

**UNIVERSITY OF AGRICULTURAL SCIENCES
DHARWAD**



**AGRICULTURAL RESEARCH STATION
SANKESHWAR**

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

**PLANT BREEDING EXPERIMENTAL
DATA 2016-17**

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Meteorological data for the year 2016 at ARS, Sankeshwar

Month	Rainy days	Rainfall (mm)	Average rainfall in 31 years (mm)	Occurrence of pest and diseases
January	-	0.00	1.14	-
February	1	21.4	1.08	Root grub 4% ESB 16%
March	-	0.0	9.59	Thrips 5% Root grub 6% ESB 18% Smut 4-6%
April	3	43.6	56.1	ESB-20%, Smut 5-6% Root grub 16%
May	3	54.4	63.21	ESB 20%, Smut 6-7% Root grub 18%
June	6	51.0	149.2	Rust 5-6 % Root grub 20%
July	19	267.4	148.9	Rust 10-15 %, Root grub 25%
August	12	121.00	132.08	SWA 1-2 grade, Rust 15-16%, Root grub 25-30%
September	7	80.0	125.1	SWA 2-3 grade, White fly 5%, Root grub 25-30%
October	1	4.2	127.5	SWA 2-3 grade, White fly 3%
November	1	15.2	31.52	SWA 2-3 grade,
December	-	0.00	5.27	SWA 2-3 grade,
Total	53	658.2	850.69	

Rainfall received during 2016 was (658.2) 192.49 mm deficit (22.62%) compared to the average rainfall of 31 years (850.69 mm). Though the sugarcane is an irrigated crop, the cane productivity was moderate to low because of delayed onset of monsoon (July) and low to moderate rainfall during January to June. Heavy rains during July and August caused water log stress led to profuse flowering during November –December affecting both cane productivity and crushing season.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Initial Varietal Trial - Early
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2016-17
9. Likely year of completion. : 2018-19
10. Experimental details.

a) Varieties:

1	Co 13002		Standards
2	Co 13003	1	CoC 671
3	Co 13004	2	Co 94008
4	CoN 13071	3	Co 85004
5	Co 13072		
6	CoSnk 13101		
7	CoSnk 13102		
8	MS 13081		

- b) Design. : R. B. D.
- c) Replication : Three
- d) Plot size. : 6.0m X 5.4m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 01-12-2015

1. Initial Varietal Trial (Early)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS% 10m	Sucrose % (10 m)	Brix % (10m)	Purity % (10m)	Pol % Cane (10m)	Fibre % (10m)	Extraction % (10m)	NMC at 10 M ('000/ha)
1	Co 13002	9.38	67.37	13.91	19.52	20.71	94.29	14.82	14.10	52.14	71.35
2	Co 13003	10.29	81.56	12.58	17.60	18.54	94.94	13.11	15.52	55.27	69.09
3	Co 13004	14.32	120.53	11.86	16.91	18.54	91.19	12.87	13.85	56.24	85.93
4	CoN 13071	7.72	73.23	10.65	15.14	16.54	91.51	11.44	14.49	49.10	68.79
5	Co 13072	6.49	62.61	10.33	14.78	16.37	90.28	11.10	14.88	55.14	61.50
6	Cosnk 13101	9.12	65.31	13.93	19.40	20.21	96.03	14.77	13.86	45.24	81.72
7	Cosnk 13102	13.04	117.03	11.15	15.88	17.37	91.40	12.77	14.25	56.28	76.49
8	MS 13081	14.48	118.17	12.31	17.34	18.54	93.48	13.26	13.50	55.76	57.60
Std											
1	CoC 671	7.91	71.55	11.05	15.83	17.54	90.23	12.00	14.16	50.38	77.10
2	Co 94008	8.67	89.44	9.73	14.25	16.54	86.06	10.75	14.51	55.87	68.79
3	Co 85004	10.65	91.28	11.74	16.69	18.21	91.60	12.49	15.09	53.42	58.83
	SEM	0.74	6.15	0.43	0.49	0.32	1.76	0.34	0.51	1.26	2.84
	CD	2.19	18.14	1.26	1.43	0.95	5.20	4.70	6.18	4.09	8.39
	CV	12.64	12.23	6.28	5.05	3.07	3.32	1.02	1.51	3.70	6.97

Out of eight test entries, three viz, Co13004, MS13081 and CoSnk 13102 recorded significantly superior cane and sugar yields Over best standard Co85004.

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	CCS % (8 m)	Sucrose % (8 m)	Brix % (8m)	Purity % (8m)	No of shoots ('000/ha) 240 days	No of shoots ('000/ha) 120days	Germination % (30 days)
1	Co 13002	151.87	2.86	0.99	6.91	10.90	14.49	75.20	86.96	116.42	41.99
2	Co 13003	190.33	2.71	1.23	4.99	8.42	12.39	68.13	79.05	101.02	38.29
3	Co 13004	181.53	3.15	1.49	4.35	7.54	11.49	65.50	51.64	64.78	32.27
4	CoN 13071	166.87	2.78	1.10	2.69	5.58	10.33	53.94	80.70	121.97	39.33
5	Co 13072	169.33	2.72	1.07	1.85	4.75	10.30	45.61	86.14	146.09	46.61
6	Cosnk 13101	161.67	2.49	0.84	4.95	8.24	11.89	70.44	62.52	103.80	51.93
7	Cosnk 13102	182.33	3.46	1.66	3.29	6.32	10.83	58.02	58.42	98.77	41.99
8	MS 13081	211.67	3.20	1.82	3.93	6.99	11.03	63.40	70.43	113.55	34.35
Std											
1	CoC 671	161.73	2.77	0.96	3.95	6.91	10.66	64.77	86.45	119.61	42.80
2	Co 94008	174.00	3.07	1.35	3.24	6.09	10.23	59.59	66.32	81.83	46.38
3	Co 85004	183.00	3.13	1.61	4.83	8.25	12.36	66.75	62.83	105.13	31.69
	SEM	8.76	0.09	0.10	0.39	0.45	107.68	3.67	6.91	8.09	5.80
	CD	8.62	0.27	0.28	1.17	1.32	317.64	10.82	20.37	23.87	17.10
	CV	25.83	5.41	12.98	16.73	10.64	424.40	10.11	16.62	13.14	24.68

EARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Advanced Varietal Trial – Early I plant
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2015-16
9. Likely year of completion. : 2017-18
10. Experimental details.

a) Varieties:

1	Co11001	Standards	
2	Co11004	1	CoC 671
3	CoM 11081	2	Co 94008
4	CoM 11082	3	Co 85004
5	CoM 11084		

- b) Design. : R. B. D.
- c) Replication : Three
- d) Plot size. : 6.0mX 5.4m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 28-12-2015

2. Advanced Varietal Trial (Early 1 plant)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS% 10m	Sucrose % (10 m)	Brix % (10m)	Purity % (10m)	Pol % cane (10m)	Fibre % (10m)	Extraction % (10m)	NMC at 10 M ('000/ha)
1	Co11001	9.92	84.49	11.76	17.41	20.68	84.28	13.50	12.49	61.77	71.15
2	Co11004	10.59	77.63	13.63	19.77	22.51	87.83	14.51	16.59	58.72	63.35
3	CoM 11081	12.75	81.88	15.62	22.20	24.19	91.77	17.53	11.00	62.39	65.30
4	CoM 11082	14.51	95.52	15.20	21.55	23.35	92.28	15.81	16.62	58.52	62.93
5	CoM 11084	9.00	62.81	14.33	20.16	21.51	93.85	15.29	14.16	54.80	61.09
Std											
1	CoC 671	12.38	83.65	14.78	20.90	22.51	92.82	15.79	14.39	57.93	61.39
2	Co 94008	10.46	85.19	12.28	17.64	19.68	89.71	13.62	12.80	59.30	63.04
3	Co 85004	8.98	62.78	14.30	20.42	22.51	90.75	14.90	17.03	54.01	60.27
	SEM	1.22	8.9	0.40	0.41	0.36	1.86	0.34	0.78	1.30	6.285
	CD	3.69	26.99	1.20	1.25	1.09	5.65	1.04	2.36	3.97	19.06
	CV	19.01	19.45	4.89	3.58	2.81	3.57	3.93	9.36	3.88	17.13

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	CCS % (8 m)	Sucrose % (8 m)	Brix % (8m)	Purity % (8m)	No of shoots ('000/ha) 240 days	No of shoots ('000/ha) 120days	Germination % (30 days)
1	Co11001	175.33	2.93	1.27	5.18	8.88	13.35	66.61	53.18	58.21	32.04
2	Co11004	203.63	2.75	1.22	6.02	9.93	14.15	70.54	47.84	60.06	33.43
3	CoM 11081	217.67	2.64	1.30	7.41	11.62	15.32	75.70	68.79	78.95	41.99
4	CoM 11082	242.53	2.75	1.50	7.29	11.55	15.49	74.57	44.56	64.16	17.93
5	CoM 11084	191.33	2.53	1.07	5.84	9.78	14.22	68.78	69.81	65.09	50.20
Std											
1	CoC 671	190.87	2.93	1.41	6.69	10.61	14.22	74.61	56.06	71.46	30.65
2	Co 94008	206.53	2.84	1.36	5.14	8.74	12.99	67.33	57.90	50.00	35.51
3	Co 85004	202.67	2.45	0.97	6.51	10.36	13.99	74.03	90.96	93.12	49.04
	SEM	6.90	0.08	0.08	0.36	0.45	0.57	2.26	3.15	11.52	2.97
	CD	20.94	0.24	0.24	1.09	1.36	1.73	6.86	9.57	34.95	9.01
	CV	5.87	4.96	11.06	9.95	7.61	6.94	5.48	8.94	29.51	14.16

None of the test entries found superior over respective best standards with respect to cane and sugar yields.

EARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Advanced Varietal Trial – Early II plant
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2015-16
9. Likely year of completion. : 2016-17
10. Experimental details.

a) Varieties:

1	Co 10004	Standards	
2	Co 10005	1	CoC 671
3	Co 10006	2	Co 94008
4	Co 10024	3	Co 85004
5	Co 10026		
6	Co 10027		
7	CoT 10366		
8	CoT 10367		

- b) Design. : R. B. D.
- c) Replication : Three
- d) Plot size. : 6.0 m X 5.4 m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 03-12-2015

3. Advanced Varietal Trial (Early II Plant)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS% 10m	Sucrose % (10 m)	Brix % (10m)	Purity % (10m)	Pol % cane (10m)	Fibre % (10m)	Extraction % (10m)	NMC at 10 M ('000/ha)
1	Co 10004	9.55	93.22	10.22	15.29	18.54	82.49	11.58	14.31	52.61	64.21
2	Co 10005	8.82	84.39	10.45	15.57	18.71	83.24	11.32	17.28	52.02	61.79
3	Co 10006	8.48	71.78	11.81	17.33	20.21	85.74	13.34	13.00	55.67	75.57
4	Co 10024	11.70	114.22	10.25	15.23	18.21	83.67	11.10	17.13	54.12	71.15
5	Co 10026	11.77	108.31	10.85	16.10	19.21	83.79	11.94	15.87	59.16	66.66
6	Co 10027	9.18	91.78	10.01	14.90	17.87	83.44	11.18	15.01	54.13	78.69
7	CoT 10366	7.69	83.98	9.12	13.74	16.87	81.42	10.20	15.76	46.26	65.96
8	CoT 10367	10.68	112.42	9.50	14.35	17.71	81.05	10.89	14.15	55.52	66.07
Std											
1	CoC 671	8.17	86.45	11.14	16.44	19.37	84.82	10.73	14.54	50.74	73.22
2	Co 94008	10.22	110.11	9.29	14.05	17.37	80.88	10.58	14.71	56.53	71.01
3	Co 85004	10.02	89.94	9.42	14.28	17.71	80.61	12.40	14.81	49.62	93.49
	SEM	0.51	4.05	0.25	0.30	0.26	1.06	0.27	0.86	1.12	6.44
	CD	1.51	11.94	0.74	0.88	0.78	3.11	0.79	2.53	3.31	18.99
	CV	9.21	7.37	4.25	3.38	2.48	2.21	4.07	9.80	3.64	15.57

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	CCS % (8 m)	Sucrose % (8 m)	Brix % (8m)	Purity % (8m)	No of shoots ('000/ha) 240 days	No of shoots ('000/ha) 120days	Germination % (30 days)
1	Co 10004	193.77	2.92	1.37	5.49	9.07	12.95	70.09	61.91	85.73	48.93
2	Co 10005	215.00	2.71	1.33	5.18	8.67	12.62	68.75	100.10	110.47	46.73
3	Co 10006	162.87	2.52	0.91	6.49	10.43	14.28	72.99	66.32	88.29	40.60
4	Co 10024	199.00	3.06	1.57	4.72	7.66	10.62	71.68	74.54	122.38	44.18
5	Co 10026	221.00	2.93	1.55	5.73	9.17	12.48	73.39	81.83	107.18	60.26
6	Co 10027	157.97	2.90	1.12	3.70	6.65	10.62	61.85	77.62	102.56	60.73
7	CoT 10366	147.87	3.16	1.21	3.11	6.00	10.36	57.53	75.15	72.89	37.13
8	CoT 10367	188.20	3.16	1.62	4.93	8.05	11.29	71.36	63.65	86.03	60.84
Std											
1	CoC 671	165.20	3.01	1.21	5.07	8.51	12.42	68.11	59.85	84.49	47.08
2	Co 94008	184.00	3.12	1.49	4.42	7.55	11.29	66.91	72.79	74.94	47.08
3	Co 85004	160.67	2.68	0.92	3.47	6.41	10.56	60.61	86.96	105.33	48.35
	SEM	8.04	0.08	0.10	0.61	0.72	0.57	4.31	7.20	5.22	3.66
	CD	23.71	0.23	0.29	1.79	2.12	1.69	12.70	21.23	15.39	10.80
	CV	7.67	4.56	13.15	22.12	15.51	8.44	11.04	16.71	9.56	12.87

Out of eight test entries, Co10026 recorded significantly superior sugar yield over best standard Co94008 with on par cane yield.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Advanced Varietal Trial – Early Ratoon
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2015-16
9. Likely year of completion. : 2016-17
10. Experimental details.

a) Varieties:

1	Co 10004	Standards	
2	Co 10005	1	CoC 671
3	Co 10006	2	Co 94008
4	Co 10024	3	Co 85004
5	Co 10026		
6	Co 10027		
7	CoT 10366		
8	CoT 10367		

- b) Design. : R. B. D.
- c) Replication : Three
- d) Plot size. : 6.0m X 7.2 m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Ratooning : 10-3-2016

4. Advanced varietal Trial (Early-Ratoon)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS% 10m	Sucrose % (9 m)	Brix % (9 m)	Purity % (9 m)	Pol % cane (9 m)	Fibre % (9 m)	Extraction % (9 m)	NMC at 9M ('000/ha)
1	Co 10004	10.29	83.00	12.41	18.05	20.68	87.27	13.62	14.54	59.40	62.70
2	Co 10005	8.74	73.00	12.03	17.91	21.51	83.43	12.96	17.65	65.06	87.97
3	Co 10006	7.29	60.33	11.96	17.61	20.68	85.12	13.79	11.70	54.37	91.35
4	Co 10024	8.29	69.33	11.81	17.46	20.68	84.40	13.12	14.81	54.62	85.35
5	Co 10026	10.21	80.67	12.65	18.67	22.01	84.83	14.45	12.57	60.13	86.49
6	Co 10027	7.44	60.67	12.26	17.90	20.68	86.58	14.05	11.49	61.25	77.94
7	CoT 10366	8.76	74.33	11.78	17.53	21.01	83.44	13.40	13.67	52.46	94.45
8	CoT 10367	12.77	86.00	14.75	21.24	23.84	88.92	16.13	14.02	58.43	83.18
Stds											
1	CoC 671	8.61	62.33	13.58	19.86	23.01	86.13	14.50	12.94	55.96	72.83
2	Co 94008	11.05	89.00	12.41	18.24	21.34	85.50	13.85	14.07	56.86	78.88
3	Co 85004	10.04	75.33	13.32	19.51	22.68	85.73	15.31	15.75	62.80	101.45
	SEM	0.74	3.71	0.65	0.83	0.79	1.72	0.64	0.53	4.30	7.70
	CD	2.18	10.95	1.93	2.46	2.34	5.07	1.90	1.57	12.69	22.72
	CV	13.58	8.69	8.96	7.78	6.35	3.48	7.89	6.63	12.78	15.90

None of the test entries were superior to bet's standard Co94008 for cane and sugar yield.

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	No of tillers ('000/ha) 120days	No of tillers ('000/ha) 90 days
1	Co 10004	170.20	2.55	1.28		
2	Co 10005	169.00	2.21	0.81		
3	Co 10006	117.33	2.37	0.56		
4	Co 10024	145.10	2.47	0.81		
5	Co 10026	156.63	2.46	0.91		
6	Co 10027	114.07	2.76	0.77		
7	CoT 10366	143.83	2.60	0.77		
8	CoT 10367	162.43	2.78	1.03		
Stds						
1	CoC 671	144.97	2.64	0.83		
2	Co 94008	173.87	2.84	1.09		
3	Co 85004	149.10	2.46	0.65		
	SEM	14.81	0.08	0.09		
	CD	43.68	0.24	0.27		
	CV	17.13	5.53	18.47		

EARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Initial Varietal Trial – Midlate
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2016-17
9. Likely year of completion. : 2019-20
10. Experimental details.

a) Varieties:

1	Co 13005	12	CoN 13073	Standards	
2	Co 13006	13	CoN 13074	1	Co 86032
3	Co 13008	14	CoSNK 13103	2	Co 99004
4	Co 13009	15	Co SNK 13104		
5	Co 13011	16	CoSNK 13105		
6	Co 13013	17	CoSNK 13106		
7	Co 13014	18	CoT 13366		
8	Co 13016	19	PI 13131		
9	Co 13018	20	PI 13132		
10	Co 13020				
11	CoM 13082				

- b) Design. : R. B. D.
- c) Replication : Two
- d) Plot size. : 6.0m X8.1m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 01-12-2015

5. Initial Varietal Trial (Midlate)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS% 12m	Sucrose % (12 m)	Brix % (12m)	Purity % (12m)	Pol % cane (12m)	Fibre % (12m)	Extraction % (12m)	NMC at 10 M ('000/ha)
1	Co 13005	9.23	76.20	12.12	17.82	20.88	85.35	13.40	14.80	54.14	49.68
2	Co 13006	16.17	102.19	15.83	22.17	23.39	94.78	16.96	13.48	57.36	64.90
3	Co 13008	16.35	117.22	13.96	19.98	22.13	90.31	15.07	14.59	62.16	69.73
4	Co 13009	18.53	120.75	15.34	21.69	23.39	92.73	16.28	14.92	70.22	72.82
5	Co 13011	14.04	101.68	13.81	19.76	21.88	90.32	14.78	15.19	59.55	66.85
6	Co 13013	17.29	127.83	13.53	19.50	21.88	89.15	14.40	16.15	60.68	75.39
7	Co 13014	19.94	136.17	14.67	20.68	22.13	93.47	15.74	13.90	62.83	79.91
8	Co 13016	7.14	48.44	14.67	20.68	22.13	93.48	15.49	15.12	57.35	46.69
9	Co 13018	16.87	124.07	13.73	19.76	22.13	89.24	14.96	14.27	63.48	87.11
10	Co 13020	18.38	131.15	14.02	19.97	21.88	91.24	15.22	13.74	52.48	73.13
11	CoM 13082	13.43	116.03	11.58	17.01	19.88	85.54	13.22	12.26	60.47	59.14
12	CoN 13073	12.70	111.19	11.44	17.09	20.63	82.83	13.02	13.75	64.86	70.86
13	CoN 13074	12.93	116.20	11.16	16.17	18.38	87.96	12.51	12.66	49.20	58.42
14	CoSNK 13103	15.88	112.54	14.08	20.10	22.13	90.82	15.36	13.52	61.59	62.53
15	Co SNK 13104	14.06	99.93	14.05	19.93	21.63	92.15	15.25	13.52	62.34	60.99
16	CoSNK 13105	8.83	70.28	12.61	18.38	21.13	87.00	13.99	13.89	57.43	56.05
17	CoSNK 13106	16.50	121.60	13.65	19.46	21.38	90.99	14.91	13.42	60.83	70.97
18	CoT 13366	9.15	74.44	12.26	17.82	20.38	87.44	13.67	13.28	56.46	59.55
19	PI 13131	4.39	33.31	13.21	19.18	21.88	87.66	14.48	14.52	57.99	43.20
20	PI 13132	12.36	88.06	14.13	20.22	22.38	90.31	15.43	13.68	60.18	61.40
Stdts											
1	Co 86032	13.77	106.68	12.92	18.82	21.63	87.00	14.34	13.79	61.87	78.89
2	Co 99004	12.10	81.92	14.77	20.92	22.63	92.45	15.56	15.63	52.45	56.98
	SEM	1.05	8.79	0.49	0.54	0.32	1.85	0.43	0.79	3.98	2.05
	CD	3.09	25.84	1.45	1.59	0.95	5.44	1.26	2.33	11.71	6.02
	CV	10.88	12.33	5.16	3.95	2.12	2.92	4.13	7.93	9.49	4.47

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	CCS % (10 m)	Sucrose % (10 m)	Brix % (10m)	Purity % (10m)	No of shoots ('000/ha) 240 days	No of shoots ('000/ha) 120days	Germination % (30 days)
1	Co 13005	204.65	3.08	1.64	9.22	14.11	17.79	79.43	72.20	67.68	33.32
2	Co 13006	249.80	2.79	1.66	11.40	16.38	18.29	89.95	74.15	86.50	30.20
3	Co 13008	250.50	2.91	1.75	10.59	15.45	17.79	87.01	72.71	115.91	65.25
4	Co 13009	240.00	2.92	1.73	8.05	12.60	16.54	76.18	79.61	111.80	53.57
5	Co 13011	242.50	2.87	1.60	8.32	12.94	16.79	77.13	67.88	81.35	44.89
6	Co 13013	267.00	2.81	1.83	9.02	13.77	17.29	79.65	73.33	89.38	39.22
7	Co 13014	244.30	3.07	1.83	9.84	14.71	17.79	82.70	82.90	97.50	60.51
8	Co 13016	157.50	2.93	1.14	10.60	15.75	18.79	83.83	53.69	59.76	48.94
9	Co 13018	233.00	2.96	1.59	10.34	15.42	18.54	83.14	92.46	95.55	46.28
10	Co 13020	231.50	3.35	2.00	8.72	13.40	17.04	78.51	79.50	112.83	58.08
11	CoM 13082	216.50	3.40	2.05	6.10	10.19	14.79	68.97	69.22	93.80	29.39
12	CoN 13073	238.00	2.88	1.64	4.39	8.59	15.04	56.73	68.09	98.02	38.18
13	CoN 13074	259.50	3.19	2.07	4.88	8.64	13.54	63.77	62.64	67.16	34.02
14	CoSNK 13103	252.00	3.00	1.88	9.84	14.93	18.54	80.50	67.78	99.56	35.52
15	Co SNK 13104	183.50	3.38	1.72	9.97	14.84	17.79	83.39	65.93	97.09	39.80
16	CoSNK 13105	145.50	3.29	1.34	9.79	14.60	17.54	83.12	58.42	99.15	41.65
17	CoSNK 13106	233.80	3.22	1.78	10.02	14.74	17.29	85.26	72.71	101.72	38.53
18	CoT 13366	181.00	2.94	1.33	10.11	15.05	18.04	83.43	61.50	72.20	38.18
19	PI 13131	150.00	2.76	0.89	9.84	14.72	17.79	82.67	50.09	84.75	48.71
20	PI 13132	197.50	3.00	1.52	10.35	15.50	18.79	82.49	63.46	79.50	36.45
Std's											
1	Co 86032	212.50	2.77	1.42	9.84	14.71	17.79	82.70	84.13	94.11	43.85
2	Co 99004	214.50	2.84	1.53	11.62	17.10	20.04	85.33	61.40	78.58	38.76
	SEM	12.35	0.09	0.12	0.48	0.54	0.54	2.88	4.12	7.96	4.06
	CD	36.32	0.27	0.36	1.42	1.60	1.58	8.48	12.12	23.40	11.95
	CV	8.00	4.36	10.74	7.43	5.50	4.36	5.11	8.36	12.48	13.40

Out of twenty test entries Co13014 recorded significantly superior cane and sugar yield over best standard Co86032. The other entries Viz., Co13009, Co13020 and Co13013 found significantly superior for sugar yield with numerically higher cane yield over best standard.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Advanced Varietal Trial – Midlate I Plant
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2015-16
9. Likely year of completion. : 2017-18
10. Experimental details.

a) Varieties:

1	Co11005	Standards	
2	Co11007	1	Co 86032
3	Co 11012	2	Co 99004
4	Co 11019		
5	CoM 11085		
6	CoM 11086		

- b) Design. : R. B. D.
- c) Replication : Three
- d) Plot size. : 6.0m X 5.4m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 29-12-2015

6. Advanced Varietal Trial (Midlate 1 plant)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS % 12m	Sucrose % (12 m)	Brix % (12m)	Purity % (12m)	Pol % cane (12m)	Fibre % (12m)	Extr action % (12m)	NMC at 12 M ('000/ha)
1	Co11005	8.68	72.34	12.00	17.70	20.84	84.96	13.89	11.54	61.00	59.85
2	Co11007	14.67	121.22	12.11	17.81	20.84	85.45	13.85	12.24	62.25	68.38
3	Co 11012	9.87	78.38	12.58	18.26	20.84	87.58	13.52	16.03	61.96	55.85
4	Co 11019	14.29	101.36	14.05	20.03	22.01	91.02	14.82	16.07	55.59	65.30
5	CoM 11085	10.42	75.61	13.88	19.87	22.01	90.27	15.54	11.76	58.19	58.31
6	CoM 11086	12.03	93.25	12.88	18.70	21.34	87.60	14.04	14.89	56.02	62.93
Stds											
1	Co 86032	9.89	78.73	12.55	18.38	21.34	86.12	14.20	12.72	59.26	58.83
2	Co 99004	12.54	90.57	13.87	19.86	22.01	90.26	15.32	12.82	60.37	61.39
	SEM	0.93	6.57	0.45	0.53	0.37	1.51	0.43	0.68	1.81	4.92
	CD	2.81	19.91	1.38	1.59	1.12	4.59	1.31	2.07	5.49	14.92
	CV	13.91	12.79	6.05	4.84	2.99	2.98	5.21	8.76	5.29	13.89

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	CCS % (10 m)	Sucrose % (10 m)	Brix % (10m)	Purity % (10m)	No of shoots ('000/ha) 240 days	No of shoots ('000/ha) 120days	Germination % (30 days)
1	Co11005	217.00	3.44	1.25	12.24	18.08	21.34	84.74	75.05	82.34	56.10
2	Co11007	227.33	3.16	1.91	10.70	15.71	18.34	85.81	51.13	81.83	44.99
3	Co 11012	243.77	3.21	1.44	13.74	19.97	22.84	87.40	53.39	55.85	22.67
4	Co 11019	252.20	3.15	1.49	12.10	18.18	22.18	81.97	78.85	73.82	33.77
5	CoM 11085	227.67	3.19	1.33	13.98	20.15	22.68	88.89	76.79	88.50	42.57
6	CoM 11086	222.33	2.98	1.36	13.40	19.45	22.18	87.68	84.80	114.37	56.45
Stds											
1	Co 86032	240.67	2.87	1.37	12.28	18.02	21.01	85.80	81.52	89.22	51.24
2	Co 99004	238.67	2.90	1.51	12.01	17.89	21.51	83.18	56.67	63.96	47.42
	SEM	11.93	0.15	0.11	0.29	0.31	0.28	1.50	4.13	8.47	44.40
	CD	36.20	0.45	0.33	0.88	0.94	0.84	4.55	12.52	25.68	9.61
	CV	8.84	8.25	12.87	4.00	2.91	2.24	3.03	10.25	18.05	12.36

Out of six test entries Co11007 recorded significantly superior cane yield over best standard Co99004 with numerically Higher sugar yield.

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Advanced Varietal Trial – Midlate II Plant
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2016-17
9. Likely year of completion. : 2017-18
10. Experimental details.

a) Varieties:

1	Co 9009	Standards	
2	Co 10015	1	Co 86032
3	Filler (Snk 07680)	2	Co 99004
4	Co 10031		
5	Co 10033		
6	CoM 10083		
7	CoT 10368		
8	CoT 10369		
9	CoVc 10061		
10	PI 10131		
11	PI 10132		

- b) Design. : R. B. D.
- c) Replication : Two
- d) Plot size. : 6.0m X 8.1 m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 02-12-2015

7. Advanced Varietal Trial (Midlate plant II)

Sl no	Clones	CCS (t/ha)	Cane Yield (t/ha)	CCS % 12m	Sucrose % (12 m)	Brix % (12m)	Purity % (12m)	Pol % cane (12m)	Fibre % (12m)	Extraction % (12m)	NMC at 10 M ('000/ha)
1	Co 9009	10.08	83.00	12.18	18.09	21.59	83.71	13.59	14.83	60.76	66.93
2	Co 10015	7.85	51.00	15.33	21.96	24.35	90.16	16.58	14.48	53.72	62.94
3	Filler (SNK 07680)	15.79	111.50	14.17	20.40	22.85	89.26	15.53	13.89	58.29	66.22
4	Co 10031	5.50	36.50	15.05	21.26	22.85	93.07	15.88	15.28	58.01	67.96
5	Co 10033	10.76	82.50	13.02	18.77	21.09	88.99	13.83	16.30	55.85	65.09
6	CoM 10083	6.05	42.50	14.24	20.32	22.34	90.96	15.26	14.90	56.39	44.90
7	CoT 10368	12.51	94.50	13.25	19.06	21.34	89.32	14.10	16.03	55.86	62.53
8	CoT 10369	12.50	89.00	14.06	20.28	22.84	88.79	15.54	13.42	63.73	67.55
9	CoVc 10061	14.92	106.50	14.08	20.38	23.10	88.18	15.49	14.00	57.14	70.83
10	PI 10131	13.55	89.00	15.23	21.86	24.35	89.77	16.22	15.78	60.77	67.96
11	PI 10132	16.75	109.50	15.30	21.86	24.10	90.69	16.15	16.12	60.06	42.54
Stds											
1	Co 86032	14.10	105.00	13.43	19.10	20.84	91.65	14.50	14.10	60.86	78.52
2	Co 99004	11.24	85.50	13.16	19.05	21.59	88.23	14.18	15.56	58.33	57.09
	SEM	0.63	4.87	0.54	0.58	0.30	2.05	0.49	0.38	1.07	3.62
	CD	1.94	15.00	1.66	1.78	0.92	6.33	1.49	1.18	3.30	11.16
	CV	7.64	8.24	5.43	4.06	1.87	3.25	4.53	3.61	2.59	8.11
Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single Cane Weigh (kg)	CCS % (10 m)	Sucrose % (10 m)	Brix % (10m)	Purity % (10m)	No of shoots ('000/ha) 240 days	No of shoots ('000/ha) 120days	Germination % (30 days)
1	Co 9009	174.30	2.95	1.11	11.06	16.41	19.54	83.92	75.65	86.61	68.96
2	Co 10015	212.80	2.46	1.10	11.90	17.51	20.54	85.25	68.88	76.57	48.13
3	Filler (SNK 07680)	228.30	2.85	1.56	12.05	17.66	20.54	85.99	71.55	96.76	52.64
4	Co 10031	158.15	3.17	1.20	11.82	17.08	19.29	88.56	72.88	105.17	56.23
5	Co 10033	224.65	3.12	1.78	11.07	16.42	19.54	83.87	71.03	80.26	51.49
6	CoM 10083	146.80	2.65	0.87	10.21	15.29	18.54	82.35	49.30	89.28	74.05
7	CoT 10368	226.80	2.46	1.16	9.99	14.93	18.04	82.73	67.86	89.69	47.55
8	CoT 10369	193.50	2.94	1.39	10.55	15.62	18.54	84.23	73.49	131.51	59.47
9	CoVc 10061	201.80	2.86	1.24	8.83	13.65	17.54	77.82	81.39	119.31	46.74
10	PI 10131	179.80	3.19	1.55	11.41	16.68	19.29	86.48	76.16	93.58	58.08
11	PI 10132	244.00	2.91	1.75	10.92	16.20	19.29	83.95	50.12	66.22	34.48
Stds											
1	Co 86032	238.50	2.77	1.59	10.39	15.32	18.04	84.88	87.95	121.36	60.05
2	Co 99004	216.50	2.67	1.39	11.87	17.34	20.04	86.53	67.45	71.65	59.93
	SEM	9.49	0.09	0.11	0.51	0.63	0.50	1.51	3.66	7.33	2.22
	CD	29.25	0.27	0.34	1.57	1.94	1.53	4.65	11.28	22.60	6.84
	CV	6.60	4.31	11.31	6.60	5.50	3.67	2.53	7.37	10.98	5.68

Out of eleven test entries PI 10132 recorded significantly superior sugar yield over best standard Co86032 with numerically higher cane yield

YEARLY RESEARCH PLAN FOR THE YEAR 2016-17

1. Project No. : a) D. R. No. 112
b) HOD. No. Bot.
2. Department. : Genetics and Plant Breeding
3. Project Title. : Varietal Improvement in Sugarcane
4. Experiment Title. : Advanced Varietal Trial – Midlate Ratoon
5. Project Leader. : Dr. S. B. Patil,
Professor and Head
ARS, Sankeshwar.
6. Location : ARS, Sankeshwar.
7. Experiment. : New
8. Year of start. : 2016-17
9. Likely year of completion. : 2017-18
10. Experimental details.

a) Varieties:

1	Co 9009	Standards	
2	Co 10015	1	Co 86032
3	Filler SNK 07680	2	Co 99004
4	Co 10031		
5	Co 10033		
6	CoM 10083		
7	CoT 10368		
8	CoT 10369		
9	CoVc 10061		
10	PI 10131		
11	PI 10132		

- b) Design. : R. B. D.
- c) Replication : Three
- d) Plot size. : 6.0m X 7.2 m
- e) Seed rate. : 12 eye buds/m.
- f) Fertilizers. : 250:75:188 NPK Kg/ha.
- g) Date of Planting : 10-03-2016

8. Advanced Varietal Trial (Midlate –Ratoon)

Sl no	Clones	CCS (t/ha)	Cane yield (t/ha)	CCS % 11m	Sucrose % (11m)	Brix % (11m)	Purity % (11m)	Pol % cane (11m)	Fibre % (11m)	Extraction % (11m)	NMC at 11 M (‘000/ha)
1	Co 9009	10.223	66.28	15.44	21.90	23.76	92.13	16.89	12.83	55.15	76.37
2	Co 10015	4.8506	33.48	14.47	20.56	22.42	91.63	15.44	14.86	52.67	69.80
3	Filler SNK 07680	12.092	78.75	15.36	21.82	23.76	91.80	16.96	12.28	55.66	55.46
4	Co 10031	4.2212	29.04	14.53	20.71	22.75	91.06	16.55	10.11	45.61	20.49
5	Co 10033	8.6303	60.41	14.29	20.34	22.26	91.49	15.90	11.80	51.22	54.79
6	CoM 10083	9.6723	67.38	14.39	20.68	23.09	89.55	15.70	14.05	53.78	69.03
7	CoT 10368	11.308	85.25	13.11	18.75	20.75	90.30	14.31	13.68	54.80	82.72
8	CoT 10369	13.324	83.54	15.97	22.56	24.26	92.99	17.56	12.15	61.31	67.09
9	CoVc 10061	10.581	69.43	15.30	21.80	23.93	91.10	16.72	13.32	53.22	75.99
10	PI 10131	10.675	64.10	16.70	23.42	24.76	94.57	17.84	13.81	55.43	54.54
11	PI 10132	10.668	67.65	15.75	22.34	24.26	92.00	16.39	16.62	53.25	42.75
Stds											
1	Co 86032	9.87	72.98	13.55	19.43	21.62	90.55	14.95	13.05	54.75	72.61
2	Co 99004	11.112	72.30	15.35	21.57	22.92	94.58	16.60	13.11	55.95	73.42
	SEM	0.56	3.14	0.56	0.75	0.90	2.00	0.56	0.53	3.00	4.91
	CD	1.64	9.15	1.63	2.78	2.62	5.83	1.63	1.54	8.74	14.34
	CV	9.97	8.30	6.47	6.11	6.71	3.77	5.92	6.91	9.60	13.57

Out of eleven test entries CoT10369 and CoT10368 found superior for cane and sugar yields over best standard respectively.

Sl no	Clones	Stalk length (cm)	Stalk diameter (cm)	Single cane weight (kg)	No of tillers (‘000/ha) 120 days	No of tillers (‘000/ha) 90 days
1	Co 9009	139.33	2.62	0.81		
2	Co 10015	123.10	2.15	0.45		
3	Filler SNK 07680	196.20	2.95	1.36		
4	Co 10031	144.33	2.90	1.33		
5	Co 10033	188.00	2.55	1.08		
6	CoM 10083	167.67	2.53	0.94		
7	CoT 10368	181.87	2.46	0.95		
8	CoT 10369	166.60	2.98	1.21		
9	CoVc 10061	174.53	2.57	0.90		
10	PI 10131	143.00	3.07	1.10		
11	PI 10132	214.33	3.09	1.52		
Stds						
1	Co 86032	167.30	2.58	0.98		
2	Co 99004	167.30	2.54	0.96		
	SEM	9.44	0.08	0.12		
	CD	27.55	0.23	0.35		
	CV	9.78	5.05	19.83		

Details of fluff Germination During 2016

Year	Crosses	PC/GC	Self's	No. of seedlings	Present stage					
					C1	C2	C3	C4	C5	C6
2007	37	14	-	13024	697	98	54	08	08 (Proposed for IVT)	06 (Accepted for IVT) CoSnk 13103 released for Northern Karnataka
2008	30	44	-	41131	41131	1500	120	59	06 (Proposed for IVT)	03 (accepted for IVT)
2009	816	1297	--	2113	614	145	66	11	10 (Proposed for IVT)	04 (accepted for IVT)
2010		22	-	1936	314	62	38	17	10 (to be proposed for IVT)	-
2011	32	23	-	1262	800	86	11	10	To be submitted for RR testing	-
2012	41	26	-	3213	28	10	4	4	-	-
2013	28	25	-	3012	527	233	88	-	-	-
2014	24	8	-	4011	431					
2015	26	24	-	5973	Under evaluation					
2016	29	19	-	6140	To be transplanted					

