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

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No. SRS II/287/07

Dated: 19.06.2014

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-SRS- Thiruvalla- AICRP ON Sugarcane – Annual report 2011-12-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 2013 -14 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 2013-2014

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Sugarcane Research Station, Kallumkal  
Thiruvalla, Kerala-689102

## Staff Position

<b>Discipline</b>	<b>Post/ Designation</b>	<b>Number of sanctioned post</b>	<b>Name of the incumbent</b>	<b>Remarks</b>
Plant Breeding	Associate Professor	1	Dr. Shajan, V.R.	
Plant Pathology	Assistant Professor	1	Dr. Sajeena	
Agronomy	Assistant Professor	1	Smt.Bindhu.J.S.	Up to 19-2- 2014
	Assistant Professor		Sri. Jayakumar, G	From 19-2- 2014
	1. Farm Officer. Gr.II	1	Sri.Georgy Joseph	From 27-11-2013
	2. Lab. Assistant	1	Vacant	Vacant
	3. Technical Officer Gr.II	1	Vacant	Vacant

# Crop Production

KERALA AGRICULTURAL UNIVERSITY  
SUGARCANE RESEARCH STATION, THIRUVALLA

AICRP on Sugarcane –Crop Production

Annual Report for 2013-14

- 1. Name of the project** : **Agronomic evaluation of promising sugarcane genotypes**
- 2. Project No** : AS 42
- 3. Year of start** : 2012-2013 (with new set of genotypes of AVT)
- 4. Objectives** : To work out the agronomy of sugarcane genotypes of advanced varietal trial(AVT).
- 5. Technical Programme**

**Treatments**

A. Varieties

V<sub>1</sub> – CoM 06084, V<sub>2</sub> - Co 6027, V<sub>3</sub> - Co 6012

B. Fertilizer levels

F<sub>1</sub>- 75 percent of the recommended dose of N

F<sub>2</sub>- 100 percent of the recommended dose of N

F<sub>3</sub>- 125 percent of the recommended dose of N

Design - Factorial RBD

Replications -Three

Plot size - 6 x 5.4 m<sup>2</sup>

**6. Results of the experiment for the current year** :

The experiment was conducted with three promising cultures namely, V<sub>1</sub> - CoM 06084, V<sub>2</sub> - Co 6027 and V<sub>3</sub> - Co 6012 and three nitrogen levels – ie., 75(F<sub>1</sub>), 100(F<sub>2</sub>) and 125 % (F<sub>3</sub>) of the recommended dose of N (100% of the recommended dose of N = 165 kg/ha). The crop(plant crop) was planted on 24.01.2013 and harvested on 20.01.2014. For ratoon management, the existing crop was harvested on 28.01.2013.

In the plant crop, growth parameters, cane yield and sugar yield etc. were significantly influenced by the genotypes and mineral nutrition with different doses of nitrogen. Among the varieties tried, the variety Co 6012 (V<sub>3</sub>) recorded maximum values for cane length, cane girth, single cane weight and millable cane count and thus resulted in highest cane yield (92.23 t/ha) and sugar yield (12.00 t/ha).

The yield attributing factors and cane yield were significantly influenced by different levels of nitrogen. Application of N at 125% of R.D (F<sub>3</sub>) had recorded maximum cane yield (85.80 t/ha) and it was significantly superior to mineral nutrition with N at 75%(F<sub>1</sub>) and was on par with N supplementation at 100% of the R.D (F<sub>2</sub>). Similarly maximum sugar yield was also obtained for F<sub>3</sub> (12.00t/ha) which was on par with that of F<sub>2</sub> (10.74t/ha).

The interaction effect between variety and N levels were found significant only for CCS% and sugar yield at harvest.

Similar trend was noticed in the case of ratoon crop also where the growth and yield attributes were significantly influenced by the genotypes and mineral nutrition with varying doses of N. Maximum cane length, cane girth, millable cane count, cane

yield(103.47t/ha) and sugar yield etc. were recorded by the variety Co 6012(V<sub>3</sub>) followed by Co 6027(V<sub>2</sub>).Supplementation of N at 125% of the R.D (F<sub>3</sub>) had resulted in maximum growth and cane yield(97.24t/ha) and was on par with N application at 100% of the R.D. Maximum sugar yield was also obtained for F<sub>3</sub>(11.45 t/ha) which was also on par with that of F<sub>2</sub>(11.18 t/ha).

Interaction effect was not significant.

## 7. Summary

It can be concluded from the study that the genotype Co 6012 is promising as it has recorded the highest cane and sugar yield both in plant crop and ratoon followed by the genotype Co 6027. All the genotypes performed better at 125 % of the recommended dose of N.

Cane yield and juice quality as influenced by varieties and fertilizer levels(plant crop)

Treatments	Cane length (cm)	Cane girth (cm)	Single cane wt (kg)	MCC (‘000/ha)	SMT Brix (%)	CCS (%)	Cane yield (t/ha)	Sugar yield (t/ha)
V <sub>1</sub>	213.81	9.03	1.27	62.21	17.24	13.15	74.93	9.41
V <sub>2</sub>	228.71	9.18	1.46	82.23	18.27	13.20	81.46	10.74
V <sub>3</sub>	243.62	9.47	1.63	90.76	19.63	12.91	92.93	12.00
<b>CD (0.05)</b>	<b>11.85*</b>	<b>NS</b>	<b>0.2*</b>	<b>8.50*</b>	<b>1.50*</b>	<b>0.78*</b>	<b>9.8*</b>	<b>1.30*</b>
F <sub>1</sub>	223.85	9.17	1.40	76.22	18.00	13.32	81.82	10.43
F <sub>2</sub>	228.61	9.22	1.45	77.60	18.32	13.16	81.70	10.72
F <sub>3</sub>	233.68	9.28	1.51	81.37	18.82	12.84	85.80	10.99
<b>CD (0.05)</b>	<b>11.85*</b>	<b>NS</b>	<b>0.2*</b>	<b>8.50</b>	<b>1.50</b>	<b>0.78*</b>	<b>9.8*</b>	<b>1.30*</b>
V <sub>1</sub> F <sub>1</sub>	209.50	9.00	1.22	61.55	17.00	13.20	79.57	9.15
V <sub>1</sub> F <sub>2</sub>	213.10	9.03	1.25	62.18	17.23	13.09	71.77	9.40
V <sub>1</sub> F <sub>3</sub>	218.83	9.06	1.34	62.93	17.50	13.15	73.47	9.67
V <sub>2</sub> F <sub>1</sub>	223.93	9.12	1.42	80.45	17.83	13.67	76.46	10.45
V <sub>2</sub> F <sub>2</sub>	228.47	9.18	1.46	82.57	18.10	13.23	81.46	10.77
V <sub>2</sub> F <sub>3</sub>	233.73	9.24	1.49	83.67	18.87	12.72	86.43	11.00
V <sub>3</sub> F <sub>1</sub>	238.13	9.38	1.56	86.67	19.17	13.07	89.43	11.70
V <sub>3</sub> F <sub>2</sub>	244.16	9.47	1.63	88.06	19.63	13.02	91.87	12.00
V <sub>3</sub> F <sub>3</sub>	248.47	9.54	1.69	97.54	20.10	12.63	97.50	12.32
<b>VxF CD (0.05)</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>1.53*</b>	<b>NS</b>	<b>1.78*</b>

Cane yield and juice quality as influenced by varieties and fertilizer levels(ratoon)

Treatments	Cane length (cm)	Cane girth (cm)	Single cane wt (kg)	MCC (t/ha)	SMT Brix (%)	CCS (%)	Cane yield (t/ha)	Sugar yield (t/ha)
V <sub>1</sub>	222.18	9.21	1.44	72.53	17.54	11.84	83.50	9.90
V <sub>2</sub>	238.25	9.51	1.62	90.76	18.54	11.62	92.49	10.75
V <sub>3</sub>	255.61	9.96	1.85	102.97	19.90	12.32	103.47	12.75
<b>CD (0.05)</b>	<b>12.45*</b>	<b>NS</b>	<b>0.1*</b>	<b>9.20*</b>	<b>1.53*</b>	<b>0.75*</b>	<b>9.5*</b>	<b>1.50*</b>
F <sub>1</sub>	233.16	9.47	1.57	84.92	18.28	11.96	89.79	10.77
F <sub>2</sub>	238.10	9.55	1.63	87.82	18.67	12.07	92.43	11.18
F <sub>3</sub>	244.79	9.66	1.71	93.52	19.03	11.76	97.24	11.45
<b>CD (0.05)</b>	<b>12.45*</b>	<b>NS</b>	<b>0.1*</b>	<b>9.20</b>	<b>1.53</b>	<b>0.75*</b>	<b>9.5*</b>	<b>1.78*</b>
V <sub>1</sub> F <sub>1</sub>	217.93	9.14	1.36	69.09	17.30	11.64	80.70	9.40
V <sub>1</sub> F <sub>2</sub>	221.23	9.21	1.41	71.76	17.53	12.05	83.19	10.05
V <sub>1</sub> F <sub>3</sub>	222.37	9.29	1.54	76.72	17.80	11.83	86.62	10.25
V <sub>2</sub> F <sub>1</sub>	233.57	9.43	1.58	88.22	18.13	11.76	89.24	10.50
V <sub>2</sub> F <sub>2</sub>	238.56	9.49	1.62	90.46	18.50	11.72	91.72	10.75
V <sub>2</sub> F <sub>3</sub>	242.63	9.60	1.68	93.60	19.00	11.39	96.51	11.00
V <sub>3</sub> F <sub>1</sub>	247.95	9.85	1.76	97.43	19.40	12.48	99.43	12.41
V <sub>3</sub> F <sub>2</sub>	254.50	9.93	1.86	101.23	20.00	12.45	102.39	12.75
V <sub>3</sub> F <sub>3</sub>	264.36	10.10	1.93	110.24	20.30	12.06	108.61	13.10
<b>VxF</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>
<b>CD (0.05)</b>								

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Signature of the Principal Investigator

Signature of the Head of Station

KERALA AGRICULTURAL UNIVERSITY  
SUGARCANE RESEARCH STATION, THIRUVALLA

AICRP on Sugarcane –Crop Production

Annual Report for 2013-14

1. Name of the project : **Plant geometry in relation to mechanization in sugarcane**
2. Project No : AS 63
3. Duration of study : 2011-2014
4. Objectives : 1.To work out optimum plant geometry for use of farm machinery.  
2. To study varietal response to different plant geometry.

5. Technical Programme

Treatments

A: Plant Geometry

1. 120cm row distance ( $G_1$ )
2. 150cm row distance ( $G_2$ )
3. 30 x 150cm ( $G_3$ )

B: Genotypes

1.  $V_1$  – CoVSI 5122
2.  $V_2$  – CoSnk 05105
3.  $V_3$  – Co 05007
4.  $V_4$  - Madhuri

Plot size: 6 x 8 m

Design: Split plot

Replications: 4

6. Results of the experiment for the current year :

The experiment was conducted with four genotypes (Co VSI 5122, Co Snk 05105, Co 05007, Madhuri) with different row spacing of  $G_1$  (120cm row distance ),  $G_2$  (150 cm row distance) and  $G_3$  (30 x 150 cm). The crop was planted on 19-2-2013 and harvested on 12-2- 2014.

The results revealed that the MCC, single cane weight, cane yield and sugar yield etc.were significantly influenced by the row spacing. Row spacing of 30x150 cm ( $G_3$ ) recorded the highest MCC (88970/ha), cane (96.67/ha) and sugar yield (10.57 t/ha).

Among the genotypes evaluated, Madhuri ( $V_4$ ) had recorded significantly higher cane girth, MCC, single cane weight followed by the variety Co 05007 ( $V_3$ ). The variety Madhuri recorded the highest cane yield (88.04t/ha) and sugar yield (12.03t/ha).However in cane yield, it was statistically on par with the variety  $V_3$  (Co 05007).

The results of the quality analysis revealed that the variety CoVSI 5122 recorded the highest brix value (18.64%).

The interaction effect between varieties and row spacings were found to be non significant.



## 7. Summary

It can be concluded from the study that the row distance of 30 x 150 cm was found to be suitable for getting maximum cane and sugar yield. The variety Madhuri responded well to different row spacing and it has recorded the highest cane and sugar yield followed by the variety Co 05007.

### Cane yield and juice quality as influenced by plant geometry and genotypes

Treat ment	Cane length (cm)	Cane girth (cm)	MCC ( '000/ ha)	Single cane wt. (kg)	SMT Brix(%)	CCS (%)	Cane yield (t/ha)	Sugar yield (t/ha)
G <sub>1</sub>	221.19	8.90	75.36	1.38	16.97	12.88	81.00	10.46
G <sub>2</sub>	228.08	9.04	83.03	1.48	17.02	11.77	88.07	10.37
G <sub>3</sub>	241.68	9.17	88.97	1.54	17.13	10.97	96.67	10.57
<b>CD (0.05)</b>	<b>9.60*</b>	<b>NS</b>	<b>5.97*</b>	<b>0.1*</b>	<b>NS</b>	<b>NS</b>	<b>3.60*</b>	<b>0.50*</b>
V <sub>1</sub>	222.31	8.46	72.97	1.39	18.64	12.11	74.00	8.98
V <sub>2</sub>	226.40	8.91	79.31	1.46	16.04	11.48	86.94	9.84
V <sub>3</sub>	232.48	9.23	84.30	1.49	16.39	11.53	93.87	10.75
V <sub>4</sub>	240.08	9.55	90.55	1.54	17.09	12.36	95.51	12.22
<b>CD (0.05)</b>	<b>9.20*</b>	<b>0.35*</b>	<b>6.75*</b>	<b>0.11*</b>	<b>NS</b>	<b>NS</b>	<b>4.05*</b>	<b>0.90*</b>
G <sub>1</sub> V <sub>1</sub>	214.70	8.32	60.08	1.32	18.47	12.68	70.83	9.00
G <sub>1</sub> V <sub>2</sub>	218.47	8.75	64.80	1.36	16.10	12.54	79.00	9.93
G <sub>1</sub> V <sub>3</sub>	222.30	9.12	72.66	1.40	16.30	12.74	84.73	10.80
G <sub>1</sub> V <sub>4</sub>	229.30	9.42	70.55	1.47	17.03	13.55	89.43	12.11
G <sub>2</sub> V <sub>1</sub>	217.93	8.45	58.20	1.40	18.63	11.98	75.84	8.85
G <sub>2</sub> V <sub>2</sub>	223.03	8.92	62.29	1.49	16.03	11.35	87.17	9.90
G <sub>2</sub> V <sub>3</sub>	230.93	9.22	68.22	1.51	16.40	11.48	92.76	10.65
G <sub>2</sub> V <sub>4</sub>	240.43	9.55	68.25	1.54	17.00	12.28	98.53	12.10
G <sub>3</sub> V <sub>1</sub>	234.30	8.60	69.44	1.47	18.83	11.70	77.33	9.05
G <sub>3</sub> V <sub>2</sub>	237.70	9.06	72.64	1.54	16.00	10.56	94.66	10.00
G <sub>3</sub> V <sub>3</sub>	244.20	9.34	83.13	1.57	16.47	10.37	104.33	10.80
G <sub>3</sub> V <sub>4</sub>	250.50	9.67	92.11	1.61	17.23	11.26	110.56	12.45
GxV CD(0.05)	NS	NS	NS	NS	NS	NS	NS	NS

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Signature of the Principal Investigator

Signature of the Head of Station

KERALA AGRICULTURAL UNIVERSITY  
SUGARCANE RESEARCH STATION, THIRUVALLA

AICRP on Sugarcane –Crop Production

Annual Report for 2013-14

1. Name of the project - **Response of sugarcane crop to different plant nutrients in varied agro-ecological situations.**
2. Project No : AS 64
3. Year of start : 2011-12
4. Objective : To study differential response of sugarcane crop to different plant nutrients
5. Technical Programme  
Treatments  
T<sub>1</sub> – Control (No fertilizer)  
T<sub>2</sub> – N  
T<sub>3</sub> – NP  
T<sub>4</sub> – NPK  
T<sub>5</sub> – NPK+S  
T<sub>6</sub> – NPK+Zn  
T<sub>7</sub> – NPK+Fe  
T<sub>8</sub> – NPK+Mn  
T<sub>9</sub> – NPK+S+Zn  
T<sub>10</sub> – NPK+S+Zn+Fe  
T<sub>11</sub> – NPK+S+Zn+Fe+Mn  
T<sub>12</sub> – Soil test based fertilizer application  
T<sub>13</sub> - FYM @20 t/ha  
  
Design - RBD.  
Variety - Madhuri.  
Replications - Three.

6. Results of the experiment for the current year:

The experiment was conducted to study the response of sugarcane crop to different plant nutrients. The crop was planted on 7.02.2013 and harvested on 2-2-2014.

The treatment variation due to different combination of plant nutrients were significant for yield parameters, cane and sugar yield. The maximum cane length was obtained from the application of NPK+Zn which was significantly superior to treatments receiving N, NP, NPK+Mn, FYM and control and was on par with all other treatments. Single cane weight, MCC, CCS were found to be statistically significant. Application of soil test based recommendation recorded highest MCC of 100240/ha.

The initial soil fertility status had shown that the soil is medium in available N, high in available P and K and the levels of S, Mn, Fe, and Zn were adequate. Soil sample

analysis after the experiment revealed that the soil status of available N, P, Fe, S, and Zn were statistically influenced by the treatments.

The soil test based recommendations (T<sub>12</sub>) recorded the maximum cane yield(110.08t/ha) and sugar yield(12.85t/ha) and was on par with the recommended dose of NPK+Zn ( T<sub>6</sub> ) . The control plot recorded the lowest sugar and cane yield.

## 7. Summary

It can be concluded that for obtaining higher cane and sugar yield ,fertilizer application as per soil test based recommendations and recommended dose of NPK+Zn (50 kg ZnSO<sub>4</sub> /ha) were found to be the best .

### Cane yield and juice quality as influenced by different plant nutrients

Treatments		Cane length (cm)	Cane girth (cm)	Cane weight (kg)	MCC ('000/ha)	CCS (%)	Cane yield (t/ha)	Sugar yield (t/ha)
T <sub>1</sub>	Control	193.05	9.41	1.15	60.58	13.98	60.08	8.40
T <sub>2</sub>	N	207.25	9.73	1.26	65.13	13.15	67.31	8.85
T <sub>3</sub>	NP	212.13	9.80	1.31	67.75	13.86	72.50	10.05
T <sub>4</sub>	NPK	220.44	9.90	1.33	76.08	13.07	75.33	9.58
T <sub>5</sub>	NPK+S	225.62	9.92	1.35	82.00	12.90	95.33	12.30
T <sub>6</sub>	NPK+Zn	234.78	10.03	1.43	90.06	12.29	102.90	12.42
T <sub>7</sub>	NPK+ Fe	222.81	9.80	1.28	75.18	13.77	73.33	10.10
T <sub>8</sub>	NPK+ Mn	197.00	9.54	1.20	63.44	14.61	71.78	10.52
T <sub>9</sub>	NPK+S+Zn	226.33	9.91	1.34	85.88	11.42	96.33	11.00
T <sub>10</sub>	NPK+S+Zn+Fe	230.17	9.83	1.40	87.62	13.80	87.33	12.05
T <sub>11</sub>	NPK+S+Zn+Fe+Mn	228.96	9.80	1.30	85.96	12.90	81.05	10.43
T <sub>12</sub>	Soil test based application	240.09	10.22	1.50	100.24	11.67	110.08	12.85
T <sub>13</sub>	FYM @20 t/ha	200.22	9.56	1.20	63.92	13.69	66.35	9.08
<b>CD (0.05)</b>		<b>13.75*</b>	<b>NS</b>	<b>0.10*</b>	<b>11.65*</b>	<b>1.20*</b>	<b>10.75*</b>	<b>1.18*</b>

<b>INITIAL FERTILITY STATUS OF THE EXPERIMENTAL SITE</b>						
<b>Available N (Kg/ha soil)</b>	<b>Available P (Kg/ha soil)</b>	<b>Available K (Kg/ha soil)</b>	<b>S (ppm)</b>	<b>Fe (ppm)</b>	<b>Zn (ppm)</b>	<b>Mn (ppm)</b>
287.6	21.5	255.2	5.80	71.42	4.20	8.75

<b>FINAL FERTILITY STATUS OF THE EXPERIMENTAL SITE</b>							
<b>Treat- ments</b>	<b>Available N (Kg/ha soil)</b>	<b>Available P (Kg/ha soil)</b>	<b>Available K (Kg/ha soil)</b>	<b>S (ppm)</b>	<b>Fe (ppm)</b>	<b>Zn (ppm)</b>	<b>Mn (ppm)</b>
T <sub>1</sub>	185.33	17.47	200.37	6.17	195.33	1.57	26.00
T <sub>2</sub>	249.30	19.50	226.73	4.66	205.00	2.03	39.33
T <sub>3</sub>	222.07	21.00	253.93	6.30	105.67	2.21	51.18
T <sub>4</sub>	212.67	20.45	250.66	6.46	173.53	2.26	56.64
T <sub>5</sub>	234.03	20.16	219.60	5.10	100.00	2.50	43.08
T <sub>6</sub>	228.47	22.43	246.75	6.93	244.37	2.40	45.29
T <sub>7</sub>	184.87	15.53	219.43	4.27	262.67	2.20	44.44
T <sub>8</sub>	233.17	15.00	210.33	4.20	189.03	2.10	46.60
T <sub>9</sub>	213.70	20.32	239.23	7.90	88.77	2.02	41.00
T <sub>10</sub>	171.67	17.50	235.60	3.73	229.00	2.93	51.61
T <sub>11</sub>	260.70	19.97	237.03	7.98	303.33	1.96	59.62
T <sub>12</sub>	203.52	18.47	239.03	4.12	160.33	2.41	36.67
T <sub>13</sub>	192.50	22.10	182.87	6.95	150.77	2.05	43.65
<b>CD (0.05)</b>	<b>10.46*</b>	<b>NS</b>	<b>11.10*</b>	<b>NS</b>	<b>14.55*</b>	<b>NS</b>	<b>5.09*</b>

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**Signature of the Principal Investigator**

**Signature of the Head of Station**

KERALA AGRICULTURAL UNIVERSITY  
SUGARCANE RESEARCH STATION, THIRUVALLA

AICRP on Sugarcane –Crop Production

Annual Report for 2013-14

1. Name of the project : **Priming of cane node for accelerating germination**  
2. Project No. : AS 66  
3. Year of start : 2012-2013  
4. Objective :  
1.To find out suitable cane node priming technique.  
2.To assess the effect of cane node on acceleration of germination.

5. Technical Programme

Treatments – 6

T<sub>1</sub>: Un-primed cane node

T<sub>2</sub>: Treating cane node in hot water at 50°C for 2 hours.

T<sub>3</sub>: Treating cane node in hot water (50° C) urea solution (3%) for 2 hours

T<sub>4</sub>: Priming cane node with cattle dung, cattle urine and water in 1:2:5 ratio.

T<sub>5</sub>: Conventional 3-bud sett planting.

\*T<sub>6</sub>: Primed and sprouted cane node (Incubated for four days after priming)

(\*Put the single cane node in the slurry of cattle dung, cattle urine and water for 15 minutes. Take out the buds and put in decomposed FYM and cover it with sugarcane trash for 4-5 days for sprouting.)

Design - RBD,  
Variety - Madhuri  
Replications - Four

6. Results of the experiment for the current year :

The experiment was conducted to find out suitable cane node priming technique and to assess the effect of cane node on acceleration of germination. The crop was planted on 31.01.2013 and harvested on 20.1.2014.

The results revealed that the different priming techniques significantly influenced the germination percentage and shoot population.

Highest germination percentage and maximum shoot population were recorded in 3-bud sett planting (T<sub>5</sub>) which was on par with the treatment of priming cane node in cattle dung, cows urine and water (T<sub>4</sub>).The lowest value for the above parameters were obtained for unprimed cane node (T<sub>1</sub>).

Highest cane length (255.74 cm), MCC (105540/ha), cane yield (108.62 t/ha) and sugar yield (13.32 t/ha) were recorded for the 3 bud sett planting (T<sub>5</sub>) which was on par with the treatment T<sub>4</sub>. But cane girth, single cane weight, CCS% were not significantly influenced by the treatments.

7. Summary

The results revealed that the conventional 3-bud sett planting recorded the highest germination percentage, cane and sugar yield and it was on par with priming cane node with cattle dung, cattle urine and water in 1:2:5 ratio.



**Effect of cane node on acceleration of germination and shoot population**

<b>Treatments</b>		<b>Germination % at 20 DAS</b>	<b>Germination % at 30 DAS</b>	<b>Germination % at 40 DAS</b>	<b>Shoot population at 90 DAS (000/ha)</b>	<b>Shoot population at 120 DAS (000/ha)</b>	<b>Shoot population at 150 DAS (000/ha)</b>
T <sub>1</sub>	Un primed cane node	22.73	40.26	42.00	103.38	127.00	95.00
T <sub>2</sub>	Cane node in hot water at 50° c for 2 hours	22.15	40.45	43.05	114.37	133.10	107.00
T <sub>3</sub>	Cane node in hot water (50° c) Urea solution (3%)for 2 hours	26.03	44.25	47.85	115.00	140.22	105.50
T <sub>4</sub>	Cane node in cattle dung, cows urine and water (1:2:5)	27.97	53.14	55.87	118.60	149.55	110.00
T <sub>5</sub>	3 bud sett	30.35	53.32	56.02	131.30	160.16	110.50
T <sub>6</sub>	Primed and sprouted cane node	18.05	32.73	35.72	99.57	128.75	82.25
<b>CD (0.05)</b>		<b>2.5*</b>	<b>2.79*</b>	<b>3.10*</b>	<b>8.22*</b>	<b>10.65*</b>	<b>11.20*</b>

**Cane yield and juice quality as influenced by cane node priming techniques**

<b>Treatments</b>		<b>Cane length (cm)</b>	<b>Cane girth (cm)</b>	<b>Cane weight (kg)</b>	<b>MCC ('000/ha)</b>	<b>CCS (%)</b>	<b>Cane yield (t/ha)</b>	<b>Sugar yield (t/ha)</b>
T <sub>1</sub>	Un primed cane node	228.17	9.60	1.50	73.75	14.48	78.37	11.17
T <sub>2</sub>	Cane node in hot water at 50° c for 2 hours	243.45	9.26	1.60	89.80	14.08	90.10	12.69
T <sub>3</sub>	Cane node in hot water (50° c) Urea solution (3%))for 2 hours	247.61	9.51	1.62	90.20	12.59	95.20	11.99
T <sub>4</sub>	Cane node in cattle dung, cows urine and water (1:2:5)	250.08	10.12	1.65	104.72	12.35	105.80	13.07
T <sub>5</sub>	3 bud sett	255.74	10.26	1.68	105.54	12.19	108.62	13.32
T <sub>6</sub>	Primed and sprouted cane node	222.99	9.42	1.45	89.13	16.23	80.92	11.50
<b>CD (0.05)</b>		<b>18.76*</b>	<b>NS</b>	<b>NS</b>	<b>9.05*</b>	<b>NS</b>	<b>8.25*</b>	<b>1.70*</b>

S/d

S/d

**Signature of the Principal Investigator**

**Signature of the Head of Station**



