.31	14.91	16.9	87.35	49.73	54.31	59.03
Stds											
1	CoC 671	222	2.9	1.522	10.51	15.14	17.0	88.15	25.00	25.70	52.50
2	Co 94008	246	2.6	1.356	9.63	13.87	15.6	88.10	43.47	53.34	61.39
3	Co 85004	205	2.5	1.107	9.86	14.22	16.0	87.90	44.72	58.20	82.78
	SE	10.099	0.084	0.070	0.380	0.528	0.562	0.617	4.503	3.300	3.790
	CD (0.05%)	28.706	0.239	0.198	1.080	1.502	1.597	NS	12.801	9.381	10.774
	CV	6.202	4.296	7.062	5.631	5.426	5.123	0.994	15.646	10.668	9.422

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Annual Report 2015 - 2016

1. **Title** : Advanced Varietal Trial (Early I Plant)
2. **Principal Investigator** : Dr. Shajan, V.R., Associate Professor (Plant Breeding)
3. **Associates** : Sri. Jayakumar, G., Assistant Professor (Agronomy)
: Dr. Surendran, M., Assistant Professor (Plant Pathology)

4. **Technical Programme** :

- Entries (8) : Co 10004, Co 10005, Co 10006, Co 10024, Co 10026, Co 10027,
CoT 10366 and CoT 10367
- Standards (3) : Co 85004, Co 94008 and CoC 671
- Design : Randomized Block Design
- Replications : Three
- Plot size : Gross: 6m x 8r x 1.2 m
Net : 5m x 6r x 1.2 m
- Seed rate : 12 buds per metre
- Planting date : 09/01/2015
- Crop duration : 10 months

Results:

CCS (t/ha): Highest CCS (t/ha) was recorded by clone Co 10026 (8.72) and on par with best standard CoC 671 (9.45)

Cane yield (t/ha): Highest cane yield (t/ha) was recorded by clone Co 10026 (68.33) and on par with best standard CoC 671 (78.08)

CCS % (10m): Among the entries, highest CCS% (10 month) was recorded by CoT 10367 (13.38) followed by Co 10026 (12.80), Co 10004 (12.51), Co 10027 (12.48) and Co 10005 (12.26) and on par with best standard CoC 671 (13.10)

Sucrose % (10m): Among the entries, highest sucrose % (10 month) was recorded by CoT 10367 (19.19) followed by Co 10026 (18.38), Co 10004 (17.93), Co 10027 (17.86) and Co 10005 (17.57) and on par with best standard CoC 671 (18.82)

Brix % (10 m): Among the entries, highest brix % (10 month) was recorded by CoT 10367 (21.3) followed by Co 10026 (20.5), Co 10004 (19.9), Co 10027 (19.8) and Co 10005 (19.5) and on par with best standard CoC 671 (21.0)

Remarks:

The trial was severally affected by root grub and sheath and shoot rot

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

1. Advanced Varietal Trial (Early I Plant)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	CCS % (10m)	Sucrose % (10m)	Brix % (10 m)	Purity % (10m)	Pol % cane (10m)	Fibre % (10m)	Extraction % (10m)	NMC at 10m ('000/ha)
1	Co 10004	5.12	40.97	12.51	17.93	19.9	89.13			60.66	39.16
2	Co 10005	7.04	57.36	12.26	17.57	19.5	89.30			62.85	61.66
3	Co 10006	5.84	55.62	10.47	15.00	16.7	89.03			59.94	56.59
4	Co 10024	5.49	50.42	11.12	15.97	17.8	88.77			60.89	52.01
5	Co 10026	8.72	68.33	12.80	18.38	20.5	88.87			63.18	68.61
6	Co 10027	5.30	42.36	12.48	17.86	19.8	89.57			62.98	40.49
7	CoT 10366	5.28	46.18	11.42	16.39	18.2	89.00			59.13	45.83
8	CoT 10367	5.00	37.36	13.38	19.19	21.3	89.17			58.62	36.46
Stds											
1	CoC 671	9.45	72.08	13.10	18.82	21.0	88.87			60.87	72.43
2	Co 94008	6.22	56.46	10.99	15.75	17.5	89.07			54.83	58.89
3	Co 85004	4.68	41.52	11.23	16.13	18.0	88.70			60.90	44.51
	SE	0.399	3.078	0.532	0.749	0.806	0.413			1.265	3.372
	CD (0.05%)	1.135	8.749	1.512	2.130	2.292	NS			3.595	9.586
	CV	11.163	10.312	7.690	7.554	7.308	0.803			3.625	11.143

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	CCS % (8 m)	Sucrose % (8 m)	Brix % (8 m)	Purity % (8 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 10004	279	2.8	1.784	10.70	15.43	17.4	87.93	36.80	38.54	38.66
2	Co 10005	267	2.7	1.567	10.34	14.91	16.8	87.93	55.97	55.90	43.87
3	Co 10006	231	2.4	1.297	7.90	11.43	12.9	87.13	48.96	51.81	53.30
4	Co 10024	253	2.9	1.695	9.05	13.06	14.7	87.57	44.93	48.82	50.41
5	Co 10026	255	2.5	1.488	10.78	15.52	17.4	88.13	62.15	60.48	55.03
6	Co 10027	252	3.0	2.010	9.63	13.91	15.7	87.60	36.04	47.85	43.58
7	CoT 10366	243	3.0	1.699	9.02	12.99	14.6	88.10	42.01	35.76	41.49
8	CoT 10367	246	3.0	1.863	11.22	16.19	18.3	87.80	34.72	42.64	32.52
Stds											
1	CoC 671	255	2.8	1.790	10.90	15.74	17.8	87.77	74.72	37.98	39.12
2	Co 94008	245	2.7	1.359	8.82	12.68	14.2	88.40	54.30	59.17	45.54
3	Co 85004	215	2.4	1.140	8.83	12.68	14.2	88.40	35.90	74.86	34.55
	SE	6.680	0.098	0.080	0.410	0.597	0.688	0.286	4.209	3.798	2.415
	CD (0.05%)	18.989	0.279	0.228	1.165	1.696	1.955	NS	11.963	10.797	6.864
	CV	4.643	6.195	8.646	7.282	7.353	7.536	0.564	15.230	13.067	9.623

KERALA AGRICULTURAL UNIVERSITY
Agricultural Research Station
All India Coordinated Research Project on Sugarcane

Annual Report 2015 - 2016

1. **Title** Advanced Varietal Trial (Early II Plant)
2. **Principal Investigator** : Dr. Shajan, V.R., Associate Professor (Plant Breeding)
3. **Associates** : Sri. Jayakumar, G., Assistant Professor (Agronomy)
 : Dr. Surendran, M., Assistant Professor (Plant Pathology)
4. **Technical Programme** :

Entries (3) : Co 09004, Co 09007 and CoN 09072
Standards (3) : Co 85004, Co 94008 and CoC 671
Design : Randomized Block Design
Replications : Four
Plot size : Gross: 6m x 8r x 1.2 m
 : Net : 5m x 6r x 1.2 m
Seed rate : 12 buds per metre
Planting date : 08/01/2015
Crop duration : 10 months

Results:

CCS (t/ha): Highest CCS (t/ha) was recorded by clone Co 09004 (13.89) followed by CoN 09072 (12.77) and on par with best standard Co 85004 (12.35)

Cane yield (t/ha): Highest cane yield (t/ha) was recorded by clone Co 09004 (105.63) followed by CoN 09072 (96.14) and on par with best standard Co 85004 (96.58)

CCS % (10m): Highest CCS% (10 month) was recorded by clone CoN 09072 (13.31) followed by Co 09004 (13.15) and on par with best standard Co 85004 (12.77)

Sucrose % (10m): Highest sucrose % (10 month) was recorded by clone CoN 09072 (19.08) followed by Co 09004 (18.87) and on par with best standard Co 85004 (18.81)

Brix % (10 m): Highest brix % (10 month) was recorded by clone CoN 09072 (21.20) followed by Co 09004 (21.03) and on par with best standard Co 85004 (20.35)

Remarks: Nil

Sd/-

Sd/-

Signature of the Principal Investigator

Signature of the head of station

1. Advanced Varietal Trial (Early II Plant)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	CCS % (10m)	Sucrose % (10m)	Brix % (10 m)	Purity % (10m)	Pol % cane (10m)	Fibre % (10m)	Extraction % (10m)	NMC at 10m ('000/ha)
1	Co 09004	13.89	105.63	13.15	18.87	21.03	89.0			63.02	89.79
2	Co 09007	8.37	74.75	11.22	16.06	17.80	89.3			62.97	71.77
3	CoN 09072	12.77	96.14	13.31	19.08	21.20	89.3			59.93	97.45
Stds											
1	CoC 671	9.05	73.89	12.29	17.63	19.63	89.0			61.31	62.03
2	Co 94008	8.72	78.58	11.22	16.10	17.93	88.9			59.41	78.44
3	Co 85004	12.35	96.58	12.77	18.31	20.35	89.1			57.70	104.01
	SE	0.436	3.659	0.500	0.716	0.800	0.310			1.297	4.566
	CD (0.05%)	1.238	10.400	1.422	2.036	2.273	NS			NS	12.979
	CV	8.020	8.354	8.120	8.106	8.136	0.696			4.271	10.883

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	CCS % (8 m)	Sucrose % (8 m)	Brix % (8 m)	Purity % (8 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 09004	307	2.7	1.968	10.21	14.74	16.6	87.83	85.00	78.02	78.47
2	Co 09007	289	3.1	2.157	8.27	11.95	13.5	87.48	68.08	65.42	65.89
3	CoN 09072	305	2.7	1.750	10.12	14.56	16.3	88.30	88.33	83.96	81.77
Stds											
1	CoC 671	287	3.1	2.123	8.86	12.76	14.3	88.13	60.68	60.42	60.59
2	Co 94008	300	2.7	1.792	8.14	11.77	13.3	87.28	82.24	78.02	70.70
3	Co 85004	256	2.1	1.295	10.22	14.75	16.6	87.80	103.65	93.13	83.94
	SE	7.331	0.108	0.065	0.279	0.400	0.456	0.370	2.804	1.946	2.263
	CD (0.05%)	20.840	0.307	0.186	0.792	1.138	1.296	NS	7.971	5.531	6.433
	CV	5.048	7.952	7.067	5.988	5.967	6.038	0.842	6.896	5.088	6.153

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All India Coordinated Research Project on Sugarcane

Annual Report 2015 - 2016

1. **Title** : Advanced Varietal Trial (Early - Ratoon)
2. **Principal Investigator** : Dr. Shajan, V.R., Associate Professor (Plant Breeding)
3. **Associates** : Sri. Jayakumar, G., Assistant Professor (Agronomy)
: Dr. Surendran, M., Assistant Professor (Plant Pathology)
4. **Technical Programme** :

Advanced Varietal Trial (Early) – Ratoon

- Entries (3) : Co 09004, Co 09007 and CoN 09072
Standards (3) : Co 85004, Co 94008 and CoC 671
Design : Randomized Block Design
Replications : Four
Plot size : Gross: 6m x 8r x 1.2 m
Net : 5m x 6r x 1.2 m
Seed rate : 12 buds per metre
Ratooning date : After harvest of AVT – I Plant
Crop duration : 9 months

Results:

CCS (t/ha): Highest CCS (t/ha) was recorded by clone CoN 09072 (10.44) and on par with best standard Co 85004 (10.43)

Cane yield (t/ha): Among entries, highest cane yield (t/ha) was recorded by clone CoN 09072 (78.65) and on par with best standard Co 85004 (80.00)

CCS % (10m): Highest CCS% (10 month) was recorded by clone Co 09004 (13.35) followed by CoN 09072 (13.27) and on par with best standard Co 85004 (13.07)

Sucrose % (10m): Highest sucrose % (10 month) was recorded by clone Co 09004 (19.14) followed by CoN 09072 (19.03.87) and on par with best standard Co 85004 (18.81)

Brix % (10 m): Highest brix % (10 month) was recorded by clone Co 09004 (21.3) followed by CoN 09072 (21.2) and on par with best standard Co 85004 (21.1)

Remarks: Nil

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

1. Advanced Varietal Trial (Early - Ratoon)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	CCS % (9m)	Sucrose % (9m)	Brix % (9 m)	Purity % (9m)	Pol % cane (9m)	Fibre % (9m)	Extraction % (9m)	NMC at ('000/ha) (9m)
1	Co 09004	8.02	60.10	13.35	19.14	21.3	89.30			56.44	67.14
2	Co 09007	6.37	57.14	11.12	15.95	17.8	88.95			58.54	59.90
3	CoN 09072	10.44	78.65	13.27	19.03	21.2	89.18			55.84	85.21
Stds											
1	CoC 671	9.36	71.82	13.03	18.69	20.8	89.10			57.95	74.32
2	Co 94008	7.40	60.31	12.28	17.59	19.5	89.38			58.09	64.17
3	Co 85004	10.43	80.00	13.07	18.81	21.1	88.50			57.69	88.07
	SE	0.450	3.509	0.266	0.372	0.419	0.545			1.115	3.530
	CD (0.05%)	1.278	9.975	0.757	1.057	1.192	NS			NS	10.034
	CV	10.373	10.320	4.196	4.086	4.141	1.223			3.884	9.654

S. No.	Clone	Stalk Length (m)	Stalk Diameter (cm)	Single cane weight (kg)	No. of tillers ('000/ha) 120 days	No. of tillers ('000/ha) 90 days
1	Co 09004	261	2.8	1.258	61.82	62.76
2	Co 09007	269	3.1	1.618	55.21	55.63
3	CoN 09072	261	2.8	1.306	80.47	77.81
Stds						
1	CoC 671	256	3.0	1.486	71.56	69.64
2	Co 94008	280	3.0	1.509	62.60	63.49
3	Co 85004	254	2.8	1.280	88.07	86.25
	SE	5.499	0.073	0.056	4.899	4.699
	CD (0.05%)	15.632	0.206	0.158	13.926	13.356
	CV	4.175	4.983	7.893	13.923	11.601

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Annual Report 2015 - 2016

- 1. Title** : Initial Varietal Trial (Midlate)
2. Principal Investigator : Dr. Shajan, V.R., Associate Professor (Plant Breeding)
3. Associates : Sri. Jayakumar, G., Assistant Professor (Agronomy)
: Dr. Surendran, M., Assistant Professor (Plant Pathology)

4. Technical Programme :

- Midlate (15) : Co 12009, Co 12012, Co 12014, Co 12016, Co 12017, Co 12019,
Co 12021, Co 12024, CoM 12084, CoM 12085, CoM 12086,
CoN 12073, CoN 12074, CoT 12368 and VSI 12121.
- Standards (2) : Co 86032 and Co 99004
- Design : Randomized Block Design
- Replications : Two
- Plot size : Gross: 6m x 6r x 1.2 m
Net : 5m x 4r x 1.2 m
- Seed rate : 12 buds per metre
- Planting date : 05/01/2015
- Crop duration : 12 months

Results:

CCS (t/ha): Among entries, highest CCS (t/ha) was recorded by clone Co 12021 (9.31), VSI 12121 (8.49), Co 12009 (7.49), Co 12016 (7.47) and CoT 12368 (7.38) on par with best standard Co 99004 (9.54)

Cane yield (t/ha): Among entries, highest cane yield (t/ha) was recorded by clone Co 12021 (73.47) and on par with best standard Co 99004 (80.14)

CCS % (10m): All the entries were on par with best standard Co 86032 for CCS% (10 month)

Sucrose % (10m): No significant difference were observed among the entries and standards

Brix % (10 m): No significant difference were observed among the entries and standards

Remarks:

The trial was severally affected by root grub and sheath and shoot rot

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

5. Initial Varietal Trial (Midlate)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	CCS % (12m)	Sucrose % (12m)	Brix % (12m)	Purity % (12m)	Pol % cane (12m)	Fibre % (12m)	Extraction % (12m)	NMC at 12m ('000/ha)
1	Co 12009	7.49	57.08	13.12	18.76	20.75	89.65			61.54	60.14
2	Co 12012	6.33	49.03	12.81	18.32	20.25	89.65			57.52	43.75
3	Co 12014	6.35	49.72	12.78	18.32	20.35	89.25			56.73	51.39
4	Co 12016	7.47	57.92	12.81	18.32	20.25	89.65			55.38	57.78
5	Co 12017	5.77	47.22	12.19	17.43	19.25	89.70			60.60	46.53
6	Co 12019	6.79	53.75	12.63	18.10	20.10	89.25			60.99	60.83
7	Co 12021	9.31	73.47	12.62	18.09	20.10	89.15			57.80	64.87
8	Co 12024	6.85	52.23	13.12	18.76	20.75	89.65			60.29	52.78
9	CoM 12084	6.20	48.34	12.81	18.32	20.25	89.70			60.96	43.20
10	CoM 12085	6.49	48.33	13.43	19.21	21.25	89.60			62.55	42.36
11	CoM 12086	6.87	53.61	12.81	18.32	20.25	89.65			64.51	52.50
12	CoN 12073	6.59	51.39	12.81	18.32	20.25	89.70			60.55	51.25
13	CoN 12074	4.91	36.81	13.35	19.09	21.10	89.70			58.95	39.72
14	CoT 12368	7.38	56.11	13.16	18.87	20.95	89.30			63.80	44.31
15	VSI 12121	8.49	62.50	13.58	19.43	21.50	89.60			62.93	57.23
Stds											
1	Co 86032	4.66	37.92	12.19	17.43	19.25	89.70			61.94	32.37
2	Co 99004	9.54	80.14	11.87	16.98	18.75	89.70			61.37	75.28
	SE	0.807	5.288	0.354	0.500	0.542	0.210			2.557	5.435
	CD (0.05%)	2.293	15.031	NS	NS	NS	NS			NS	15.448
	CV	16.510	13.885	3.906	3.856	3.770	0.331			5.977	14.911

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	CCS % (10 m)	Sucrose % (10 m)	Brix % (10 m)	Purity % (10 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 12009	282	2.9	1.654	9.97	14.44	16.4	87.15	55.28	57.50	68.47
2	Co 12012	257	2.9	1.423	10.30	14.80	16.6	88.45	40.28	41.11	51.81
3	Co 12014	234	3.0	1.341	9.63	13.88	15.6	87.95	48.06	50.14	60.97
4	Co 12016	256	2.7	1.544	9.52	13.75	15.6	87.4	52.78	50.56	61.39
5	Co 12017	293	2.8	1.769	9.71	13.99	15.7	88.05	42.08	40.69	47.36
6	Co 12019	195	2.7	1.068	9.61	13.88	15.7	87.65	56.81	56.53	62.22
7	Co 12021	263	2.8	1.609	10.42	15.03	16.9	87.9	64.31	62.22	58.75
8	Co 12024	215	2.7	1.152	9.94	14.34	16.2	87.8	50.00	44.72	70.00
9	CoM 12084	239	3.0	1.521	10.36	14.92	16.8	88.1	38.20	41.11	50.28
10	CoM 12085	277	3.0	2.110	11.09	15.95	17.9	88.4	39.86	39.45	50.84
11	CoM 12086	278	2.9	1.805	10.01	14.45	16.3	87.6	48.75	50.14	57.64
12	CoN 12073	223	2.8	1.510	9.79	14.11	15.9	87.95	47.92	47.09	51.25
13	CoN 12074	247	3.0	1.621	10.61	15.26	17.1	88.3	35.14	39.03	46.53
14	CoT 12368	247	2.9	1.698	10.41	15.03	17.0	87.75	41.81	42.64	57.23
15	VSI 12121	274	3.0	1.865	10.70	15.40	17.3	88.35	48.61	49.45	64.03
Stds											
1	Co 86032	230	3.0	1.628	9.28	13.41	15.15	87.4	28.75	29.59	55.28
2	Co 99004	241	3.1	1.478	9.47	13.65	15.35	87.9	73.61	72.64	80.28
	SE	8.970	0.163	0.088	0.367	0.513	0.541	0.421	6.465	4.078	4.186
	CD	25.498	NS	0.249	NS	NS	NS	NS	18.377	11.593	11.899
	CV	5.079	8.057	7.863	5.165	5.011	4.698	0.677	19.136	12.037	10.122

KERALA AGRICULTURAL UNIVERSITY
Agricultural Research Station
All India Coordinated Research Project on Sugarcane

Annual Report 2015 - 2016

- 1. Title** : Advanced Varietal Trial (Midlate I Plant)
2. Principal Investigator : Dr. Shajan, V.R., Associate Professor (Plant Breeding)
3. Associates : Sri. Jayakumar, G., Assistant Professor (Agronomy)
: Dr. Surendran, M., Assistant Professor (Plant Pathology)
4. Technical Programme :

- Entries (11) : Co 09009, Co 10015, Co 10017, Co 10031, Co 10033, CoM 10083,
CoT 10368, CoT 10369, CoVC 10061, PI 10131 and PI 10132.
- Standards (2) : Co 86032 and Co 99004
- Design : Randomized Block Design
- Replications : Two
- Plot size : Gross: 6m x 8r x 1.2 m
Net : 5m x 6r x 1.2 m
- Seed rate : 12 buds per metre
- Planting date : 15/01/2015
- Crop duration : 12 months

Results:

CCS (t/ha): Highest CCS (t/ha) was recorded by clone CoVC 10061 (7.81), Co 10015 (7.33), Co 09009 (7.20), CoT 10369 CoT 10369 (6.32), CoM 10083 (5.82) and Co 10033 (5.70) on par with best standard Co 99004 (6.82)

Cane yield (t/ha): Highest CCS (t/ha) was recorded by clone CoVC 10061 (59.17), Co 10015 (57.64), Co 09009 (53.75), Co 10033 (47.37) and CoT 10369 (46.12) on par with best standard Co 99004 (56.25)

CCS % (10m): No significant difference were observed among the entries and standards

Sucrose % (10m): No significant difference were observed among the entries and standards

Brix % (10 m): No significant difference were observed among the entries and standards

Remarks:

The trial was severally affected by root grub and sheath and shoot rot

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

Advanced Varietal Trial (Midlate I Plant)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	CCS % (12m)	Sucrose % (12m)	Brix % (12m)	Purity % (12m)	Pol % cane (12m)	Fibre % (12m)	Extracti on % (12m)	NMC at 12m ('000/ha)
1	Co 09009	7.20	53.75	13.41	19.20	21.30	89.40			59.62	56.67
2	Co 10015	7.33	57.64	12.75	18.29	20.35	89.10			58.23	63.89
3	Co 10017	3.35	26.12	12.84	18.41	20.45	89.20			55.30	31.39
4	Co 10031	4.20	32.64	12.86	18.42	20.45	89.30			61.00	37.50
5	Co 10033	5.70	47.37	12.15	17.42	19.35	89.20			56.94	47.64
6	CoM 10083	5.82	43.75	13.24	18.99	21.10	89.20			59.90	53.06
7	CoT 10368	5.07	41.25	12.29	17.63	19.60	89.10			59.92	41.25
8	CoT 10369	6.32	46.12	13.70	19.65	21.85	89.15			62.50	48.20
9	CoVC 10061	7.81	59.17	13.16	18.87	20.95	89.25			64.37	65.00
10	PI 10131	4.52	33.34	13.55	19.43	21.60	89.20			63.85	31.25
11	PI 10132	3.30	24.17	13.65	19.63	21.95	88.65			59.14	26.67
Stds											
1	Co 86032	5.17	40.42	12.78	18.32	20.35	89.25			60.42	42.50
2	Co 99004	6.82	56.25	12.13	17.40	19.35	89.10			64.97	50.42
	SE	0.527	4.176	0.384	0.548	0.607	0.243			2.273	3.838
	CD (0.05%)	1.498	11.871	NS	NS	NS	NS			NS	10.910
	CV	13.344	13.663	4.194	4.170	4.152	0.385			5.317	11.851

S. No.	Clone	Stalk Length (m)	Stalk Diameter (cm)	Single cane weight (kg)	CCS % (10 m)	Sucrose % (10 m)	Brix % (10 m)	Purity % (10 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 09009	232	3.0	1.606	10.90	15.72	17.7	87.95	54.27	66.98	54.17
2	Co 10015	235	2.5	1.341	9.66	13.87	15.5	88.70	56.77	63.86	50.105
3	Co 10017	240	2.9	1.496	10.27	14.79	16.6	88.15	25.63	27.29	41.875
4	Co 10031	169	2.8	1.222	9.53	13.76	15.6	87.50	33.13	36.15	28.96
5	Co 10033	265	2.7	1.758	9.37	13.52	15.3	87.70	42.92	50.84	40.625
6	CoM 10083	216	3.0	1.372	10.00	14.45	16.4	87.45	43.96	55.21	52.5
7	CoT 10368	248	2.6	1.462	9.16	13.19	14.8	88.05	36.77	49.07	43.23
8	CoT 10369	236	3.4	1.798	10.84	15.60	17.5	88.20	47.92	43.54	46.25
9	CoVC 10061	212	3.1	1.549	10.19	14.68	16.5	88.00	57.40	61.15	53.96
10	PI 10131	218	3.2	1.681	10.48	15.14	17.1	87.60	26.98	55.84	44.69
11	PI 10132	210	2.6	1.394	11.29	16.29	18.4	87.90	18.75	20.83	36.67
Stds											
1	Co 86032	236	2.7	1.472	9.43	13.63	15.4	87.45	37.50	38.02	47.19
2	Co 99004	234	3.3	1.919	8.98	12.92	14.5	88.30	42.50	54.38	51.98
	SE	11.905	0.180	0.090	0.396	0.577	0.673	0.405	5.501	5.788	3.697
	CD	33.841	0.511	0.256	1.126	1.639	1.912	NS	15.636	16.454	10.509
	CV	7.426	8.800	8.253	5.599	5.652	5.862	0.652	19.282	17.078	11.477

Fluff 2014

Date of receipt: 15/02/2016

Date of sowing: 04/04/2016

No. of Station Crosses: 12

No. of Zonal Crosses: 7

No. of PCs: 13

No. of GCs: 20

Sl. No.	STATION CROSSES		Fluff weight(g)	No. of seedlings	No. of seedling per gram
1	Co 86002 X CoC 8001		7.0	0	0.0
2	Co 0237 X Co 1148		11.0	105	9.5
3	Co 98010 X Co 775		12.5	0	0.0
4	CoV 89101 X Co 1148		22.0	1300	59.1
5	CoV 89101 X Co 8210		22.0	215	9.8
6	Co 8208 X Co 1148		22.0	931	42.3
7	Co 98010 X Co 1148		10.5	0	0.0
8	Co 98008 X Co 1148		9.0	0	0.0
9	CoV 89101 X CoPant 97222		23.0	2110	91.7
10	CoA 10321 X Co775		12.5	125	10.0
11	Co 92006 X Co Pant 97222		14.5	2000	137.9
12	BO 106 X Co Pant 97222		9.5	0	0.0
	Sub total		176.0		
	ZONAL CROSSES				
1	ISH 41 X Co 94008		9.5	182	19.2
2	Co 0312 X Co 0209		10.5	0	0.0
3	CoV 94101 X Co 97015		3.5	0	0.0
4	CoC 671 X CoT 8201		8.0	0	0.0
5	CoM 0265 X CoC 671		6.5	107	16.5
6	CoC 671 X Co 94008		9.0	119	13.2
7	Co 86032 X Co 94005		5.5	180	32.7
	Sub total		52.5		
	POLY CROSSES				
	Female	Males			
1	Co 94012		13.0	26	2.0
2	CP 52-68		6.0	55	9.2
3	CoC 90063	Co 775	6.0	0	0.0
4	CoV 89101	Co 99006	14.5	1205	83.1
5	Co 7201	Co 86011	10.5	53	5.0
6	CoA 7602	ISH 69	10.5	25	2.4
7	Co 2000-10	Co 94008	7.0	26	3.7
8	ISH 100	CoT 8201	5.0	19	3.8
9	86 V 46	CoV 92102	7.0	0	0.0

10	CoC 671	Co 93009	6.5	0	0.0
11	CoM 0265		3.5	0	0.0
12	Co 85002		5.5	0	0.0
13	Co 8371		5.5	0	0.0
	Sub total		100.5		
	General Collections				
1	Co 85002		17.0	113	6.6
2	CoC 671		11.5	58	5.0
3	Co 92006		11.5	0	0.0
4	CoA 7602		16.5	22	1.3
5	Co 94008		8.0	0	0.0
6	CoC 8001		16.5	0	0.0
7	ISH 229		22.0	300	13.6
8	Co 1158		23.0	21	0.9
9	Co 89003		8.5	16	1.9
10	Co 94005		41.5	0	0.0
11	Co 1148		19.0	51	2.7
12	Co 94007		11.0	0	0.0
13	Co 87023		8.5	36	4.2
14	ISH 156		20.0	110	5.5
15	ISH 192		18.5	1130	61.1
16	Co 0233		37.5	0	0.0
17	Co 88025		11.0	24	2.2
18	Co 97009		12.5	77	6.2
19	CoTI 85119		24.0	0	0.0
20	Co 0237		12.0	16	1.3
	Sub total		350.0		
	Grand total		679.0	10757	

Details of clones developed under fluff exchange programme.

Sl.No.	Year sown	Crosses	PC / GC	No. of seedlings obtained initially	Seedlings transplanted	C1	CII	CIII
1	2015	19	33	10757				
2	2014	31	31	7112	2639			
3	2013	25	30	11290	5685			
4	2012	32	31	6262	4832	145		
5	2011	32	34	12352	8545	413	56	

Meteorological data during the crop period (January 2015 - December 2015)

Date	Total	Average	Average	Average	
	Rainfall (in mm)	Max.Temp (°C)	Min.Temp (°C)	Rel. Humidity (%)	
	0830 hrs	0830 hrs	0830 hrs	0830 hrs	1730 hrs
January	11	32	23	80	68
February	4	33	24	79	67
March	62	34	25	83	69
April	161	34	25	83	71
May	184	33	26	85	77
June	441	32	25	91	83
July	284	31	25	92	83
August	274	32	25	91	84
September	258	33	25	91	80
October	350	32	25	92	79
November	137	32	25	91	80
December	87	34	24	86	75
Total	2253.0	32.7	24.8	87.0	76.3