

Programme for the year 2012-2013
Sugarcane agronomy
Content

Expt. No.	Title of the project	Type of project	New/ Cont	Page no
As-42	Agronomic evaluation of promising early sugarcane genotypes ratoon	Aicrp	Cont.	
As 64	Response of sugarcane crop to different nutrients varied agro ecological situations	Aicrp	Cont.	
As 66	Priming of cane node for accelerating germination	Aicrp	New	

Yearly research work plan for the year 2012–13

1	Project no.	As-42 (a) (aircrp)
2	Department	Sugarcane agronomy
3	Project title	Agronomic evaluation of promising sugarcane genotypes ratoon
4	Objectives	To work out agronomy of sugarcane varieties from avt trials
5	Project leader Associate	Mr. N. S. Kambar, agronomist ,aicrp(s), Ars, sankeshwar Mr. S. B. Patil, breeder, aicrp (s), ars, sankeshwar
6	New/continued	Continued for pc-iii
7	Year of start	2010-2011(with change of genotypes)
8	Design	Split plot
9	Treatments	Main – varieties sub - fertilizers V-1 - co 0403 f-1 – 75 % rdf V-2 – cosnk 05102 f -2 – 100 % rdf V-3 - ms 0301 f-3 – 125 % rdf V-4 – co 0409 V-5 - co 94012 V-6 - com 265
10	A) no. Of replication B) plot size C) dor D) doh E) plot no.	3 6 m x 3.6 m (4 rows) 23.02.2012 18.02.2013 11

Soil properties test

Treatments	Ph	Ec Dsm ⁻¹	O.c. %	Soil nutrients available (kg/ha)		
				N	P ₂ O ₅	K ₂ O
Varieties						
V-1 - co 0403	6.7	0.21	0.57	160.0	18.8	309
V-2-cosnk 05102	6.7	0.20	0.57	166.0	21.2	325
V-3 - ms 0301	6.7	0.21	0.56	166.2	19.9	310
V-4 – co 0409	6.7	0.21	0.56	167.2	22.8	318
V-5- co 94012	6.7	0.21	0.57	165.0	20.0	319
V-6- com 265	6.7	0.21	.056	160.3	21.0	318
Fertilizers						
F ₁ -75 % rdf	6.8	0.18	0.55	160.2	18.2	312
F ₂ -100 % rdf	6.7	0.22	0.58	162.0	19.8	316
F ₃ -125 % rdf	6.7	0.22	0.58	163.0	19.6	319
Initial soil	6.7	0.23	0.60	164.0	23.1	330

As 42 (a): agronomic evaluation of promising sugarcane genotypes pooled pc-i and pc-ii (autumn) and ratoon

A) results of ratoon crop (2012-13)

The ratoon crop of pc-ii was initiated during 2012-13 with 6 new genotypes and 3 levels of fertilizers. The results of ratoon crop 2012-13 in presented table–1 to 12.

i. Growth parameter's (table – 1 to 4)

Germination% at 45 days, tillers at 90 days, cane height were non significant with the influence of varieties as well as fertilizers. But cane girth was significantly higher in variety co 94012 (2.33cm)and was on for with com 265 (2.20) over other varieties. Cane girth was significantly superior ware 125% rdf was applied (2.12cm) over 100% rdf fertilizer levels (2.06 cm) and 75% rdf (2.04 cm) interaction effect was non significant

ii. Yield parameter's (table – 5 to 8)

Number of millable cane 000/ha were not influenced by the varieties in ratoon cane. But fertilizer level 125% rdf recorded significantly higher nmc (46200) and was on for with 100% rdf (45250). Single cane weight was significantly higher in com 265 (1.90 kg) and was on for with co 94012 (1.73kg) over other varieties. Significantly higher cane weight was recorded with the application of 125% rdf (1.51 kg) over 100% rdf (1.42 kg) and 75% rdf(1.48 kg) interaction effect was non significant.

ratoon cane yield was significantly higher in com 265 (80.73 t/ha) and was on for with cosnk 05102 (79.11 t/ha) and co 94012 (75.28 t/ha) over other varieties. Increased levels of fertilizers have not influenced the cane yield. Interaction effect was non significant.

ccs yield t/ha was significantly superior in variety co 94012 (11.02 t/ha) and was on per with com 265 (10.54 t/ha), cosnk 05102 (9.59 t/ha) over other varieties tried. Ccs yield t/ha was not significant with the fertilizer levels. Interaction effect was non significant.

iii. Quality parameters (table – 9 to 12)

Brix% was significantly superior in co 0403 (22.67) and par with co 94012 (22.04) and co 0409 (21.58) ms 0301 (21.38) over other varieties. Fertilizers did not influenced the brix%

Pol % was significantly superior in co 94012 (20.60) and was par with co 0403 (19.94), co 0409 (19.87) over other varieties fertilizers did not influenced the pol%

Purity was not influenced either by varieties or fertilizer levels.

Ccs% was significantly superior in co 94012 (14.60) and par with co 0409 (14.01) and ms 0301 (13.85) over other varieties. Fertilizers ware not influenced ccs%. Interaction effect was non significant.

Summary:

In ratoon crop the variety com 265 was superior in cane yield and co 94012 was superior in ccs yield. Varieties did not responded to fertilizers in ratoon crop.

As 42 (a): agronomic evaluation of promising sugarcane genotypes pooled pc-i and pc-ii (autumn)

A) pooled results of pc i and pc ii

The two years data of plant cane i and plant cane ii were pooled and results were presented in table 1 to 12.

I. Growth parameter's (table – 1 to 4)

Germination% at 45 days, tillers at 90 days, cane height were non significant with the influence of varieties as well as fertilizers. But cane girth was significantly higher in variety co 94012 (3.13 cm) and was on par with com 265 (3.01) over other varieties. Cane girth was significantly superior where 125% rdf was applied (2.92 cm) and on par with 100% rdf fertilizer levels (2.88 cm) over 75% rdf (2.84 cm) interaction effect was non significant

ii. Yield parameter's (table – 5 to 8)

Number of millable cane 000/ha were not influenced by the varieties. But fertilizer level 125% rdf recorded significantly higher nmc (71630) and was on par with 100% rdf (70240). Single cane weight was significantly higher in com 265 (2.15 kg) and was on par for co 94012 (2.00 kg) over other varieties. Significantly higher cane weight was recorded with the application of 125% rdf (1.77 kg) and was on par with 75% rdf (1.75 kg) over 100% rdf (1.68 kg) interaction effect was non significant.

pooled cane yield was significantly higher in com 265 (148.88 t/ha) and was on par with co 94012 (135.60 t/ha) over other varieties. Increased levels of fertilizers have influenced significantly and cane yield was higher in 125% rdf (125.82 t/ha) over 100% rdf (117.42 t/ha). Interaction effect was non significant.

ccs yield t/ha was significantly superior in variety co 94012 (19.09 t/ha) and was on par with com 265 (19.75 t/ha), over other varieties tried. Ccs yield t/ha was significantly superior in 125% rdf (16.91 t/ha) and was on par with 70% rdf (16.46 t/ha) over 100% rdf (15.89 t/ha). Interaction effect was non significant.

iii. Quality parameters (table – 9 to 12)

Brix% was significantly superior in co 94012 (22.44) and was on par with co 0409 (21.98) ms 0301 (21.79) over other varieties. Fertilizers did not influence the brix%.

Pol % was significantly superior in co 94012 (21.00) and was on par with co 0403 (20.34), co 0409 (20.27) over other varieties fertilizers did not influence the pol% purity was not influenced either by varieties or fertilizer levels.

Ccs% was significantly superior in co 94012 (14.88) and on par with co 0409 (14.27) and ms 0301 (14.10) over other varieties. Fertilizers were not influenced ccs%. Interaction effect was non significant.

Summary:

In pooled data the variety com 265 was superior in cane yield and co 94012 was superior in ccs yield. Varieties responded up to 125% fertilizers.

The varieties co 94012 and com 265 were good in plant cane as well as ratoon cane (good ratooners).

Table-1: Growth Parameters Of Sugarcane Genotypes As Influenced By Fertilizer Levels On Plant Cane (Pooled) And Ratoon

Treatments	Germination% At 45 Dap			
	2010-11	2011-12	Pooled	Ratoon 2012-13
Varieties (V)				
V-1 - Co 0403	67.12	57.44	62.25	57.25
V-2-Cosnk 05102	66.69	56.88	61.86	56.86
V-3 - Ms 0301	68.90	58.66	63.81	58.11
V-4 – Co 0409	68.26	58.11	63.25	58.25
V-5- Co 94012	67.67	57.77	62.68	57.68
V-6- Com 265	68.93	58.66	63.84	58.84
Cv%	6.75	5.92	6.36	6.91
S.Em +	1.52	1.14	Ns	1.33
C.D. @ 5 %	Ns	Ns	Ns	Ns
Fertilizers (F)				
F1-75 % Rdf	68.04	57.88	63.06	58.06
F2-100 % Rdf	68.09	58.16	63.10	58.10
F3-125 % Rdf	67.63	57.72	62.69	57.69
Cv%	6.75	5.92	6.36	6.91
S.Em +	1.18	0.89	Ns	1.04
C.D. @ 5 %	Ns	Ns	Ns	Ns
Vxf	Ns	Ns	Ns	

TABLE-2: GROWTH PARAMETERS OF SUGARCANE GENOTYPES AS

INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

TREATMENTS	Tillers AT 90 DAP 000/HA			
	2010-11	2011-12	Pooled	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	108	110	109	67.44
V-2-COSNK 05102	111	113	112	70.12
V-3 - MS 0301	108	110	109	60.44
V-4 – CO 0409	112	113	112.5	71.12
V-5- CO 94012	118	110	114	67.12
V-6- COM 265	114	114	114	60.88
CV%	20.95	20.81	20.88	24.83
S.EM +	7.67	7.75	7.71	5.69
C.D. @ 5 %	NS	NS	NS	NS
FERTILIZERS (F)				
F1-75 % RDF	111	113	112	69.93
F2-100 % RDF	109	111	110	68.23
F3-125 % RDF	108	112	110	68.18
CV%	20.95	20.81	20.88	24.8
S.EM +	2.50	2.51	2.505	1.83
C.D. @ 5 %	NS	NS	NS	NS
VXF	NS	NS	NS	NS

TABLE-3: GROWTH PARAMETERS OF SUGARCANE GENOTYPES AS

INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

TREATMENTS	Cane girth in cm			
	2010-11	2011-12	Pooled	Ratoon 2012-13
TREATMENTS	Cane Height in cm			
	2010-11	2011-12	Pooled	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	2.61	2.38	2.50	1.85
V-2-COSNK 05102	2.89	2.68	2.79	1.98
V-3 - MS 0301	2.74	2.61	2.68	1.67
V-4 – CO 0409	2.54	2.37	2.46	1.81
V-5- CO 94012	3.05	2.62	2.84	2.01
V-6- COM 265	3.09	2.70	2.90	2.81
CV%	8.93	13.88	11.41	18.77
S.EM +	0.08	11.87	5.98	5.92
C.D. @ 5 %	0.26	NS	NS	NS
FERTILIZERS (F)				
F1-75 % RDF	2.70	2.54	2.62	1.91
F2-100 % RDF	2.84	2.55	2.70	2.02
F3-125 % RDF	2.92	2.60	2.76	2.05
CV%	8.93	13.88	11.41	18.77
S.EM +	0.03	4.17	2.10	2.08
C.D. @ 5 %	0.09	NS	NS	NS
VXF	NS	NS	NS	NS

TABLE-4: GROWTH PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

VARIETIES (V)				
V-1 - CO 0403	2.64	2.6	2.67	1.86
V-2-COSNK 05102	2.96	2.7	2.87	2.08
V-3 TRS 0301	2.77	2.9	2.85	2.04
V-4 - CO 0409	2.78	2.7	2.75	2.04
V-5 - CO 94012	3.21	3.0	3.13	2.33
VARIETIES (V)				
V-6 - COM 265	3.02	2.9	3.01	2.20
V-7 - CO 0403	69.09	73.71	71.40	46.20
CV%	6.37	12.77	6.85	9.87
V-2 COSNK 05102	67.45	72.07	69.76	44.76
S.E.M +	0.06	0.12	0.06	0.06
V-3 MS 0301	67.70	72.32	70.01	45.07
C.D. @ 5 %	0.19	NS	0.20	0.21
FERTILIZERS (F)				
F1-75 % RDF	2.90	2.78	2.84	2.04
F2-100 % RDF	2.85	2.87	2.88	2.06
F3-125 % RDF	2.93	2.93	2.92	2.12
CV%	0.03	12.77	6.85	9.87
S.E.M +	0.10	0.03	0.02	0.01
C.D. @ 5 %	NS	0.10	0.06	0.05
VXF	NS	NS	NS	NS

TABLE-5: YIELD PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

V-4 – CO 0409	68.06	72.68	70.37	45.37
V-5- CO 94012	66.06	70.69	68.37	43.37
V-6- COM 265	67.14	71.76	69.45	44.44
CV%	4.06	3.80	3.93	6.08
S.EM +	0.91	0.91	0.91	0.91
C.D. @ 5 %	NS	NS	NS	NS
FERTILIZERS (F)				
F1-75 % RDF	65.50	70.12	67.81	42.81
F2-100 % RDF	67.93	72.55	70.24	45.25
F3-125 % RDF	69.32	73.94	71.63	46.62
CV%	4.06	3.80	3.93	6.08
S.EM +	0.67	0.67	0.67	0.67
C.D. @ 5 %	1.96	1.96	1.96	1.95
VXF	NS	NS	NS	NS

TABLE-6: YIELD PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

TREATMENTS	Single cane weight in Kg			
	2010-11	2011-12	Pooled	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	1.57	1.11	1.34	1.08
V-2-COSNK 05102	2.22	1.51	1.86	1.58
V-3 - MS 0301	1.84	1.45	1.65	1.39
V-4 - CO 0409	1.66	1.14	1.40	1.16
V-5- CO 94012	2.39	1.60	2.00	1.73
V-6- COM 265	2.31	1.98	2.15	1.9
CV%	11.98	14.11	11.39	12.97
S.EM +	0.08	0.06	0.06	0.06
C.D. @ 5 %	0.25	0.21	0.20	0.20
FERTILIZERS (F)				
F1-75 % RDF	1.91	1.39	1.75	1.48
F2-100 % RDF	1.97	1.43	1.68	1.42
F3-125 % RDF	2.11	1.58	1.77	1.51
CV%	11.98	14.11	11.39	12.97
S.EM +	0.02	0.04	0.02	0.02
C.D. @ 5 %	0.06	0.01	0.07	0.06
VXF	NS	NS	NS	0.23

TABLE-7: YIELD PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

TREATMENTS	Cane Yield			
	2010-11	2011-12	2012-13	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	109.24	82.31	95.77	45.78
V-2-COSNK 05102	150.04	108.19	129.11	79.11
V-3 - MS 0301	124.80	104.86	114.83	64.82
V-4 - CO 0409	113.43	82.72	98.78	48.07
V-5- CO 94012	157.92	113.28	135.60	75.28
V-6- COM 265	155.61	142.15	148.88	80.73
CV%	10.78	12.30	9.75	11.72
S.E.M +	4.85	4.32	3.91	2.56
C.D. @ 5 %	15.30	13.63	12.32	8.07
FERTILIZERS (F)				
F1-75 % RDF	125.25	100.84	117.89	65.17
F2-100 % RDF	134.00	105.38	117.42	64.25
F3-125 % RDF	146.26	110.53	125.82	67.48
CV%	10.78	12.30	9.75	11.72
S.E.M +	2.46	2.90	2.15	1.61
C.D. @ 5 %	6.55	8.49	6.29	NS
VXF	19.31	NS	NS	NS

TABLE-8: YIELD PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

	2010-11	2011-12	Pooled	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	14.87	11.97	13.42	6.31
V-2- CO 94010 COSANKEN 108	14.18	16.68	15.43	9.59
V-3 - MS 0301	15.92	16.24	16.10	8.00
V-4 - CO 0400	14.69	13.05	13.87	6.73
V-5- CO 94012	21.30	18.60	19.95	11.02
V-6- COM 265	17.62	16.87	19.75	10.54
CV%	12.32	18.92	13.22	15.39
S.E.M +	0.67	1.03	0.72	0.45
C.D. @ 5 %	2.12	3.25	2.28	1.43
FERTILIZERS (F)				
F1-75 % RDF	15.34	15.42	16.46	8.95
F2-100 % RDF	16.37	16.21	15.89	8.62
F3-125 % RDF	17.60	17.57	16.91	9.02
CV%	12.32	18.92	13.22	15.39
S.E.M +	0.83	0.56	0.37	0.23
C.D. @ 5 %	2.44	1.63	1.09	NS
VXF	NS	NS	NS	NS

TABLE-9: QUALITY PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

VARIETIES (V)				
V-1 - CO 0403	22.06	20.06	21.06	22.67
V-2-COSNK 05102	16.54	21.32	18.93	18.54
V-3 - MS 0301	20.30	23.28	21.79	21.38
V-4 - CO 0409	20.43	23.53	21.98	21.58
V-5- CO 94012	21.66	23.22	22.44	22.04
V-6- COM 265	19.01	22.02	20.52	20.11
CV%	3.56	7.86	5.71	4.77
S.EM +	0.23	0.6	0.42	0.33
C.D. @ 5 %	0.74	NS	1.35	1.05
FERTILIZERS (F)				
F1-75 % RDF	22.06	20.06	21.06	21.20
F2-100 % RDF	16.54	21.32	18.93	21.22
F3-125 % RDF	20.30	23.28	21.79	20.95
CV%	3.56	7.86	5.11	4.77
S.EM +	4.37	5.48	5.51	0.12
C.D. @ 5 %	NS	NS	NS	NS
VXF	NS	NS	NS	NS

TABLE-10 : QUALITY PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

TREATMENTS	EOS %			
	2010-11	2011-12	Pooled	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	19.62	21.07	20.34	19.94
V-2-COSNK 05102	14.01	21.08	17.55	17.15
V-3 - MS 0301	18.33	21.80	20.07	19.67
V-4 – CO 0409	18.50	22.04	20.27	19.87
V-5- CO 94012	19.35	22.61	21.00	20.60
V-6- COM 265	16.53	21.34	18.93	18.53
CV%	3.38	8.10	4.73	4.82
S.EM +	0.20	0.58	0.31	0.31
C.D. @ 5 %	0.62	NS	0.97	0.97
FERTILIZERS (F)				
F1-75 % RDF	17.81	22.03	19.93	19.53
F2-100 % RDF	17.76	21.43	19.58	19.18
F3-125 % RDF	17.61	21.51	19.57	19.17
CV%	3.38	8.10	4.73	4.82
S.EM +	0.13	0.25	0.14	0.14
C.D. @ 5 %	NS	NS	NS	NS
VXF	NS	NS	NS	NS

TABLE-11 : QUALITY PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

	2010-11	2011-12	Pooled	Ratoon 2012-13
VARIETIES (V)				
V-1 - CO 0403	13.61	14.5	14.06	13.77
TREATMENTS				
V-2 - COSNK 05102	9.49	15.3	12.40	12.11
V-3 - MS 0301	12.80	15.42	14.10	13.85
V-4 - VARIETIES (V)	12.94	15.6	14.27	14.01
V-5- CO 94012	13.46	16.3	14.88	14.60
V-6- COM 265	11.46	15.3	13.38	13.07
CV%	4.39	11.73	8.06	6.81
S.E.M +	0.18	0.60	0.39	0.30
C.D. @ 5 %	0.56	NS	0.97	0.99
FERTILIZERS (F)				
F1-75 % RDF	12.33	15.7	14.02	13.76
F2-100 % RDF	12.31	15.2	13.76	13.48
F3-125 % RDF	12.18	15.3	13.74	13.47
CV%	4.39	11.73	8.06	6.81
S.E.M +	0.13	0.27	0.20	0.14
C.D. @ 5 %	NS	NS	NS	NS
VXF	NS	NS	NS	NS

TABLE-12 : QUALITY PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE (Pooled) and Ratoon

V-1 - CO 0403	88	87	88	89
V-2-COSNK 05102	84	99	92	93
V-3 - MS 0301	90	93	92	91
V-4 - CO 0409	90	94	92	90
V-5- CO 94012	89	98	94	93
V-6- COM 265	87	97	92	92
CV%	3.56	10.64	6.89	5.84
S.EM +	1.04	3.36	1.76	1.78
C.D. @ 5 %	3.3	NS	NS	NS
FERTILIZERS (F)				
F1-75 % RDF	88	96	92	91
F2-100 % RDF	88	93	91	91
F3-125 % RDF	88	94	91	90
CV%	3.56	10.64	6.89	5.84
S.EM +	0.78	1.57	0.83	0.87
C.D. @ 5 %	NS	NS	NS	NS
VXF	NS	NS	NS	NS

Yearly research work plan for the year 2011–12

1	Project no.	As-62 (aircrp)
2	Department	Sugarcane agronomy
3	Project title	AS-64 : RESPONSE OF SUGARCANE CROP TO DIFFERENT NUTRIENTS VARIED AGRO ECOLOGICAL SITUATION
4	Objectives	TO FIND OUT RESPONSE OF DIFFERENT NUTRIENTS
5	Project leader	MR. N. S. KAMBAR, AGRONOMIST ,AICRP(S), ARS, SANKESHWAR
6	New/continued	NEW
7	Year of start	2010-2011
8	Design	RBD
9	Treatments	12
	<p>Treatments :</p> <ol style="list-style-type: none"> 1. CONTROL (NO FERTILIZER 2. N 3. NP 4. NPK 5. NPK+S 6. NPK+ZN 7. NPK+FE 8. NPK+MN 9. NPK+S+ZN 10. NPK+S+ZN+FE 11. NPK+S+ZN+FE+MN 12. FYM/CSPMC @ 20 T/HA <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE :</p> <p>S: 60 kg /ha</p> <p>ZN : 50 KG /HA</p> <p>FE : 12.5 KG /HA</p> <p>MN : 10 KG / HA</p> <p>NPK: 250 : 75 :190 KG / HA</p> </div>	
10	A) no. Of replication B) plot size C) dop D) plot no.	3 6 rows of 6 m (5.4 x 6m) 23.12.2010 11

Nutrient availability before planting

Treatments	Ph	Ec Dsm ⁻¹	O.c. %	Soil nutrients available (kg/ha)		
				N	P ₂ O ₅	K ₂ O
Varieties						
1	6.7	0.21	0.57	260.0	18.8	309
2	6.7	0.20	0.57	266.0	21.2	325
3	6.7	0.21	0.56	266.2	19.9	310
4	6.7	0.21	0.56	267.2	22.8	318
5	6.7	0.21	0.57	265.0	20.0	319
6	6.7	0.21	.056	260.3	21.0	318
7	6.8	0.18	0.55	260.2	18.2	312
8	6.7	0.22	0.58	262.0	19.8	316
9	6.7	0.22	0.58	263.0	19.6	319
10	6.7	0.23	0.60	264.0	23.1	330
11	6.7	0.21	0.56	267.2	22.8	318
12	6.7	0.22	0.58	263.0	19.6	319

As-64 : response of sugarcane crop to different nutrients varied agro ecological situation

This experiment was started during 2011-12. Two year pooled result were presented in table 1,2,3 ,4, 5 and 6

1. Growth parameter (table 1)

Germination % was significantly superior in T6 NPK+Zn (60.02%) and was on par with T8 Npk+Mn (59.06%) T12 FYM/CSPMC @ 20 t/ha (58.06%) T9 NPK+S+ZN (59.6%) and T10 Npk+S+Zn+Fe (57.06%) over control t1 control (no fertilizer) (52.1%).

Tillers were significantly superior in T9 Npk+S+Zn (123780/ha), T8 Npk+S+Zn (119980/ha), over T1 control (no fertilizer) (78560/ha). Cane height and cane girth were not influenced by the nutrients treatments.

2. Yield parameters (table2)

There was significant difference in number of millable canes. T10 Npk+S+Zn+Fe recorded significantly higher NMC (101300/ha) and was on par with T13 Soil test based (98000 /ha) over other treatments and control T1 (82000/ha)

There was significant difference in single cane weight T10 Npk+S+Zn+Fe recorded significantly higher single cane weight (1.92kg) and was on par with T9 Npk+S+Zn (1.85 kg) T13 Soil test based (1.80 kg) over other treatments and control (0.77kg)

Significantly higher cane yield was recorded in T13 soil test based (120.83 t/ha) followed by T10 Npk+S+Zn+Fe(118.90t/ha) and T11 Npk+S+Zn+Fe +Mn (113.00 t/ha) over T1 control (no fertilizer) (53.23t/ha)

CCS yield was significantly superior in T13 soil test based (16.53t/ha) followed by T10 Npk+S+Zn+Fe(16.23t/ha) and T11 Npk+S+Zn+Fe +Mn (15.95 t/ha) T12 FYM/CSPMC @ 20 t/ha(16.04 T/HA) over T1 control (no fertilizer) (7.42t/ha).

3. Quality parameters (table 3)

Quality parameters like brix, was non significant. Pol%, was significantly higher in T12 FYM/CSPMC @ 20 t/ha(21.94%) over control (20.13 %). Purity% was significantly higher in T12 FYM/CSPMC @ 20 t/ha (93%) over control (88%) and CCS % was significantly superior in T12 FYM/CSPMC @ 20 t/ha (15.53%) over control (13.89%)

Conclusion:

Application of balanced recommended fertilizers (RDF NPK 250; 75; 190; kg/ha) along with sulphur 60 kg /ha+ zinc 50kg /ha + ferrous12.5 kg /ha will give higher cane yield and CCS yield. Similarly application of fertilizers and soil test basis is good practice for getting higher yield

Table - 1 : Growth Parameters as influenced by different sources of Nutrients

TREATMENTS	GERMINATION %			Tiller at 90 days 000/ha		
	2011-12	2012-13	Pooled	2011-12	2012-13	Pooled
T 1 - Control (No Fertilizer)	51.54	52.7	52.1	77	80.13	78.56
T 2 - N	52.39	53.55	52.9	80	83.52	81.76
T 3 - NP	52.00	53.16	52.5	85	89.82	87.41
T 4 - NPK	52.78	53.93	53.3	111	114.88	112.94
T 5 - NPK+S	54.39	55.55	54.9	117	120.22	118.61
T 6 - NPK+Zn	59.64	60.80	60.2	115	118.88	116.94
T 7 - NPK+Fe	55.63	56.79	56.2	108	111.49	109.745
T 8 - NPK+Mn	59.03	60.18	59.6	118	121.96	119.98
T 9 - NPK+S+Zn	57.10	58.26	57.6	122	125.56	123.78
T 10 - NPK+S+Zn+Fe	56.48	57.63	57.06	113	116.83	114.915
T 11 - NPK+S+Zn+Fe+Mn	54.16	55.32	54.74	112	115.8	113.9
T 12 - FYM/CSPMC @ 20 T/Ha	58.02	59.18	58.60	111	114.98	112.99
T 13 - Soil test based		55.24	55.24		107.08	107.08
CV%	5.79	5.45	5.73	5.17	4.94	3.00
S.EM +	1.84	1.77	1.84	3.36	3.28	1.81
C.D. @ 5 %	5.42	5.17	5.42	9.86	9.58	5.33

Table - 2 : Growth Parameters as influenced by different sources of Nutrients

TREATMENTS	Cane Height in cm			Cane girth in cm		
	2011-12	2012-13	Pooled	2011-12	2012-13	Pooled
T 1 - Control (No Fertilizer)	284	276	280	2.30	2.40	2.35
T 2 - N	278	270	274	2.31	2.41	2.36
T 3 - NP	288	280	284	2.33	2.42	2.38
T 4 - NPK	277	269	273	2.32	2.43	2.38
T 5 - NPK+S	286	278	282	2.26	2.36	2.31
T 6 - NPK+Zn	274	266	270	2.27	2.38	2.33
T 7 - NPK+Fe	269	261	265	2.40	2.50	2.45
T 8 - NPK+Mn	273	265	269	2.40	2.33	2.37
T 9 - NPK+S+Zn	285	277	281	2.42	2.43	2.43
T 10 - NPK+S+Zn+Fe	284	276	280	2.26	2.36	2.31
T 11 - NPK+S+Zn+Fe+Mn	280	272	276	2.30	2.40	2.35
T 12 - FYM/CSPMC @ 20 T/Ha	281	273	277	2.16	2.26	2.21
T 13 - Soil test based		261	261		2.53	2.53
CV%	5.42	5.78	5.50	7.99	7.42	7.66
S.EM +	8.76	9.25	8.76	0.10	0.10	0.106
C.D. @ 5 %	NS	NS	NS	NS	NS	ns

Table - 3 : Yield Parameters as influenced by different sources of Nutrients

TREATMENTS	NMC 000/HA			Single cane weight in kg		
	2011-12	2012-13	Pooled	2011-12	2012-13	Pooled
T 1 - Control (No Fertilizer)	80	83	82.00	0.76	0.78	0.77
T 2 – N	81	84	82.6	1.06	1.9	1.48
T 3 – NP	83	86	84.6	1.03	1.8	1.42
T 4 – NPK	86	89	88.3	1.80	1.7	1.75
T 5 - NPK+S	85	88	87.0	1.86	1.8	1.83
T 6 - NPK+Zn	87	90	89.3	1.76	1.7	1.73
T 7 - NPK+Fe	89	92	90.6	1.70	1.9	1.80
T 8 - NPK+Mn	80	83	82.0	1.78	1.8	1.79
T 9 - NPK+S+Zn	90	93	91.6	1.80	1.9	1.85
T 10 - NPK+S+Zn+Fe	99	102	101.3	2.03	1.8	1.92
T 11 - NPK+S+Zn+Fe+Mn	94	97	96.0	1.86	1.6	1.73
T 12 - FYM/CSPMC @ 20 T/Ha	84	87	86.0	1.81	1.7	1.76
T 13 - Soil test based		98	98.0		1.8	1.8
CV%	2.86	2.76	2.71	7.90	6.96	7.66
S.EM +	1.34	1.44	1.38	0.08	0.07	0.08
C.D. @ 5 %	3.94	4.22	4.05	0.28	NS	0.25

Table - 4 : Yield Parameters as influenced by different sources of Nutrients

TREATMENTS	Cane Yield t/ha			CCS Yield t/ha		
	2011-12	2012-13	Pooled	2011-12	2012-13	Pooled
T 1 - Control (No Fertilizer)	56.20	50.30	53.23	9.44	6.98	7.42
T 2 – N	67.81	62.52	65.03	10.35	8.49	8.89
T 3 – NP	69.56	64.03	66.83	10.76	8.82	9.27
T 4 – NPK	102.05	98.56	100.73	14.15	13.52	13.89
T 5 - NPK+S	101.12	97.63	99.55	14.21	13.59	13.92
T 6 - NPK+Zn	103.28	99.69	101.74	13.95	13.28	13.66
T 7 - NPK+Fe	104.82	101.33	103.50	14.70	14.08	14.45
T 8 - NPK+Mn	96.09	73.09	84.80	13.56	10.26	11.93
T 9 - NPK+S+Zn	105.64	112.42	109.75	14.99	15.77	15.49
T 10 - NPK+S+Zn+Fe	115.29	122.07	118.90	15.86	16.59	16.23
T 11 - NPK+S+Zn+Fe+Mn	109.75	116.52	113.00	15.58	16.35	15.95
T 12 - FYM/CSPMC @ 20 T/Ha	99.75	106.57	103.21	15.59	16.47	16.04
T 13 - Soil test based		120.83	120.83		16.53	16.53
CV%	12.27	11.83	6.51	4.07	12.05	7.31
S.EM +	1.34	6.44	3.50	0.33	0.91	0.5
C.D. @ 5 %	3.93	18.80	10.28	0.99	2.66	1.62

Table - 5 : QUALITY Parameters as influenced by different sources of Nutrients

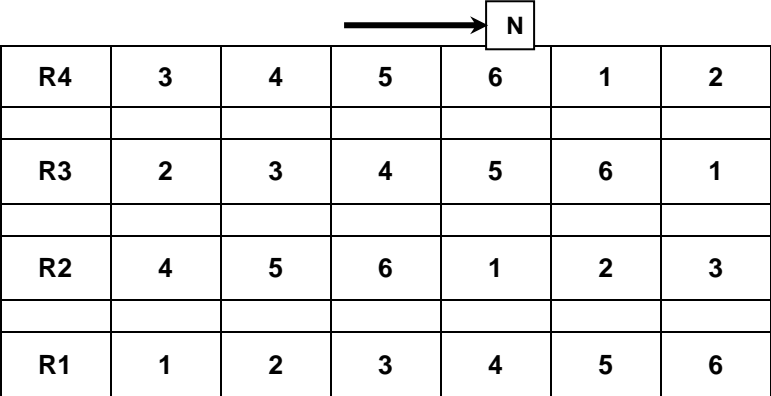
TREATMENTS	BRIX %			POL %		
	2011-12	2012-13	Pooled	2011-12	2012-13	Pooled
T 1 - Control (No Fertilizer)	22.96	22.50	22.85	20.24	19.73	20.13
T 2 – N	23.06	22.63	22.95	20.80	19.97	19.97
T 3 – NP	23.46	22.53	23.35	20.37	19.88	20.26
T 4 – NPK	23.33	23.03	23.22	20.23	19.90	20.12
T 5 - NPK+S	23.43	22.93	23.32	20.45	19.95	20.34
T 6 - NPK+Zn	23.49	23.06	23.38	19.94	20.23	19.83
T 7 - NPK+Fe	23.26	23.50	23.15	20.37	19.76	20.26
T 8 - NPK+Mn	23.53	23.36	23.42	20.53	20.20	20.42
T 9 - NPK+S+Zn	23.89	23.56	23.78	20.72	20.58	20.61
T 10 - NPK+S+Zn+Fe	23.36	23.06	23.25	20.13	20.14	20.02
T 11 - NPK+S+Zn+Fe+Mn	23.66	23.63	23.55	20.65	20.41	20.54
T 12 - FYM/CSPMC @ 20 T/Ha	23.69	23.03	23.58	22.05	20.33	21.94
T 13 - Soil test based		23.33	25.33		20.71	20.71
CV%	2.92	2.89	2.93	2.61	3.12	2.62
S.EM +	0.39	0.38	0.39	0.30	0.36	0.30
C.D. @ 5 %	NS	NS	NS	0.90	NS	0.90

Table - 6 : QUALITY Parameters as influenced by different sources of Nutrients

TREATMENTS	CCS %			PURITY %		
	2011-12	2012-13	Pooled	2011-12	2012-13	Pooled
T 1 - Control (No Fertilizer)	13.98	13.60	13.89	88	88	88.00
T 2 – N	13.79	13.80	13.70	87	87	87.00
T 3 – NP	13.96	13.73	13.88	87	86	86.50
T 4 – NPK	13.86	13.61	13.78	86	86	86.00
T 5 - NPK+S	14.05	13.69	13.97	87	87	87.00
T 6 - NPK+Zn	13.51	13.94	13.43	85	85	85.00
T 7 - NPK+Fe	14.02	13.33	13.94	87	87	87.00
T 8 - NPK+Mn	14.11	13.83	14.02	87	87	87.00
T 9 - NPK+S+Zn	14.20	14.15	14.11	87	86	86.50
T 10 - NPK+S+Zn+Fe	13.75	13.84	13.67	86	86	86.00
T 11 - NPK+S+Zn+Fe+Mn	14.20	13.96	14.11	87	87	87.00
T 12 - FYM/CSPMC @ 20 T/Ha	15.62	14.06	15.53	93	93	93.00
T 13 - Soil test based		14.36	14.36		88	88.00
CV%	2.98	3.89	2.98	2.01	1.95	1.98
S.EM +	0.24	0.31	0.24	1.01	0.98	1.00
C.D. @ 5 %	0.71	NS	0.70	2.98	2.87	2.93

TREATMENTS	pH	EC DSM-1	O.C. %	SOIL NUTRIENTS AVAILABLE (KG/HA)		
				N	P2O5	K2O
1	6.7	0.21	0.57	260.0	18.8	309
2	6.7	0.20	0.57	266.0	21.2	325
3	6.7	0.21	0.56	266.2	19.9	310
4	6.7	0.21	0.56	267.2	22.8	318
5	6.7	0.21	0.57	265.0	20.0	319
6	6.7	0.21	.056	260.3	21.0	318
7	6.8	0.18	0.55	260.2	18.2	312
8	6.7	0.22	0.58	262.0	19.8	316
9	6.7	0.22	0.58	263.0	19.6	319
10	6.7	0.23	0.60	264.0	23.1	330
11	6.7	0.21	0.56	267.2	22.8	318
12	6.7	0.22	0.58	263.0	19.6	319
13	6.8	0.22	0.59	260.2	20.1	322

Yearly research work plan for the year 2012-2013

1	PROJECT NO.	AICRP																																																	
2	DEPARTMENT	SUGARCANE AGRONOMY																																																	
3	PROJECT TITLE	AS-66 PRIMING OF CANE NODE FOR ACCELERATING GERMINATION																																																	
4	OBJECTIVES	<ol style="list-style-type: none"> 1. TO FIND OUT SUITABLE CANE NODE PRIMING TECHNIQUE 2. TO ACCESS THE EFFECT OF CANE NODE ON ACCELERATION OF GERMINATION 																																																	
5	PROJECT LEADER ASSOCIATE	MR. N. S. KAMBAR, AGRONOMIST, AICRP (S)																																																	
6	NEW/CONTINUED	PLANT CANE I																																																	
7	YEAR OF START	2012-2013																																																	
8	dESIGN	RBD																																																	
9	Treatment details	<div style="text-align: center; margin-bottom: 10px;">  <p>The diagram shows a 7x7 grid. The columns are labeled R4, 3, 4, 5, 6, 1, 2 from left to right. The rows are labeled R3, R2, R1 from top to bottom. An arrow points from the top-right cell (R4, 6) to a box containing the letter 'N'.</p> </div> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">R4</td> <td style="width: 10%;">3</td> <td style="width: 10%;">4</td> <td style="width: 10%;">5</td> <td style="width: 10%;">6</td> <td style="width: 10%;">1</td> <td style="width: 10%;">2</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>R3</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>1</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>R2</td> <td>4</td> <td>5</td> <td>6</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>R1</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> </table> <p>T1 : un-primed cane node T2 : Treating cane node in hot water in 50° c for 2 hrs. T3 : treating cane node in tot water (50°) in urea solution (3%) for 2 HRS T4 : priming cane node with cattle dung, cattle urine and water in 1:2:5 ratio T5 : conventional 3 bud sett planting T6 : primed and spouted cane node (incubated for four days after priming) (PUT THE SINGLE CANE NODE IN THE SLURRY OF CATTLE DUNG 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)</p>	R4	3	4	5	6	1	2								R3	2	3	4	5	6	1								R2	4	5	6	1	2	3								R1	1	2	3	4	5	6
R4	3	4	5	6	1	2																																													
R3	2	3	4	5	6	1																																													
R2	4	5	6	1	2	3																																													
R1	1	2	3	4	5	6																																													
10	A) NO. OF REPLICATION B) pLOT SIZE C) DATE OF PLANTING D) PLOT NO.	3 5.4 X 6 m 03.03.2012 398/A																																																	

This trial was initiated during 2012-13 but germination was recorded at 60 days is as detailed below

	Treatments	Average of 4 replication
T1	Un-primed cane node	48% germination
T2	Treating cane node in hot water in 50° c for 2 hrs.	No germination
T3	Treating cane node in tot water (50°) in urea solution (3%) for 2 hrs	No germination
T4	Priming cane node with cattle dung, cattle urine and water in 1:2:5 ratio	20% germination
T5	Conventional 3 bud sett planting	46% germination
T6	Primed and spouted cane node (incubated for four days after priming)	55% germination

Conclusion: As the germination was affected with hot water treatment in treatment No. T2 and T3 and poor germination in T4
SO THE TRIAL WAS VITIATED

Comments received during Agronomist Meet of U.A.S., Dharwad

1. It is highly impossible to treat the 12000 No.s setts of 3 eye bud or 6000 setts of single bud in 50° C hot water for two hours for the farmers.
2. Cowdung and urine ware not available with all sugarcane growers.

N.S. Kambar
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