PROGRAMME FOR THE YEAR 2014-2015
SUGARCANE AGRONOMY

CONTENT

YEARLY RESEARCH WORK PLAN FOR THE YEAR 2014–15

1	PROJECT NO.	AS-42 (AICRP(S)
2	DEPARTMENT	SUGARCANE AGRONOMY
3	PROJECT TITLE	**AGRONOMIC EVALUATION OF PROMISING SUGARCANE GENOTYPES PC-II (OCTOBER)**
4	OBJECTIVES	TO WORK OUT AGRONOMY OF SUGARCANE VARIETIES FROM AVT TRIALS
5	PROJECT LEADER ASSOCIATE	DR. B.T. NADAGOUDA, AGRONOMIST, AICRP(S), ARS, SANKESHWAR DR. S. B. PATIL, BREEDER, AICRP(S), ARS, SANKESHWAR
6	NEW/CONTINUED	CONTINUED FOR PC-II
7	YEAR OF START	2010-2011(WITH CHANGE OF GENOTYPES)
8	Design	SPLIT PLOT
9	Treatments	Main – **VARIETIES** SUB - FERTILIZERS **V-1** - Co 7008 **F-1** – 75 % RDF **V-2** – Co 86032 **F -2** – 100 % RDF **V-3** - CoSNK 07103 **F-3** – 125 % RDF **V-4** – CoSNK 07131 **V-5**- Co 7015 **V-6**- Co 94012
10	a) No. of Replication b) Plot size c) DOP d) DOH	3 6 m x 3.6 m (4 rows) **12.12.2013** **11.02.2015**

SOIL PROPERTIES TEST

TREATMENTS	**PH**	**EC DSM^{-1}**	**O.C. %**	**SOIL NUTRIENTS AVAILABLE (KG/HA)**		
				N	**P_2O_5**	**K_2O**
VARIETIES						
V-1 - Co 7008	6.7	0.22	0.57	163.0	19.8	319
V-2- Co 86032	6.7	0.20	0.58	166.0	21.2	325
V-3 - CoSNK 07103	6.8	0.21	0.56	166.2	19.9	318
V-4 – CoSNK 07131	6.6	0.22	0.57	165.2	23.8	318
V-5- Co 7015	6.7	0.21	0.57	165.0	20.0	319
V-6- Co 94012	6.7	0.21	.056	168.3	21.0	318
FERTILIZERS						
F_1-75 % RDF	6.8	0.18	0.55	160.2	23.2	322
F_2-100 % RDF	6.7	0.22	0.57	162.0	19.8	316
F_3-125 % RDF	6.6	0.21	0.59	166.0	19.6	319
INITIAL SOIL	6.7	0.23	0.60	164.0	22.1	330

AS-42: AGRONOMIC EVALUATION OF PROMISING SUGARCANE GENOTYPES PC-II (OCTOBER)

1. Growth parameters (Table. 1 & 2)

Number of clumps /ha.: Clumps per hectare did not differ significantly among the varieties at 100 % and 125% RDF. However, there was significant difference among the varieties in the treatment 75% RDF. Significantly higher number of clumps were recorded in (CoSNK 07103) (23997) and the lowest number was recorded in Co 94012 (16204).

Number of tillers /ha. : Number of tillers did not differe significantly at 100 % & 125% RDF applied treatments. There was significant difference in the tiller number among the varieties at 75% RDF applied plots. The highest number was recorded in CoSNK 07103 (184198) and the lowest number was recorded in Co 94012 (124506).

Cane height (m) : Cane height differed significantly among the varieties for different fertilizer doses. The higher cane height was recorded in Co 94012 (3.004) with 100% RDF application followed by 125% RDF application (2.822). The lowest cane height was recorded in CoSNK 07131 (1.848).

Number of internodes : There was no significant variations among the varieties for different fertilizer levels for number of internodes.

2. Yield parameters (Table. 2 & 3)

Cane girth (cm): Cane girth did not differ significantly among the varieties for higher fertilizer dose of 125%. However, there was response for 100% and 75% RDF. The highest cane girth was recorded in Co 7008 (3.123) at 125% RDF and the lowest was recorded in Co 7015 (2.723).

Number of millable canes (NMC)/ha. : Number of millable canes per hectare at 100% and 125% RDF was non significant among the varieties. However, there was significantly difference in 75% RDF applied plots. The highest NMC was recorded in CoSNK 07103 (127623) and the lowest was recorded in Co 94012 (86111).

Cane yield (t/ha.): Cane yield was not influenced by varieties at higher doses of fertilizer application (100% & 125%). However, there were significant differences in yield levels among the varieties at lower doses of fertilizer. Significantly the higher cane yield was recorded in Co 7015 (217.99) at 75% RDF application and the lowest yield was recorded in Co 94012 (168.17).

3. Quality parameters (Table. 4&5)

All the quality parameters tested differed significantly among the varieties for all the fertilizer doses, except the CCS yield which did not differ at 100% & 125% RDF.

The higher juice weight was recorded in Co 94012 (1.205) with 100% RDF application and the lowest juice weight was recorded in Co 7015 (0.754) with 100% RDF application.

Brix percent was highest in Co 94012 (24.84) with 100% RDF and the lowest was recorded in Co 86032 (22.44) with 100% RDF.

Pol percent was highest in Co 94012 with 100 % & 125% RDF (23.97) and the lowest was recorded in CoSNK 07103 (2037) with 100% RDF.

Juice purity (%) was highest in Co 7015 (96.73) with 125% RDF and the lowest was recorded in Co SNK 07103 (89.03) with 100% RDF application.

CCS yield did not differ significantly at 100 % & 125% RDF. The significant difference in CCS yiled with 75% RDF was recorded with Co 7015 (34.29) as highest and with Co 86032 (23.59) as lowest.

Table-1: GROWTH PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE

Varieties/RDF	Number of Clumps/ha			Number of Tillers /ha at 150 DAP		
	75%	100%	125%	75%	100%	125%
Co 7008	20597	20087	16538	157613	154218	126687
Co 86032	21610	20139	19697	166214	154414	149702
Co SNK 07103	23997	18138	19378	184198	137603	146533
Co SNK 07131	21163	17155	19172	162202	131502	146276
Co 7015	21425	20694	19403	164640	159414	149918
Co94012	16204	16944	16029	124506	130525	123940
CV	6.26	18.62	23.05	6.41	18.99	22.64
S.EM+	752.66	2027.33	2445.02	5920.31	15853.87	18368.99
CD (5%)	2371.68	NS	NS	18655.26	NS	NS

Table-2: GROWTH PARAMETERS OF SUGARCANE GENOTYPES AS INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE

Varieties/RDF	Cane height (m)			Cane girth (cm)			Number of internodes		
	75%	100%	125%	75%	100%	125%	75%	100%	125%
Co 7008	2.254	2.453	2.240	3.095	3.083	3.123	24.107	24.64	23.55
Co 86032	2.477	2.439	2.398	2.884	2.865	2.820	24.530	24.99	23.87
Co SNK 07103	2.239	2.362	2.188	2.871	2.838	2.817	23.773	25.00	23.11
Co SNK 07131	1.848	2.187	2.111	2.842	3.033	2.984	22.543	22.55	23.09
Co 7015	2.648	2.293	2.525	3.058	2.723	2.886	25.333	22.55	22.44
Co94012	2.764	3.004	2.822	2.977	3.017	2.914	24.110	22.65	23.33
CV	3.21	2.62	1.43	3.57	5.19	6.50	6.93	7.92	8.51
S.EM+	0.04	0.04	0.02	0.06	0.09	0.11	0.96	1.09	1.14
CD (5%)	0.14	0.12	0.06	0.19	0.28	NS	NS	NS	NS

Table-3: YIELD AND YIELD ATTRIBUTES OF SUGARCANE GENOTYPES INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE

Varieties/RDF	Single Cane weight (Kg)			NMC/ha			Cane yield (t/ha)		
	75%	100%	125%	75%	100%	125%	75%	100%	125%
Co 7008	1.61	1.74	1.73	109877	107407	88426	176.77	186.36	153.20
Co 86032	1.57	1.75	1.53	115278	106481	103241	181.29	185.97	157.77
Co SNK 07103	1.61	1.70	1.66	127623	97840	103549	205.33	166.87	171.83
Co SNK 07131	1.60	1.73	1.72	112037	91512	101543	179.81	158.40	174.45
Co 7015	1.93	1.36	1.70	113889	110185	103086	217.99	152.06	174.68
Co 94012	1.97	2.12	2.06	86420	90741	86111	168.17	188.98	173.08
CV	9.24	11.18	8.40	6.03	17.81	22.17	10.02	19.43	21.60
S.EM+	0.09	0.11	0.08	3859.77	10352.51	12501.11	10.89	19.42	20.89
CD (5%)	0.29	0.35	0.26	12162.39	NS	NS	34.3	NS	NS

Table-4: QUALITY PARAMENTRS OF SUGARCANE GENOTYPES INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE

Varieties/RDF	Juice Weight (Kg)			Corrected Brix (%)			Corrected pol (%)		
	75%	100%	125%	75%	100%	125%	75%	100%	125%
Co 7008	0.939	0.986	1.013	22.68	22.78	23.76	21.57	21.10	22.04
Co 86032	0.853	0.958	0.882	22.61	22.44	22.60	20.87	20.81	21.11
Co SNK 07103	0.983	0.901	0.981	23.43	22.86	23.43	21.27	20.37	21.52
Co SNK 07131	0.836	0.973	0.771	23.28	23.09	23.48	21.77	21.39	21.67
Co 7015	1.116	0.754	0.953	23.93	24.04	24.46	22.18	22.18	23.66
Co 94012	1.145	1.205	1.192	24.66	24.84	24.80	23.43	23.97	23.97
CV	12.33	14.51	19.32	2.29	1.79	1.71	3.14	3.02	3.11
S.EM+	0.07	0.08	0.11	0.31	0.24	0.23	0.40	0.38	0.40
CD (5%)	0.22	0.25	0.34	0.98	0.76	0.74	1.25	1.19	1.26

Table-5: QUALITY PARAMENTRS OF SUGARCANE GENOTYPES INFLUENCED BY FERTILIZER LEVELS ON PLANT CANE

Varieties/RDF	PURITY %			CCS %			CCS Yield t/ha		
	75%	100%	125%	75%	100%	125%	75%	100%	125%
Co 7008	95.08	92.64	92.74	15.43	14.91	15.59	27.18	27.77	23.78
Co 86032	92.34	92.73	93.42	14.73	14.71	14.98	26.72	27.36	23.59
Co SNK 07103	90.83	89.08	91.88	14.90	14.14	15.15	30.64	23.64	25.68
Co SNK 07131	93.43	92.63	92.32	15.45	15.12	15.29	27.81	24.01	26.63
Co 7015	92.72	92.30	96.73	15.68	15.65	17.04	34.29	23.62	29.80
Co 94012	95.06	96.54	96.66	16.75	17.25	17.25	28.16	32.60	29.89
CV	1.34	2.71	2.71	3.62	4.06	4.16	10.39	18.77	19.91
S.EM+	0.72	1.45	1.49	0.32	0.36	0.38	1.75	2.87	3.05
CD (5%)	2.27	4.57	4.71	1.02	1.13	1.2	5.5	NS	NS

YEARLY RESEARCH WORK PLAN FOR THE YEAR 2014–15

1	PROJECT NO.	AS-64 (AICRP)
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	DR. B.T. NADAGOUDA, AGRONOMIST, AICRP(S), ARS, SANKESHWAR
6	NEW/CONTINUED	New
7	YEAR OF START	2010-2011
8	DESIGN	RBD
9	treatments	12
	Treatments : 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	NOTE : S: 60 kg /hA ZN : 50 KG /HA FE : 12.5 KG /HA MN : 10 KG / HA NPK: 250 : 75 :190 KG / HA
10	A) NO. OF REPLICATION B) PLOT SIZE C) DOP D) DOH.	3 6 ROWS OF 6 m (5.4 X 6M) 29.01.2014 15.02.2015

AS-64 : RESPONSE OF SUGARCANE CROP TO DIFFERENT NUTRIENTS VARIED AGRO ECOLOGICAL SITUATION

The experiment was started during 2010-11

1. Growth parameters (Table. 2)

Germination count: Germination count differed significantly with treatments. Significantly the higher germination count was recorded in T6 (60.21) followed by T8 (59.60). The lowest germination count was recorded in T1 (52.11).

Number of clumps per hectare: Number of clumps differed significantly. The highest number of clumps /ha were recorded in T10 (17894) followed by T13 (17222). The lowest number of clumps was recorded in T1 and T8 (14500).

Number of tillers per hectare: Significantly higher number of tillers were recorded in T9 (123780) followed by T8 (119980). The lowest tiller number is recorded in T1 (78563).

2. Yield parameters (Table. 3)

Cane girth (cm): Significantly higher cane girth was recorded in T13 (2.5) followed by T7 (2.45) and T9 (2.43). The lowest cane girth was recorded in T12 (2.21)

Number millable canes (NMC)/ha. : Millable cane number differed significantly for treatments. The highest number of millable canes of recorded in T10 (100767) followed by T13 (97000). The lowest number of millable canes was recorded in T1 and T8 (81667).

Cane yield (t/ha.): Significantly the highest cane yield was recorded in T10 (193.02) followed by T13 (171.43). The lowest cane yield was recorded in T1 (62.89).

3. Quality parameters (Table. 4)

Brix, POL and Purity percent though differed significantly but the variations with significant levels were very less.

CCS yield (t/ha): Significantly the higher CCS yield was recorded in T10 (26.55) followed by T13 (24.11). The lowest was recorded in T1 (8.69)

Table 1: Nutrient availability of soil before planting (kg/ha)

Treatment No	PH	EC DSM^{-1}	O.C. %	SOIL NUTRIENTS AVAILABLE (KG/HA)		
				N	P_2O_5	K_2O
1	6.8	0.20	0.57	256.0	18.4	300
2	6.8	0.20	0.57	269.0	21.4	329
3	6.8	0.21	0.56	262.2	18.9	308
4	6.8	0.22	0.56	265.2	21.8	315
5	6.8	0.21	0.57	260.0	19.0	316
6	6.8	0.21	0.56	252.3	20.0	312
7	6.8	0.18	0.55	254.2	18.2	307
8	6.8	0.21	0.58	260.0	18.8	310
9	6.8	0.22	0.58	260.0	18.6	313
10	6.8	0.22	0.60	254.0	22.1	325
11	6.8	0.21	0.56	261.2	22.8	310
12	6.8	0.21	0.58	260.0	18.6	311

Table 2: Growth parameters influenced by different nutrients

Treatment No	Germination count	Number of Clumps/ha	Number of Tillers /ha	Cane height (m)
T 1 - Control (No Fertilizer)	52.11	14500	78563	280.00
T 2 – N	52.95	14656	81760	274.00
T 3 – NP	52.55	15011	87410	284.00
T 4 – NPK	53.34	15583	112940	273.00
T 5 - NPK+S	54.95	15389	118610	282.00
T 6 - NPK+Zn	60.21	15761	116940	270.00
T 7 - NPK+Fe	56.21	16078	109745	265.00
T 8 - NPK+Mn	59.60	14500	119980	269.00
T 9 - NPK+S+Zn	57.65	16256	123780	281.00
T 10 - NPK+S+Zn+Fe	57.06	17894	114915	280.00
T 11 - NPK+S+Zn+Fe+Mn	54.74	16989	113900	276.00
T 12 - FYM/CSPMC @ 20 T/Ha	58.60	15211	112990	277.00
T 13 - Soil test based	55.41	17222	106887	260.00
CV%	0.42	65.34	0.46	0.56
S.EM +	0.13	0.72	282.84	0.89
C.D. @ 5 %	0.39	190.72	825.56	2.60

Table 3: Yield and Yield attributes as influenced by different nutrients

Treatment No	Cane Girth (Cm)	Single Cane weight (Kg)	NMC/ha	Yield t/ha
T 1 - Control (No Fertilizer)	2.35	0.77	81667	62.89
T 2 – N	2.36	1.48	82533	122.57
T 3 – NP	2.38	1.42	84533	120.14
T 4 – NPK	2.38	1.75	87767	153.54
T 5 - NPK+S	2.31	1.83	86667	158.57
T 6 - NPK+Zn	2.33	1.73	88767	153.54
T 7 - NPK+Fe	2.45	1.80	90533	163.06
T 8 - NPK+Mn	2.37	1.79	81667	146.19
T 9 - NPK+S+Zn	2.43	1.85	91533	169.39
T 10 - NPK+S+Zn+Fe	2.31	1.92	100767	193.02
T 11 - NPK+S+Zn+Fe+Mn	2.35	1.73	95667	165.37
T 12 - FYM/CSPMC @ 20 T/Ha	2.21	1.76	85667	150.43
T 13 - Soil test based	2.50	1.77	97000	171.43
CV%	1.13	10.27	0.26	9.74
S.EM +	0.02	0.10	132.74	8.35
C.D. @ 5 %	0.04	0.29	387.45	24.38

Table 4: Yield and quality parameters as influenced by different nutrients

Treatments	Juice Weight (Kg)	Corrected Brix (%)	Corrected pol (%)	PURITY %	CCS %	Yield t/ha	CCS Yield t/ha
	0.89	22.77	20.03	87.98	13.83	62.89	8.69
T 2 – N	1.02	22.88	20.25	88.49	14.01	122.57	17.09
T 3 – NP	0.79	23.11	20.17	87.28	13.86	120.14	16.63
T 4 – NPK	0.83	23.19	20.08	86.59	13.75	153.54	21.12
T 5 - NPK+S	0.85	23.23	20.25	87.17	13.91	158.57	22.06
T 6 - NPK+Zn	1.12	23.31	20.00	85.81	13.63	153.54	20.93
T 7 - NPK+Fe	1.11	23.30	20.13	86.39	13.77	163.06	22.42
T 8 - NPK+Mn	0.88	23.44	20.38	86.97	13.99	146.19	20.45
T 9 - NPK+S+Zn	0.91	23.74	20.64	86.92	14.16	169.39	23.98
T 10 - NPK+S+Zn+Fe	0.95	23.22	20.10	86.54	13.76	193.02	26.55
T 11 - NPK+S+Zn+Fe+Mn	0.84	23.61	20.53	86.96	14.09	165.37	23.31
T 12 - FYM/CSPMC @ 20 T/Ha	1.18	23.43	21.44	91.47	15.07	150.43	22.68
T 13 - Soil test based	0.89	23.60	20.51	87.09	14.07	171.43	24.11
CV%	12.16	2.08	1.59	2.03	2.19	9.74	9.79
S.EM +	0.07	0.28	0.19	1.02	0.18	8.35	1.17
C.D. @ 5 %	0.19	0.82	0.54	2.99	0.52	24.38	3.43

YEARLY RESEARCH WORK PLAN FOR THE YEAR 2014-15

1	PROJECT NO.	AICRP
2	DEPARTMENT	SUGARCANE AGRONOMY
3	PROJECT TITLE	AS-66 PRIMING OF CANE NODE FOR ACCELERATING GERMINATION
4	OBJECTIVES	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	DR. B.T. NADAGOUDA, AGRONOMIST, AICRP(S)
6	NEW/CONTINUED	PLANT CANE II
7	YEAR OF START	2012-2013
8	DESIGN	RBD
9	Treatment details	

N ↓

R3	**5**	**7**	**1**	**2**	**4**	**3**	**6**
R2	**1**	**2**	**3**	**4**	**5**	**6**	**7**
R1	**7**	**6**	**5**	**4**	**3**	**2**	**1**

T1 : un-primed cane node
T2 : Treating cane node in hot water in 50^0 c for 2 hrs.
T3 : treating cane node in tot water (50^0) in urea solution (3%) for 2 hours
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)
T7 : Chemical seed treatment
(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)

10	A) NO. OF REPLICATION	4
	B) PLOT SIZE	5.4 X 6 m
	C) DATE OF PLANTING	14/12/2013
	D) DATE OF HARVESTING	10/02/2015

AS-66: PRIMING OF CANE NODE FOR ACCELERATING GERMINATION

1. Growth parameters (Table. 1)

Germination count: Germination differed significantly for priming the cane nodes with different treatments. Significantly highest germination percent was recorded in T4 (91.15), treated with cattle dung, cattle urine and water followed by T6 (81.27), primed and sprouted cane node planting. The lowest germination was recorded in T2 (39.43) by treating the cane node with hot water (50 ^{0}C) for two hours. The other growth parameters recorded similarly except for cane height.

2. Yield parameters (Table. 2)

Cane girth (cm): Significantly higher cane girth was recorded in T4 (3.16) and lowest cane girth was recorded in T6 (2.86). However, the other treatments were on par with T4.

Number of millable canes (NMC)/ha. : Significantly higher number of millable canes per hectare were recorded in T7 (157786) followed T6 (152443) and the lower number was recorded in T2 (91864).

Cane yield (t/ha.): Significantly the highest cane yield was recorded in T7 (273.15) followed by T4 (266.09). The lowest cane yield was recorded in T2 (152.58).

3. Quality parameters (Table. 3)

Juice weight (kg): Significantly higher juice weight was recorded in T7 (1.18) followed by T4 (1.16) and the lowest juice weight was recorded in T2 (0.91).

Brix (%) : The brix values also differed significantly for priming treatments. The highest brix value (26.450) was recorded in T5 and T6 and lowest was recorded in T1 (25.703)

Pol (%) : There was non significant difference in Pol percentage among the treatments.

Purity (%) : Significantly higher juice purity was recorded in T1 (93.27) followed by T2 (92.67). The lowest juice purity was in T6 (89.75).

CCS yield (t/ha): Significantly the higher CCS yield was recorded in T7 (45.29) followed by T4 (44.61). The lowest was recorded in T2 (25.86).

Table 1: Growth parameters influenced by Priming of cane node for accelerating germinations

Treatment No	Germination count	Germination (%)	Number of Clumps/ha	Number of Tillers /ha	Cane height (m)
T1	272	70.10	73723	154547	2.527
T2	153	39.43	40975	143537	2.447
T3	174	44.76	47119	156505	2.497
T4	354	91.15	96928	200416	2.577
T5	270	69.50	71995	191289	2.473
T6	315	81.27	83870	237579	2.450
T7	313	80.58	83453	250454	2.530
CV	3.48	-	4.02	7.01	3.40
S.EM+	5.38	-	1652.88	7713.64	0.05
CD (5%)	16.38	-	5093.04	23768.09	0.15

Table 2: Yield and Yield attributes influenced by Priming of cane node for accelerating germinations

Sl NO	Cane Girth (Cm)	NMC/ha	Single Cane weight (Kg)	Cane yield (t/ha)	Number of internodes
	2.950	98939	2.22	222.95	25.967
2	2.963	91864	1.68	152.58	26.433
3	2.977	105271	1.71	179.72	25.067
4	3.160	126823	2.10	266.09	28.933
5	3.040	125756	1.89	238.57	27.300
6	2.860	152443	1.66	251.43	25.433
7	3.027	157786	2.11	273.15	25.200
CV	4.84	9.51	15.26	17.03	6.56
S.EM+	0.08	6733.50	0.17	22.25	1.00
CD (5%)	0.26	20747.98	0.52	68.56	3.07

Table 3: Yield and quality parameters as influenced by Priming of cane node for accelerating germinations

Sl NO	Juice Weight (Kg)	Corrected Brix (%)	Corrected pol (%)	PURITY %	CCS %	Cane yield (t/ha)	CCS Yield t/ha
	1.06	25.703	23.97	93.27	16.99	222.95	37.87
2	0.91	25.870	23.97	92.67	16.94	152.58	25.86
3	0.96	25.923	23.97	92.47	16.93	179.72	30.42
4	1.16	25.917	23.81	91.89	16.77	266.09	44.61
5	1.06	26.450	23.81	90.03	16.61	238.57	39.64
6	0.94	26.450	23.74	89.75	16.54	251.43	41.56
7	1.18	25.783	23.58	91.46	16.57	273.15	45.29
CV	9.71	1.23	0.94	1.29	1.29	17.03	17.14
S.EM+	0.06	0.19	0.13	0.68	0.12	22.25	3.75
CD (5%)	0.18	0.57	0.40	2.10	0.39	68.56	11.56

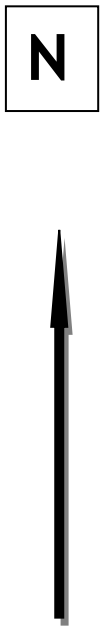
YEARLY RESEARCH WORK PLAN FOR THE YEAR 2014-2015

1	**Project No.**	AICRP (AS 68)
2	**Department**	Sugarcane Agronomy
3	**Project title**	Impact of Integrated Application of Organics In Improving Soil Health And Sugarcane Productivity
4	**Objectives**	To develop nutrient management strategy for sustaining soil health and sugarcane production
5	**Project leader Associate**	Dr. B.T. Nadagouda, Agronomist, AICRP (S)
6	**New/continued**	Plant Cane I
7	**Year of start**	2014-15
8	**design**	RBD
9	**Treatment details**	

Treatment	Sugarcane (Plant crop)	Ratoon - I	Ratoon - II
T1	No organic + 50% RDF	Application of trash at 10 tonnes / ha + 50% RDF	Application of trash at 10 tonnes/ha + 50% RDF
T2	No organic + 100% RDF	Application of trash at 10 tonnes / ha + 100% RDF	Application of trash at 10 tonnes / ha + 100% RDF
T3	No organic + soil test based recommendation	Application of trash at 10 tonnes/ha + soil test basis (NPK application)	Application of trash at 10 tonnes/ha + soil test basis (NPK application)
T4	Application of FYM /Compost @ 20 tonnes/ha + 50% RDF (inorganic source)	Application of FYM /Compost @ 20 tonnes/ha + 50% RDF (inorganic source)	Application of FYM /Compost @ 20 tonnes/ha + 50% RDF (inorganic source)
T5	Application of FYM/Compost @ 20 tonnes /ha + 100% RDF (inorganic source)	Application of FYM/Compost @ 20 tonnes /ha + 100% RDF (inorganic source)	Application of FYM/Compost @ 20 tonnes /ha + 100% RDF (inorganic source)
T6	Application of FYM/Compost @20 tonnes/ha + in organic nutrient application based on soil test (rating chart)	Application of FYM/Compost @20 tonnes/ha + in organic nutrient application based on soil test (NPK application)	Application of FYM/Compost @20 tonnes/ha + in organic nutrient application based on soil test (NPK application)
T7	Application of FYM/Compost @10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + 50% RDF	Application of FYM/Compost @10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + 50% RDF	Application of FYM/Compost @10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + 50% RDF
T8	Application of FYM / Compost @ 10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + 100% RDF	Application of FYM / Compost @ 10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + 100% RDF	Application of FYM / Compost @ 10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + 100% RDF
T9	Application of FYM / Compost @ 10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + soil test basis	Application of FYM / Compost @ 10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + soil test basis (NPK application)	Application of FYM / Compost @ 10 tonnes/ha + biofertilizer (*Azotobactor/Acetobacter + PSB)* + soil test basis (NPK application)

10	a) No. of replication	3
	b) plot size	5.4 X 6 m
	c) Date of planting	14-12-13
	d) Date of harvesting	2/2/2015

RIII	**1**	**2**	**3**	**4**	**6**	**5**	**7**	**8**	**9**
RII	**5**	**6**	**8**	**7**	**2**	**3**	**2**	**1**	**4**
RI	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**



AS-68: IMPACT OF INTEGRATED APPLICATION OF ORGANICS IN IMPROVING SOIL HEALTH AND SUGARCANE PRODUCTIVITY

1. Growth parameters (Table. 1)

Cane height (m): Cane height differed significantly with different treatments. Significantly the highest cane height was recorded in T3 (2.565) followed by T2 (2.477). The lowest cane height was recorded in T1 (2.343)

Number of internodes: Significantly higher number of internodes were recorded in T3 (27) followed by T8 (25.30) the lowest number of internodes were recorded in T7 (22.83).

Number of clumps /ha.: The clump number did not differ significantly with treatments. The highest number of clumps were recorded in T8 (16022) and the lowest was recorded in T3 (12799)

Number of tillers /ha. : Significantly the higher number of tillers were recorded in T9 (195940) followed by T8 (117215). The lowest number of tillers were recorded in T1 (95590)

2. Yield parameters (Table. 2)

Cane girth (cm): Cane girth differed significantly due to treatments. The highest cane girth was recorded in T8 (2.803) followed by T6 (2.777). The lowest cane girth was recorded in T9 (2.570).

Number of millable canes (NMC)/ha. : Significantly higher number of millable canes were recorded in T9 (153395) followed T8 (94342). The lower number of millable cane were recorded in T3 (76029).

Cane yield (t/ha.): Yield of Sugarcane differed significantly due to treatments effect. Significantly the higher cane yield was recorded in T9 (168.57) followed by T7 (122.49). The lowest yield was recorded in T3 (92.88)

3. Quality parameters (Table. 3)

Juice weight (kg): Brix percent, Pol percent and purity percent different significantly with treatments.

Brix (%): Significantly higher brix values were recorded in T5 (23.70) followed by T4 (23.67). The lower brix values were recorded in T2 (23.23)

Pol (%): Higher pol percent was recorded in T5 (22.23) followed by T6 (22.16) and the lower pol percent was recorded in T3 (20.34).

Purity (%): Juice purity variation was significant with treatment effect the highest purity was recorded in T5 (93.77) and the lowest purity values were recorded in T3 (86.97).

Commercial Cane sugarcane (CCS) per cent: Highest CCS percent was recorded in T5 (15.80) and the lowest was recorded in T3 (13.96).

CCS yield (t/ha): The CCS yield differed significantly with treatments although CCS percent variation was significant but cane yield variation has masked the effect of CCS percent in CCS yield. Significantly the higher CCS yield was recorded in T9 (26.11) followed by T7 (18.14). The lowest CCS yield was recorded in T3 (12.95).

Table 1: Growth parameters influenced by Integrated Nutrient Management

Treatment No	Number of internodes	Cane height (m)	Number of Tillers /ha	Number of Clumps/ha
	23.97	2.343	95590	13043
T2	24.63	2.477	101770	13892
T3	27.00	2.565	93896	12799
T4	24.93	2.437	111715	15249
T5	24.10	2.457	107394	14698
T6	23.73	2.453	104643	14307
T7	22.83	2.413	112826	15400
T8	25.30	2.450	117215	16022
T9	24.40	2.460	195940	15902
CV	7.06	5.83	37.66	34.47
S.EM+	1.00	0.08	25152.27	3124.55
CD (5%)	3.00	0.25	75406.48	NS

Table 2: Yield and yield attributes influenced by Integrated Nutrient Management

Treatment No	Single Cane weight (Kg)	Cane Girth (Cm)	Yield t/ha	NMC/ha
	1.250	2.750	96.96	77675
T2	1.180	2.705	96.53	82305
T3	1.228	2.697	92.88	76029
T4	1.066	2.720	95.82	89918
T5	1.231	2.623	108.52	87346
T6	1.148	2.777	99.87	85494
T7	1.351	2.657	122.49	90844
T8	1.178	2.803	111.26	94342
T9	1.158	2.570	168.57	153395
CV	12.26	5.93	30.94	35.04
S.EM+	0.08	0.09	19.71	18819.59
CD (5%)	0.25	0.28	59.08	56421.12

Table 3: Yield And Quality Parameters Influenced By Integrated Nutrient Management

Treatment No	Juice Weight (Kg)	Corrected Brix (%)	Corrected pol (%)	PURITY %	CCS %	Yield t/ha	CCS Yield t/ha
	0.723	23.39	20.58	87.99	14.20	96.96	13.78
T2	0.645	23.23	21.93	94.34	15.63	96.53	15.17
T3	0.731	23.37	20.34	86.97	13.96	92.88	12.95
T4	0.590	23.67	20.79	87.83	14.33	95.82	13.71
T5	0.739	23.70	22.23	93.77	15.80	108.52	17.09
T6	0.652	23.66	22.16	93.67	15.74	99.87	15.82
T7	0.862	23.48	21.29	90.70	14.91	122.49	18.14
T8	0.683	23.45	21.13	90.14	14.75	111.26	16.39
T9	0.798	23.51	22.00	93.59	15.62	168.57	26.11
CV	15.07	0.90	5.41	5.07	7.70	30.94	30.91
S.EM+	0.06	0.12	0.67	2.66	0.67	19.71	2.96
CD (5%)	0.19	0.36	2.00	7.98	2.00	59.08	8.87

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