AS 42: AGRONOMIC EVALUATION OF PROMISING SUGARCANE GENOTYPES PC-I (OCTOBER) – EARLY

1	PROJECT NO.	AS-42 –B (AIRCRP)
2	DEPARTMENT	SUGARCANE AGRONOMY
3	PROJECT TITLE	**AGRONOMIC EVALUATION OF PROMISING SUGARCANE GENOTYPES PC-I (OCTOBER)- EARLY**
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	Factorial RBD
9	Treatments	**VARIETIES** / **FERTILIZER LEVELS** **V-1** - CoSnk 13102 (SNK **07360)** / **F-1** – 75 % RDN **V-2** – CoSnk 14102 (SNK 088789) / **F -2** – 100 % RDN **V-3** - Co 09004 / **F-3** – 125 % RDN **V-4** CoC 671 (CHECK)
10	A) No. of Replications B) Plot Size C) DOP D) Plot No.	3 6 M X 6 M (5 Rows of 1.2m) 28-01-2015 3

Growth parameters: (Table 1)

All the sugarcane varieties tested were found significant among themselves for cane height, number of internodes and intermodal length. All these growth parameters were found on par across the varieties tested for different fertilizer doses and found significant for interaction of varieties with fertilizer doses. Significantly higher cane height was recorded in V2 (SNK 088789) at 100% RDF and lower cane height was recorded in V4 (CoC 671) at 75% RDF. The higher numbers of internodes were recorded in V4 (CoC 671) with 125% RDF and lower number of internodes were found in V1 (SNK 07360) with 125% RDF. The intermodal length was significantly higher in V2 (SNK 088789) at 125 % RDF and lower intermodal length was recorded in V4 (CoC 671) at 100% RDF.

Yield and yield attributing parameters: (Table 2)

The yield and yield attributing parameters were significant for varieties tested and were on par to each other for fertilizer doses tested. Among the varieties, higher cane yield was recorded in V2 (SNK 088789) and V3 (Co 9004) and the lower cane yield was recorded in V4 (CoC 671). However, significantly higher cane girth was recorded in V1 (SNK 07360) and the lower cane girth was recorded in V2 (SNK 088789). The single cane weight was higher in V1 (SNK 07360) and the lowest was recorded in V4 (CoC 671). The interaction of varieties with fertilizer doses for all the yield parameters were significant.

Quality parameters (Table 3)

The quality parameters tested for varieties were found significant. V3 (Co 9004) was found superior for the quality parameters except for juice weight. However, V1 (SNK 07360) variety recorded lower units except for juice weight. The fertilizer doses tested did not differ significantly for all the quality parameters and were found on par. The interaction effect for all the quality parameters found significant. V3 (Co 9004) found superior in quality compared to others.

Conclusion: The higher cane & CCS yield was recorded in V2 (SNK 088789) variety and individual cane features were impressive in V1 (SNK 07360) and all the quality parameters were superior in V3 (Co 9004). Among the fertilizer doses tested there was no impact of variation in doses. Some times higher doses causes impurity in quality and yielding ability of early types. Application of either 75% or 100 % RDF is found suitable based on soil type and management practices followed.

Table 1: Growth parameters influenced by Fertilizer dosage (Early)

Treatments	Cane Ht (m)				No of internodes				Internodal Length (cm)			
	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean
V1	1.70	1.81	1.64	1.71	15.44	16.55	14.78	15.59	10.99	10.94	11.09	11.00
V2	2.07	2.24	2.21	2.17	18.33	18.44	17.89	18.22	11.28	12.12	12.40	11.93
V3	2.09	2.10	2.06	2.08	17.22	17.33	18.22	17.59	12.14	12.15	11.32	11.87
V4	1.63	1.67	1.77	1.69	17.40	19.00	19.22	18.54	9.49	8.79	9.23	9.17
Mean	1.87	1.95	1.92	1.91	17.10	17.83	17.53	17.48	10.97	11.00	11.01	10.99
	SEm	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**		
VARIETY	0.05	0.15			0.49	1.46			0.28	0.83		
FERTILISER	0.04	0.13			0.43	1.26			0.24	0.72		
V X F	0.09	0.27			0.85	2.52			0.48	1.43		
CV %	8.14	0.00			8.44	0.00			7.64	0.00		

Table 2: Yield and yield attributing parameters influenced by Fertilizer dosage (Early)

Treatments	Cane Yield (t/ha)				Girth of Cane (cm)				NMC ('000/ha)				CCS Yield (t/ha)				Single cane weight (kg)			
	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean
V1	95.98	95.98	87.35	93.10	3.34	3.29	3.29	3.31	61.31	58.91	56.79	59.00	8.91	8.66	8.19	8.58	1.50	1.68	1.38	1.52
V2	97.27	100.64	100.64	99.52	2.54	2.55	2.53	2.54	73.31	72.85	75.25	73.81	9.78	9.59	10.28	9.88	1.24	1.28	1.27	1.26
V3	84.49	83.93	85.22	84.55	2.77	2.79	2.85	2.80	83.10	83.84	81.62	82.85	10.28	10.17	9.81	10.09	1.39	1.34	1.38	1.37
V4	56.55	75.11	64.31	65.33	3.07	2.92	2.88	2.96	59.83	60.66	55.68	58.72	6.29	8.90	7.60	7.60	1.22	1.25	1.24	1.24
Mean	83.57	88.92	84.38	85.62	2.93	2.89	2.89	2.90	69.39	69.07	67.33	68.60	8.81	9.33	8.97	9.04	1.34	1.39	1.32	1.35
	SEm	CD 5%			**SEm**	**CD 5%**			SEm	CD 5%			SEm	CD 5%			**SEm**	**CD 5%**		
VARIETY	3.70	10.97			0.05	0.15			2.88	8.53			0.44	1.30			0.07	0.21		
FERTILISER	3.21	9.50			0.04	0.13			2.49	7.38			0.38	1.13			0.06	0.18		
V X F	6.42	18.99			0.09	0.26			4.99	14.77			0.76	2.25			0.12	0.36		
CV %	12.98				5.31	0.00			12.60				14.60				15.50	0.00		

V1-SNK 07360 **V2-SNK 088789** **F-1** – 75 % RDN **F-3** – 125 % RDN
V-3 - Co 09004 **V4-COC 671** **F -2** – 100 % RDN

Table 3: Quality parameters influenced by Fertilizer dosage (Early) at 10 Months

Treatments	Brix %				Sucrose %				Purity %				CCS %				Juice wt (kg)			
	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean
V1	16.25	16.42	16.92	16.53	13.72	13.52	14.00	13.75	84.43	82.33	82.79	83.18	9.28	9.02	9.37	9.22	0.82	0.94	0.76	0.84
V2	17.75	16.94	17.11	17.27	14.90	14.17	14.88	14.65	83.89	83.60	87.08	84.86	10.04	9.53	10.21	9.93	0.59	0.94	0.60	0.71
V3	19.28	19.78	19.28	19.44	17.40	17.51	16.86	17.25	90.32	88.52	87.52	88.79	12.15	12.12	11.60	11.96	0.77	0.75	0.74	0.75
V4	18.61	19.61	19.44	19.22	16.20	17.20	17.13	16.85	87.10	87.78	88.15	87.68	11.12	11.86	11.83	11.60	0.59	0.59	0.61	0.60
Mean	17.97	18.19	18.19	18.12	15.55	15.60	15.72	15.62	86.44	85.56	86.39	86.13	10.65	10.63	10.75	10.68	0.69	0.81	0.68	0.73
	SEm	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			CD 5%	SEm			**SEm**	**CD 5%**		
VARIETY	0.28	0.84			0.24	0.70			1.05	3.10			0.19	0.57			0.06	0.18		
FERTILISER	0.25	0.73			0.21	0.61			0.91	2.69			0.17	0.50			0.05	0.15		
V X F	0.49	1.46			0.41	1.22			1.81	5.37			0.34	1.00			0.10	0.31		
CV %	4.72	0.00			4.55	0.00			3.65	0.00			5.45				24.99	0.00		

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

YEARLY RESEARCH WORK PLAN FOR THE YEAR 2015–16

1	PROJECT NO.	AS-42 –A (AIRCRP)
2	DEPARTMENT	SUGARCANE AGRONOMY
3	PROJECT TITLE	**AGRONOMIC EVALUATION OF PROMISING SUGARCANE GENOTYPES PC-I (OCTOBER)-MIDALTE**
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	Factorial RBD
9	Treatments	**VARIETIES** **V-1** - SNK 07680 **V-2** – SNK 07337 **V-3** - SNK 081681 (COSNK 14103) **V-4** CO 86032 (CHECK) FERTILIZER LEVELS **F-1** – 75 % RDN **F -2** – 100 % RDN **F-3** – 125 % RDN
10	A) No. of Replications B) Plot Size C) DOP D) Plot No.	3 6 M X 6 M (5 Rows of 1.2m) 24-01-2015 3

Growth parameters: (Table 1)

All the growth parameters were significant for varieties tested. V1 (SNK 07680) recorded higher units for all the growth parameters and V2 (SNK 07337) recorded lower units. All the varieties recorded on par units of growth parameters irrespective of fertilizer doses applied. However, the interaction effect was significant for all the growth parameters except for number of tillers per plant, where it recorded on par units.

Yield and yield attributing parameters (Table 2)

The varieties tested were found significant for yield and all the yield attributing parameters. However, the fertilizer doses tested were significant only for the cane yield and CCS yield rest of the parameters were on par. The interaction effect was found significant for yield and all the yield attributing parameters.

Quality parameters (Table 3)

The quality parameters were on par for different fertilizer doses, Brix% and Sucrose % among the varieties. The other quality parameters were found significant among the varieties tested. The interaction effect was found significant for all the quality parameters tested.

Conclusion:

Among the varieties tested V1 (SNK 7680) recorded higher units of all the growth parameters and on par in all the quality parameters. The higher cane yield was recorded in V3 (SNK 081681) followed by V1 (SNK 07680). Application of fertilizers either 100% RDF or 125% RDF based on the soil type and management practices followed is advisable for higher growth yield and quality parameters.

Table 1: Growth parameters influenced by Fertilizer dosage (Midlate)

Treatments	Plant Ht (m)				Cane Ht (m)				No of internodes				Internodal Length (cm)				No fo tillers @ 120 DAP			
	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean
V1	3.69	3.82	3.88	3.80	2.01	1.92	2.02	1.98	16.87	16.83	17.17	16.96	11.93	11.41	11.74	11.69	120.40	128.81	128.53	125.91
V2	3.24	3.12	3.20	3.19	1.41	1.38	1.39	1.39	14.97	14.60	14.97	14.84	9.39	9.43	9.29	9.37	106.46	103.51	105.54	105.17
V3	3.44	3.39	3.40	3.41	1.89	1.86	1.88	1.87	20.63	19.87	21.20	20.57	9.16	9.35	8.85	9.12	117.72	116.71	119.48	117.97
V4	3.69	3.80	3.80	3.76	2.00	1.90	2.02	1.97	17.10	16.20	17.73	17.01	11.75	11.80	11.41	11.65	130.01	126.31	118.00	124.77
Mean	3.52	3.53	3.57	3.54	1.83	1.76	1.83	1.80	17.39	16.88	17.77	17.34	10.56	10.50	10.32	10.46	118.65	118.83	117.89	118.46
	SEm	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**		
VARIETY	0.050	0.148			0.041	0.122			0.429	1.270			0.215	0.636			5.23	15.47		
FERTILISER	0.043	0.128			0.036	0.105			0.372	1.100			0.186	0.551			4.53	13.39		
V X F	0.087	0.256			0.071	0.211			0.743	2.199			0.372	1.101			9.05	26.79		
CV %	4.236				6.831				7.421				6.162				13.23			

Table 2: Yield and yield attributing parameters influenced by Fertilizer dosage (Midlate)

Treatments	Cane Yield (t/ha)				Cane Girth (cm)				NMC ('000/ha)				CCS Yield (t/ha)				Single cane weight (kg)			
	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean
V1	75.44	91.97	104.11	90.50	2.97	2.89	2.82	2.90	74.97	79.31	78.58	77.62	9.87	12.82	14.99	12.56	1.73	1.79	1.44	1.65
V2	71.37	73.96	82.78	76.04	3.27	3.18	3.17	3.20	78.21	72.30	73.04	74.51	10.23	11.10	11.99	11.11	1.42	1.45	1.47	1.44
V3	100.37	111.68	99.31	103.78	3.05	2.99	3.05	3.03	84.67	93.26	88.82	88.92	14.92	16.40	14.46	15.26	1.91	1.88	1.76	1.85
V4	69.16	80.75	93.44	81.12	2.77	2.77	2.84	2.80	93.53	103.60	106.64	101.26	10.04	11.74	13.79	11.86	1.47	1.58	1.62	1.55
Mean	79.08	89.59	94.91	87.86	3.01	2.96	2.97	2.98	82.85	87.12	86.77	85.58	11.27	13.01	13.81	12.70	1.63	1.67	1.57	1.63
	SEm	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**		
VARIETY	3.44	10.18			0.059	0.176			4.42	13.09			0.62	1.83			0.04	0.12		
FERTILISER	2.98	8.81			0.051	0.152			3.83	11.34			0.53	1.58			0.04	0.11		
V X F	5.96	17.63			0.103	0.304			7.66	22.68			1.07	3.16			0.07	0.21		
CV %	11.74				5.975				15.51				14.57				7.59			

Table 3: Quality parameters influenced by Fertilizer dosage (Midlate) at 12 Months

Treatments	Brix %				Sucrose %				Purity %				CCS %				Juice wt (kg)			
	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean	F1	F2	F3	Mean
V1	22.35	22.18	23.02	22.51	19.18	19.92	20.57	19.89	85.82	89.69	89.33	88.28	13.08	13.89	14.31	13.76	0.69	0.63	0.72	0.68
V2	22.01	22.01	22.35	22.12	20.31	20.96	20.55	20.61	92.29	95.24	91.97	93.17	14.33	14.99	14.48	14.60	0.64	0.57	0.63	0.61
V3	22.68	22.51	22.18	22.46	21.02	20.79	20.58	20.80	92.68	92.36	92.79	92.61	14.86	14.68	14.56	14.70	0.71	0.65	0.65	0.67
V4	22.68	22.51	22.68	22.63	20.70	20.66	20.92	20.76	91.27	91.78	92.28	91.78	14.53	14.54	14.76	14.61	0.68	0.70	0.73	0.71
Mean	22.43	22.31	22.56	22.43	20.30	20.58	20.66	20.52	90.52	92.27	91.59	91.46	14.20	14.52	14.53	14.42	0.68	0.64	0.68	0.67
	SEm	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**			**SEm**	**CD 5%**		
VARIETY	0.147	0.435			0.302	0.893			1.040	3.078			0.280	0.829			0.021	0.061		
FERTILISER	0.127	0.377			0.261	0.773			0.901	2.666			0.243	0.718			0.018	0.053		
V X F	0.254	0.753			0.522	1.546			1.801	5.332			0.485	1.436			0.036	0.106		
CV %	1.965				4.409				3.411				5.830				9.283			

V-1 - SNK 07680
V-2 – SNK 07337
V-3 - SNK 081681 (COSNK 14103)
V-4 CO 86032 (CHECK)

F-1 – 75 % RDN
F -2 – 100 % RDN
F-3 – 125 % RDN

YEARLY RESEARCH WORK PLAN FOR THE YEAR 2015-2016

1	**Project No.**	AICRP (AS 68)
2	**Department**	Sugarcane Agronomy
3	**Project title**	Impact of integrated application of organics and inorganics in improving soil health and sugarcane production.
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 b) Plot size c) Date of planting d) Plot No. e) Date of harvesting	3 12.0m X 6 m (10 rows of 1.2m) 18-01-2015 4

AS-68 Impact of integrated application of organics and inorganics in improving soil health and sugarcane production

Growth parameters (Table 1)

Among the growth parameters the plant height and number of tillers varied significantly due to treatments. Significantly the higher plant height was recorded in T8 (Application of 100% RDF+10t/ha FYM+Azospirillium and PSB each @ 1 kg) and the lowest plant height was recorded in T1 (50% RDF alone). The tiller number was higher in T9 (10 t/ha FYM+Soil test based NPK+Azospirillum +PSB each @ 1 kg) and the lower number of tillers were recorded in T2 (100% RDF alone). However, T1 was on par with T2. The cane height and number of internodes per plant were on par among the treatments.

Yield and yield attributing parameters (Table 2)

Cane yield and CCS yield did not differ significantly due to treatment influence. However, higher cane yield was recorded in T6 (FYM@20 t/ha+Soil test based NPK+Azpspirillum+ PSB each @ 1 kg).

Cane girth was significant among the treatments the higher cane girth was recorded in T2 and the lower was recorded in T5. Number of millable canes (NMC) was significant due to treatment variations. The higher NMC was recorded in T5 and the lower in T7.

Single cane weight was significant the higher single cane weight was recorded in T2 and T9 and the lower cane weight was recorded in T1.

Quality parameters (Table 3)

All the quality parameters tested were not influenced to treatment effect and they were on par to each other among the treatment tested.

Conclusion: Nutrient management practices followed with either soil test based NPK application or 100% RDF along with Azospirillum +PSB each@1 kg and either 10 or 20 t/ha FYM based on the availability is beneficial in getting higher cane yield.

Table 1: Growth parameters influenced by Integrated Nutrient Management (SNK 07680)

Treatments	Plant height (m)	Cane height (m)	No. of Internodes	Tillers/ plot
T1	3.52	2.02	16.22	68.73
T2	3.91	2.08	15.44	67.50
T3	3.99	2.03	17.22	70.23
T4	3.91	2.23	17.43	71.00
T5	4.03	2.11	17.11	72.80
T6	4.02	2.09	17.22	71.37
T7	3.91	1.99	15.33	74.13
T8	4.04	2.14	16.44	72.50
T9	4.01	2.17	16.44	76.27
MEAN	3.93	2.10	16.54	71.61
SEM	4.62	0.10	1.01	2.24
CV	0.10	8.64	10.54	5.42
CD 5%	0.31	0.31	3.02	6.71

Table 2: Yield and Yield attributing parameters influenced by Integrated Nutrient Management (SNK 07680)

Treatments	Cane yield (t/ha)	cane girth (cm)	NMC/plot	CCS Yield (t/ha	Single Cane weight (kg)
T1	86.99	2.94	55.83	11.61	1.33
T2	91.30	3.14	50.63	11.25	1.60
T3	93.50	3.13	50.53	10.12	1.54
T4	95.65	3.04	52.77	11.45	1.49
T5	95.37	2.64	57.07	11.54	1.44
T6	101.81	2.98	50.27	11.73	1.50
T7	84.44	2.96	50.10	9.69	1.42
T8	92.08	2.95	55.10	10.50	1.59
T9	96.67	3.09	53.33	11.94	1.60
MEAN	93.09	2.98	52.85	11.09	1.50
SEM	8.46	0.11	1.20	1.07	0.05
CV	15.74	6.19	3.94	16.69	5.24
CD 5%	25.36	0.32	3.60	3.20	0.14

Table 3: quality parameters influenced by Integrated Nutrient Management (SNK 07680)

Treatments	Brix % 12M	Sucrose %	Purity %	CCS %	Juice weight (kg)
T1	20.11	17.54	87.86	12.78	0.80
T2	20.78	17.71	85.27	12.04	0.83
T3	19.61	17.00	86.67	12.64	0.79
T4	20.44	17.58	86.01	12.00	0.76
T5	20.78	17.79	85.62	12.12	0.74
T6	20.11	17.04	84.81	12.54	0.79
T7	20.28	17.02	83.95	12.47	0.75
T8	20.28	16.94	83.51	12.39	0.83
T9	20.28	17.88	88.19	12.35	0.85
MEAN	20.29	17.38	85.75	12.37	0.79
SEM	0.29	0.31	1.47	0.29	0.03
CV	2.43	3.04	2.96	4.14	6.51
CD 5%	0.86	0.92	4.40	0.86	0.09

Table 4: Growth parameters influenced by Integrated Nutrient Management (SNK 07337)

Treatments	Plant Height (m)	Cane height (m)	No. of Internodes	Tillers/ plot
T1	3.23	1.55	15.89	66.77
T2	3.38	1.55	15.44	66.63
T3	3.39	1.39	14.33	67.57
T4	3.05	1.37	15.30	63.40
T5	3.28	1.39	15.22	63.30
T6	3.45	1.45	14.77	68.33
T7	3.37	1.37	14.77	64.23
T8	2.98	1.26	14.21	64.00
T9	3.51	1.56	15.77	63.50
MEAN	3.29	1.43	15.08	65.30
SEM	0.08	0.07	0.68	1.47
CV	4.45	8.44	7.82	3.90
CD 5%	0.25	0.21	2.04	4.41

Table 5: Yield and Yield attributing parameters influenced by Integrated Nutrient Management (SNK 07337)

Treatments	Cane yield (t/ha)	cane Girth (cm)	NMC/plot	CCS Yield (t/ha)	Single Cane weight (kg)
T1	101.00	3.28	39.40	12.05	1.23
T2	98.06	3.31	44.13	10.39	1.36
T3	109.88	3.37	43.63	11.58	1.20
T4	83.54	3.38	38.97	9.25	1.20
T5	111.23	3.33	43.90	12.62	1.19
T6	103.29	3.46	58.13	10.39	1.29
T7	128.01	3.38	44.27	13.38	1.19
T8	94.35	3.40	45.10	9.98	1.07
T9	111.64	3.28	43.70	12.44	1.29
MEAN	104.56	3.36	44.58	11.34	1.22
SEM	6.31	0.08	4.75	0.76	0.06
CV	10.45	3.91	18.47	11.53	8.50
CD 5%	18.92	0.23	14.25	2.26	0.18

Table 6: quality parameters influenced by Integrated Nutrient Management (SNK 07337)

Treatments	Brix % 12M	Sucrose %	Purity %	CCS %	Juice weight (kg)
T1	19.18	17.16	89.47	11.93	0.65
T2	17.82	15.47	86.83	10.61	0.73
T3	17.66	15.33	86.89	10.51	0.69
T4	18.49	16.01	86.55	10.96	0.65
T5	18.82	16.48	87.57	11.35	0.62
T6	17.32	14.79	85.37	10.05	0.69
T7	17.32	15.19	87.69	10.47	0.62
T8	18.16	15.61	85.96	10.65	0.55
T9	17.99	16.06	89.31	11.16	0.73
MEAN	18.09	15.79	87.29	10.85	0.66
SEM	0.35	0.39	1.80	0.35	0.05
CV	3.32	4.32	3.56	5.63	13.27
CD 5%	1.04	1.18	5.39	1.06	0.15

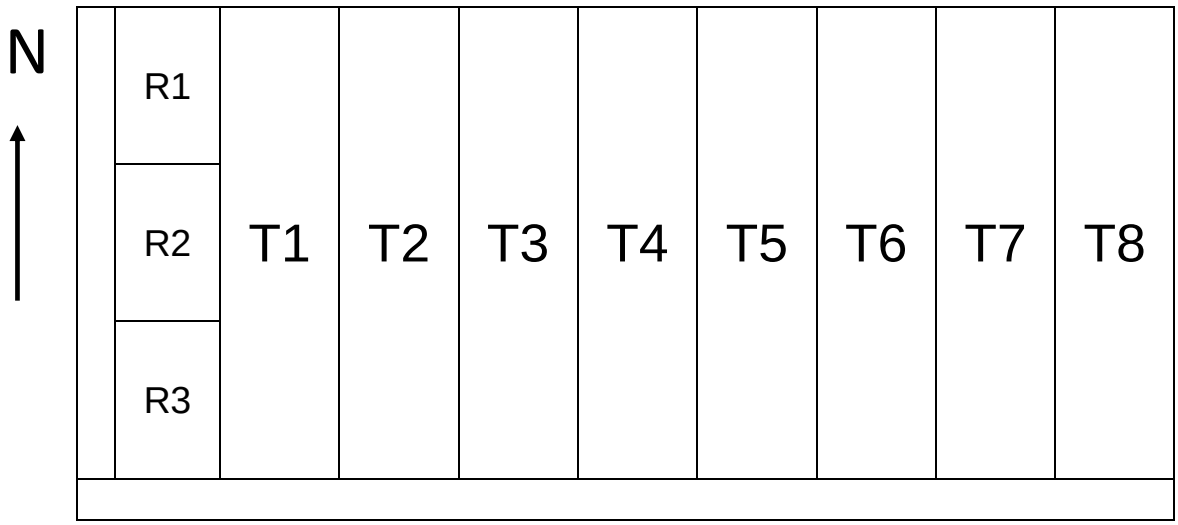
YEARLY RESEARCH WORK PLAN FOR THE YEAR 2015-2016

1	**Project No.**	AICRP (AS 69)
2	**Department**	Sugarcane Agronomy
3	**Project title**	Use of plant growth regulators (PGRs) for enhanced yield and quality of sugarcane
4	**Objectives**	1. To accelerate rate and extent of sugarcane germination through the use of PGRs. 2. To assess the effect of PGRs on sugarcane growth, yield and juice quality.
5	**Project leader Associate**	Dr. B.T. Nadagouda, Agronomist, AICRP (S)
6	**New/continued**	Plant Cane I
7	**Year of start**	2015-16
8	**design**	RBD
9	**Treatment details**	

Treatments (8)	Sugarcane (Plant crop)
T1	Conventional Planting / Farmers practice (3 bud setts)
T2	Planting of setts after over nights soaking in water
T3	Planting of setts after over nights soaking in 50 ppm ethrel solution
T4	Planting of setts after over nights soaking in 100 ppm ethrel solution
T5	T1 + GA_3 spray (35 ppm) at 90, 120 and 150 DAP
T6	T2 + GA_3 spray (35 ppm) at 90, 120 and 150 DAP
T7	T3 + GA_3 spray (35 ppm) at 90, 120 and 150 DAP
T8	T4 + GA_3 spray (35 ppm) at 90, 120 and 150 DAP

10	a) No. of replication	3
	b) Plot size	7.2 m X 6 m (6 rows of 1.2m)
	c) Date of planting	14-02-2015
	d) Plot No.	3
	e) Variety	SNK 632

Layout of experiment



AS 69 Use of plant growth regulators (PGRs) for enhanced yield and quality of sugarcane

Growth parameters (Table 1)

Among the growth parameters tested all were significant except the number of internodes, which was on par.

Significantly higher germination count and percentage was recorded in T3 (over night soaking of setts in 50 ppm ethrel solution) and the lower count was recorded in T5 (Conventional planting+ 35 ppm GA sprays).

Cane height was significantly higher in T3 and lower cane height was recorded in T4. The tiller numbers was significantly higher in T8 (over night soaking of setts in 100 ppm ethrel + GA spray) and the lower tiller numbers was recorded in T1.

Yield and yield attributing parameters (Table 2)

Significantly higher cane yield, number of millable canes and CCS yield was recorded in T3 (overnight soaking of Setts in 50 ppm ethrel) and the lower cane and CCS yield in T8 and NMC in T7. Cane girth and single cane weight were on par to each other among the treatments tested. However, higher cane girth and single cane weight was recorded in T3.

Quality parameters (Table 3)

All the quality parameters tested were on par to each other among the treatments tested except purity percent. Significantly the higher purity percent was recorded in T5 and the lower units were recorded in T1.

Conclusion: The higher germination count, cane height, number of internodes among the growth parameters and higher cane yield, cane girth, NMC, CCS Yield and single cane weight among the yield and yield attributing parameters clearly indicates the benefit of overnight soaking of setts in 50 ppm ethrel solution before planting in beneficial without altering the quality parameters.

Table 1: Effect of plant growth regulators on Growth parameters of Sugarcane (SNK 632)

Treatments	Germination count 30 days	Germination %	Cane height (m)	No. of Internodes	Tillers/ plot
T1	22.00	61.11	2.29	22.53	48.72
T2	24.56	68.21	2.27	22.63	55.33
T3	31.17	86.57	2.51	24.87	59.39
T4	23.89	66.36	2.24	23.50	51.72
T5	18.78	52.16	2.28	22.67	52.67
T6	24.94	69.29	2.32	23.43	55.72
T7	27.39	76.08	2.41	22.97	54.50
T8	26.00	72.22	2.25	23.00	57.17
MEAN	24.84	69.00	2.32	23.20	54.40
SEM	1.17	3.26	0.08	0.79	1.72
CV	8.17	8.17	5.66	5.90	5.48
CD 5%	3.55	9.87	0.23	2.40	5.22

Table 2: Yield and Yield attributing parameters influenced by Effect of plant growth regulators of Sugarcane (SNK 632)

Treatments	Cane yield (t/ha)	Cane Girth (cm)	NMC/plot	CCS yield (t/ha)	Single Cane weight (kg)
T1	94.21	3.48	41.06	12.67	2.32
T2	96.76	3.65	46.28	13.47	2.22
T3	99.54	3.65	47.67	13.62	2.36
T4	89.74	3.59	42.06	12.41	2.26
T5	89.35	3.42	42.11	12.60	2.22
T6	93.60	3.50	42.56	13.06	2.25
T7	95.45	3.45	39.39	13.22	2.22
T8	81.56	3.46	43.17	11.42	2.17
MEAN	92.53	3.52	43.03	12.81	2.25
SEM	4.14	0.11	1.90	0.61	0.11
CV	7.75	5.26	7.66	8.29	8.69
CD 5%	12.56	0.32	5.77	1.86	0.34

Table 3: quality parameters influenced by Effect of plant growth regulators of Sugarcane (SNK 632)

Treatments	Brix % (12M)	Sucrose %	Purity %	CCS %	Juice weight (kg)
T1	22.61	19.82	86.79	13.82	1.27
T2	22.44	20.03	89.27	13.92	1.25
T3	22.61	19.85	87.81	14.00	1.33
T4	22.44	19.95	88.91	13.84	1.26
T5	22.61	20.25	89.61	13.89	1.22
T6	22.78	20.16	88.54	13.95	1.24
T7	22.78	20.08	88.21	13.87	1.21
T8	22.44	20.11	89.60	13.88	1.17
MEAN	22.59	20.01	88.59	13.89	1.24
SEM	0.19	0.13	0.80	0.13	0.07
CV	1.42	1.12	1.56	1.61	9.84
CD 5%	NS	NS	2.42	NS	NS