



E-mail: srsthiruvalla@kau.in

Phone: 0469-2604181

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

No. SRS II/287/07

Dated: 29.06.2015

From,

Professor and Head

To,

Dr. O.K.Sinha,
Project Coordinator,
AICRP on Sugarcane,
Indian Institute of Sugarcane Research,
LUCKNOW- 226 002, U.P.

Sir,

Sub:- KAU-ARS- Thiruvalla- AICRP ON Sugarcane – Annual report 2014-15-reg

I am forwarding herewith the Annual Report of the AICRP (S) (Crop Improvement, Crop Production and Plant Pathology) experiments conducted at this station for the year 2014-15 for necessary action. The reports of Crop Improvement, Crop Production and Plant Pathology have been already sent to the respective PIs. This is for favour of your kind information.

Yours faithfully

Professor and Head

KERALA AGRICULTURAL UNIVERSITY



AICRP ON SUGARCANE

ANNUAL REPORT
2014-2015

Agricultural Research Station, Kallumkal
Thiruvalla, Kerala-689102

Staff position in AICRP on Sugarcane (In position and vacancy)

Cadre	Name	Sanctioned posts	In position	Vacant
Scientific staff				
Assoc. Professor (Pl.Breeding)	Dr. V.R. Shajan	1	1	Nil
Asst. Professor(Agronomy)	Sri. Jayakumar, G	1	1	Nil
Asst. Professor (Pl.Pathology)	Vacant*	1	Nil	1
Technical staff				
Technical Asst.	Vacant	1	Nil	1
Farm Officer Sr. Gr.	Sri. Georgy Joseph	1	1	Nil
Lab. Assistant	Vacant**	1	Nil	1

*Mrs. Aliya Ferzana (As Teaching Asst.On contract basis)

**Sri. Thomas Varghese (On daily wages)

Crop Improvement

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

Annual Report 2014 - 2015

- 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. Sajeena.A., Assistant Professor (Plant Pathology)
4. Technical Programme :

Entries (13) : Co 11001, Co 11004, Co 11016, Co 11017, Co 11018,
CoM 11081, CoM 11082, **CoM 11083**, CoM 11084,
CoN 11071, CoN 11072, CoT 11366 and PI 11131

Standards (3) : Co 85004, Co 94008 and CoC 671

Design : Randomised 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 : 15/01/2014

Crop duration : 10 months

Results:

CCS (t/ha): Clone CoN 11072 (12.38 t/ha) recorded highest CCS (t/ha) and significantly superior to the best standard Co 94008 (9.71 t/ha)

Cane yield (t/ha): Clone CoN 11072 (91.39 t/ha) recorded highest cane yield followed by CoN 11071 (85.70 t/ha), PI 11131(80.56t/ha), CoM 11084 (80.14t/ha), Co 11018 (77.64t/ha) and Co 11004 (76.25 t/ha) and on par with the best standard Co 85004 (83.48 t/ha)

Brix (%): Clones CoM 11081 (21.80 %) recorded highest brix percentage followed by CoN 11072 (21.20 %), CoM 11084 (20.95 %), Co 11001 (20.90 %), Co 11017 (20.40 %), CoT 11366 (20.20 %), CoM 11083 (20.00 %), PI 11131 (19.70 %) and Co 11018 (19.45 %) and on par with the best standard CoC 671 (21.15 %).

Sucrose (%): Clones CoM 11081 (19.88 %) recorded highest sucrose percentage followed by CoN 11072 (19.34 %), CoM 11084 (18.99 %), Co 11001 (18.98 %), Co 11017 (18.54 %), CoT 11366 (18.32 %), CoM 11083 (18.21 %), PI 11131 (17.87 %), Co

11018 (17.65 %), Co 11004 (17.32 %) and Co 11016 (17.20 %) and on par with the best standard CoC 671 (19.09 %).

CCS (%): Clones CoM 11081 (13.95 %) recorded highest sucrose percentage followed by CoN 11072 (13.58 %), Co 11001 (13.30 %), CoM 11084 (13.29 %), Co 11017 (12.99 %), CoT 11366 (12.83 %), CoM 11083 (12.77 %), PI 11131 (12.51 %), Co 11018 (12.36 %), Co 11004 (12.13 %) and Co 11016 (12.03 %) and on par with best standard CoC 671 (13.33 %).

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

Peninsular Zone

1. Initial Varietal Trial (Early)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	Brix % (10 m)	Sucrose % (10m)	Purity % (10m)	CCS % (10m)	Pol % cane (10m)	Extraction % (10m)	Fibre % (10m)	NMC at 10m ('000/ha)
1	Co 11001	8.81	66.25	20.90	18.98	90.00	13.30		63.45		77.08
2	Co 11004	9.24	76.25	19.10	17.32	89.85	12.13		63.69		91.53
3	Co 11016	8.68	72.08	19.00	17.20	89.70	12.03		64.25		81.72
4	Co 11017	9.24	70.98	20.40	18.54	90.05	12.99		58.54		83.75
5	Co 11018	9.60	77.64	19.45	17.65	89.90	12.36		57.25		89.72
6	CoM 11081	9.08	65.00	21.80	19.88	90.45	13.95		61.32		75.42
7	CoM 11082	7.94	68.61	18.25	16.53	89.70	11.56		59.33		74.73
8	CoM 11083	8.80	68.75	20.00	18.21	90.20	12.77		63.85		77.12
9	CoM 11084	10.65	80.14	20.95	18.99	89.85	13.29		59.32		87.51
10	CoN 11071	9.50	85.70	17.50	15.84	89.60	11.08		57.29		94.31
11	CoN 11072	12.38	91.39	21.20	19.34	90.45	13.58		59.83		99.73
12	CoT 11366	8.69	67.78	20.20	18.32	89.90	12.83		56.69		73.64
13	PI 11131	10.13	80.56	19.70	17.87	89.85	12.51		56.75		91.81
Stds											
1	CoC 671	8.95	67.09	21.15	19.09	89.45	13.33		58.62		78.47
2	Co 94008	9.71	83.47	18.40	16.63	89.50	11.63		59.30		95.95
3	Co 85004	9.36	83.48	17.75	16.07	89.65	11.24		56.95		94.45
	CD (0.05 %)	1.679	9.156	1.986	1.876	NS	1.342		NS		15.428
	CV	8.87	6.05	5.01	5.21	0.40	5.33		4.35		8.98

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	Brix % (8 m)	Sucrose % (8 m)	Purity % (8 m)	CCS % (8 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 11001	211	2.71	1.400	15.65	14.12	89.15	9.86	82.78	92.59	52.89
2	Co 11004	224	3.05	1.390	13.70	12.38	89.15	8.65	97.225	100.86	48.22
3	Co 11016	231	3.07	1.510	14.85	13.30	88.50	9.26	86.445	90.81	47.11
4	Co 11017	205	2.83	1.260	16.05	14.22	87.65	9.85	88.335	98.17	58.56
5	Co 11018	208	2.66	1.260	15.10	13.55	88.60	9.44	94.03	99.14	53.67
6	CoM 11081	197	2.88	1.300	17.35	15.49	88.35	10.77	83.5	91.83	44.22
7	CoM 11082	195	2.73	1.200	14.15	12.72	88.75	8.87	81.95	85.57	43.00
8	CoM 11083	228	2.31	1.400	15.70	14.12	88.95	9.85	81.42	85.86	46.67
9	CoM 11084	230	2.82	1.480	17.10	15.25	88.25	10.59	94.37	101.65	40.33
10	CoN 11071	189	2.71	1.080	13.20	11.91	88.95	8.31	98.75	103.36	41.78
11	CoN 11072	236	2.90	1.510	16.85	14.91	87.60	10.32	102.89	106.08	62.56
12	CoT 11366	203	3.06	1.330	15.85	14.24	88.80	9.93	82.17	89.83	47.67
13	PI 11131	230	3.07	1.370	15.15	13.52	88.25	9.40	98.14	105.89	57.78
Stds											
1	CoC 671	214	2.90	1.400	16.95	14.92	87.05	10.30	85.84	95.14	58.89
2	Co 94008	250	2.93	1.500	14.10	12.67	88.70	8.84	101.66	108.60	53.44
3	Co 85004	200	2.75	1.110	13.35	12.02	88.80	8.38	99.915	109.78	76.89
	CD (0.05 %)	22.2	0.337	0.2006	1.951	1.636	NS	1.109	NS	12.065	7.598
	CV	5.13	5.92	7.43	6.34	5.94	0.88	5.79	9.29	6.14	7.26

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

Annual Report 2014 - 2015

- 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. Sajeena.A., 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 : Randomised 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 : 16/01/2014
- Crop duration : 10 months

Results:

CCS (t/ha): No significant difference was observed among the clones for CCC (t/ha)

Cane yield (t/ha): Clones Co 09004 (98.70 t/ha) recorded significantly superior and Co 09007 (92.71 t/ha) and CoN 09072 (85.47 t/ha) on par cane yield (t/ha) compared to the best standard Co 85004 (86.87 t/ha)

Brix (%): None of the test genotypes recorded brix percentage on par with the best standard.

Sucrose (%): None of the test genotypes recorded sucrose percentage on par with the best standard.

CCS (%): None of the test genotypes recorded CCS percentage on par with the best standard.

Sd/-

Sd/-

Signature of the Principal Investigator

Signature of the head of station

2. Advanced Varietal Trial (Early I Plant)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	Brix % (10 m)	Sucrose % (10m)	Purity % (10m)	CCS % (10m)	Pol % cane (10m)	Extraction % (10m)	Fibre % (10m)	NMC at 10m ('000/ha)
1	Co 09004	11.58	98.70	18.40	16.75	90.18	11.75		58.10		118.94
2	Co 09007	10.60	92.71	17.95	16.30	89.90	11.41		61.82		97.96
3	CoN 09072	10.74	85.47	19.75	17.93	89.95	12.56		59.21		98.49
Stds											
1	CoC 671	11.17	81.15	21.63	19.65	90.10	13.77		58.81		85.99
2	Co 94008	10.52	80.52	20.55	18.66	90.03	13.07		62.22		93.80
3	Co 85004	11.25	86.87	20.38	18.48	89.88	12.94		61.32		110.68
	CD (0.05 %)	NS	7.289	1.674	1.556	NS	1.105		NS		9.934
	CV	9.00	5.86	5.96	6.09	0.67	6.18		7.06		4.70

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	Brix % (8 m)	Sucrose % (8 m)	Purity % (8 m)	CCS % (8 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 09004	281	2.90	1.886	13.66	12.20	88.05	8.47	106.02	109.77	54.92
2	Co 09007	308	3.26	1.993	13.35	11.90	87.70	8.26	99.47	100.31	47.04
3	CoN 09072	271	2.79	1.289	15.25	13.59	88.05	9.44	100.05	106.04	63.33
Stds											
1	CoC 671	285	2.80	1.691	16.59	14.86	88.53	10.34	87.71	93.33	52.42
2	Co 94008	307	2.81	1.727	15.45	13.88	88.83	9.68	95.05	101.04	61.58
3	Co 85004	256	2.68	1.306	16.03	14.40	88.85	10.04	112.03	119.84	75.63
	CD (0.05 %)	25.9	0.287	0.1203	0.941	0.902	NS	0.653	7.768	10.021	5.773
	CV	6.41	7.03	5.13	4.40	4.71	0.94	4.91	5.46	6.7115	6.87

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All India Coordinated Research Project on Sugarcane

Annual Report 2014 - 2015

- 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. Sajeena.A., Assistant Professor (Plant Pathology)
- 4. Technical Programme** :
- Entries (14) : Co 11005, Co 11007, Co 11012, Co 11019, Co 11020, Co 11021,
Co 11022, Co 11023, Co 11024, CoM 11085, CoM 11086,
CoM 11087, CoN 11073 and CoN 11074
- Standards (2) : Co 86032 and Co 99004
- Design : Randomised 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 : 07/01/2014
- Crop duration : 12 months

Results:

CCS (t/ha): Clones Co 11023 (12.89 t/ha) recorded highest CCS (t/ha) followed by Co 11020 (12.81 t/ha) and Co 11024 (12.04 t/ha) and significantly superior to the best standard Co 86032 (10.18 t/ha). Other clones except CoN 11074 recorded CCS (t/ha) on par with the best standard.

Cane yield (t/ha): Clones Co 11020 (108.47 t/ha) recorded highest cane yield (t/ha) followed by Co 11024 (96.53 t/ha), Co 11019 (96.25 t/ha), Co 11005 (94.31 t/ha) and Co 11023 (93.89 t/ha) and significantly superior to the best standard Co 86032 (79.31 t/ha). All other clones recorded cane yield (t/ha) on par with the best standard.

Brix(%) : Clones Co 11023 (21.75 %) recorded highest brix percentage followed by Co 11012 (20.35 %), CoM 11085 (19.65 %) and Co 11024 (19.50 %) and on par with best standard Co 86032 (20.40 %).

Sucrose (%): Clone Co 11023 (19.65 %) recorded highest sucrose percentage and significantly superior to best standard Co 86032 (18.41 %). Clones Co 11012 (18.44 %), CoM 11085 (17.87 %) and Co 11024 (17.77 %) recorded sucrose percentage on par with the best standard

CCS (%): Clone Co 11023 (13.73 %) recorded highest CCS percentage and significantly superior to best standard Co 86032 (12.86 %). Clones Co 11012 (12.91 %), CoM 11085 (12.53 %), Co 11024 (17.77 %) and Co 11021 (12.06 %) recorded CCS percentage on par with the best standard

Sd/-

Signature of the Principal Investigator

Sd/-

Signature of the head of station

3. Initial Varietal Trial (Midlate)

S. No.	Clone	CCS (t/ha)	Cane yield (t/ha)	Brix % (12 m)	Sucrose % (12 m)	Purity % (12 m)	CCS % (12 m)	Pol % cane (12m)	Extraction % (12 m)	Fibre % (12 m)	NMC at 12 m ('000/ha)
1	Co 11005	10.74	94.31	18.05	16.30	89.45	11.39		62.45		105.20
2	Co 11007	9.66	85.12	17.80	16.18	90.00	11.34		60.12		96.51
3	Co 11012	9.59	74.31	20.35	18.44	89.85	12.91		58.26		83.89
4	Co 11019	11.14	96.25	18.25	16.53	89.70	11.56		56.88		112.36
5	Co 11020	12.81	108.47	18.55	16.86	90.00	11.81		53.64		116.67
6	Co 11021	9.47	78.61	18.90	17.20	90.15	12.06		59.98		87.25
7	Co 11022	10.32	88.89	18.40	16.63	89.55	11.62		61.77		99.31
8	Co 11023	12.89	93.89	21.75	19.65	89.55	13.73		60.71		98.48
9	Co 11024	12.04	96.53	19.50	17.77	90.30	12.47		57.50		101.67
10	CoM 11085	8.61	68.61	19.65	17.87	90.15	12.53		60.66		86.80
11	CoM 11086	10.14	85.28	18.75	16.98	89.70	11.87		60.37		97.64
12	CoM 11087	9.27	78.06	18.70	16.96	89.85	11.87		65.42		92.36
13	CoN 11073	9.58	82.78	18.25	16.53	89.70	11.56		59.02		105.28
14	CoN 11074	8.58	72.50	18.85	16.96	89.15	11.83		61.44		80.98
Stds											
1	Co 86032	10.18	79.31	20.40	18.41	89.50	12.86		62.62		85.00
2	Co 99004	8.95	76.95	18.40	16.63	89.50	11.63		60.36		90.00
	CD (0.05 %)	1.592	12.353	1.382	1.188	NS	0.818		NS		15.618
	CV	7.73	7.23	3.61	3.43	0.47	3.37		4.77		8.08

S. No.	Clone	Stalk Length (cm)	Stalk Diameter (cm)	Single cane weight (kg)	Brix % (10 m)	Sucrose % (10 m)	Purity % (10 m)	CCS % (10 m)	No. of shoots ('000/ha) 240 days	No. of tillers ('000/ha) 120 days	Germination % (30 days)
1	Co 11005	264	3.07	1.233	14.15	12.72	88.70	8.87	110.82	120.82	73.67
2	Co 11007	239	2.96	1.337	13.95	12.61	89.25	8.82	99.57	107.07	60.00
3	Co 11012	245	3.28	1.489	16.35	14.70	88.95	10.25	87.70	89.51	43.23
4	Co 11019	241	2.94	1.450	14.15	12.72	88.70	8.87	117.28	125.14	49.45
5	Co 11020	247	2.85	1.613	13.65	12.25	88.55	8.54	124.58	126.94	64.89
6	Co 11021	237	2.70	1.337	15.10	13.67	89.40	9.56	90.72	97.66	47.78
7	Co 11022	259	2.56	1.235	15.05	13.54	88.90	9.45	103.34	108.06	60.67
8	Co 11023	239	3.04	1.484	17.65	15.95	89.45	11.15	105.00	107.09	69.78
9	Co 11024	247	2.65	1.493	16.75	15.14	89.45	10.59	107.09	115.84	53.00
10	CoM 11085	241	2.66	1.252	15.40	13.90	89.25	9.71	90.27	95.55	56.78
11	CoM 11086	259	2.60	1.248	15.40	13.90	89.20	9.71	101.26	106.12	66.00
12	CoM 11087	242	2.45	1.303	15.15	13.66	89.05	9.53	95.14	101.25	47.78
13	CoN 11073	271	2.90	1.597	15.50	14.01	89.30	9.79	109.64	120.47	76.22
14	CoN 11074	234	3.07	1.354	15.40	13.89	89.10	9.70	85.98	92.92	46.06
Stds											
1	Co 86032	256	2.85	1.426	16.40	14.81	89.30	10.35	87.95	96.00	46.33
2	Co 99004	250	2.69	1.353	13.80	12.38	88.50	8.62	93.20	95.65	35.89
	CD (0.05 %)	NS	NS	0.2176	2.019	1.851	NS	1.304	14.920	15.594	11.095
	CV	5.52	7.62	7.80	6.59	6.70	0.55	6.77	7.38	7.28	9.84

Fluff 2014

Date of receipt: 21/02/2015

No. of Station Crosses: 17

No. of PCs: 13

Date of sowing: 23/03/2015

No. of Zonal Crosses: 14

No. of GCs: 18

Station crosses					
Sl. No.	Female	Male	Fluff wt	No .of seedling	No of seedling per gram
1	CoC 671	CoV 92102	10.5	185	17.6
2	Co 94012	CoT 8201	21.0	98	4.7
3	Co94007	Co 89003	28.0	25	0.9
4	Co 88025	Co 86249	24.5	40	1.6
5	CoC 671	ISH 136	18.0	26	1.4
6	Co 93020	Co 94005	28.0	39	1.4
7	CoC 671	ISH 229	16.5	60	3.6
8	Co 94012	Co 86249	17.0	42	2.5
9	CoC 90063	Co 97015	11.0	105	9.5
10	Co 86032	CoV 92102	21.5	105	4.9
11	Co 86011	Co 86249	8.0	411	51.4
12	MS 68/47	CoT 8201	23.5	39	1.7
13	Co 87044	SP 80-1842	34.0	162	4.8
14	Thirumadhuram	CoT 8201	7.0	25	3.6
15	Co 86010	Co 86249	13.5	163	12.1
16	Co 8341	SP 80-185	11.0	35	3.2
17	CoM 88121	SP 80-185	14.5	63	4.3
	Total		307.5	1623	
Zonal crosses					
	Female	Male			
1	Co 86002	Co 1148	8	208	26.0
2	Co 0312	Co 0209	7	21	3.0
3	Co 8371	Co 99006	15	184	12.3
4	Co 8371	Co 86011	11	51	4.6
5	Co 8213	Co86011	19	19	1.0
6	ISH 41	Co 94008	7	47	6.7
7	Co 94012	Co 94008	15	66	4.4
8	CoV 94101	Co 97015	65	64	1.0
9	CoC 671	CoT 8201	9.5	55	5.8
10	CoC 671	Co 94008	10.5	70	6.7
11	Co 86032	Co 94005	11	58	5.3
12	Co 86032	Co 86250	7.5	49	6.5
13	CoM 0265	CoC 671	6.5	65	10.0
14	CoM 0265	Co 99006	8	45	5.6
	Total		200	1002	
Poly crosses					

	Female	Male			
1	CoM 0265	Co 775	19	45	2.4
2	ISH 100	Co 99006	28	350	12.5
3	Co 94012	Co 94008	36	27	0.8
4	Co 85002	CoT 8201	27.5	175	6.4
5	CoA 7602	Co 86011	55	53	1.0
6	86V46	CoV 92102	24	25	1.0
7	CoC 671	ISH 69	31.5	42	1.3
8	CP 52-68	Co 93009	11.5	50	4.3
9	Co 2000-10		28.5	76	2.7
10	CoC 90063		30	120	4.0
11	Co 7201		19.5	200	10.3
12	Co 8371		50.5	500	9.9
13	CoV89101		50	80	1.6
	Total		411	1743	4.2
GCs	Female				
1	93 V 297		10	452	45.2
2	Co 87252		6.5	325	50.0
3	Co 419		43	535	12.4
4	Co 62198		57.5	426	7.4
5	Co 7201		10.5	271	25.8
6	Co 7219		40.5	125	3.1
7	Co 8371		6.5	176	27.1
8	Co 85002		15	223	14.9
9	Co 85019		48.5	171	3.5
10	Co 85118		8	168	21.0
11	Co 86032		13.5	352	26.1
12	Co 87023		32.5	122	3.8
13	Co 88025		8	248	31.0
14	Co 94007		8	123	15.4
15	Co 98008		10.5	264	25.1
16	CoC 671		18.5	126	6.8
17	CoTl 85422		15	168	11.2
18	Co 86011		27	212	7.9
	Total		379	4487	11.8
	Grand total			7112	

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	2014	31	31	7112				
2	2013	25	30	11290	5685			
3	2012	32	31	6262	4832	145		
4	2011	32	34	12352	8545	413	56	
5	2010	29	26	6498	4253	158	64	29

Meteorological data during the crop period (January 2014 - December 2014)

Month/year	Temperature (°C)		Rain fall (mm)	Rainy days
	Maximum	Minimum		
January -2014	32.8	22.4	0	0
February – 2014	33.29	23.13	46.4	2
March - 2014	34	24.4	46.6	2
April - 2014	33.4	26.1	101.4	9
May- 2014	32.7	26.3	227.2	9
June - 2014	31.2	25.7	425	22
July - 2014	30.1	24.4	312.6	24
August - 2014	30	24.9	633.1	24
September - 2014	31.1	25.4	271.8	19
October - 2014	31.6	24.8	31.6	13
November - 2014	32.8	24.8	125.2	13
December - 2014	31.7	24.4	21.4	3