

## AGRONOMY AND SOIL SCIENCE

### All India Coordinated Research Project on Sugarcane

- Title** : Use of plant growth regulator (PGRs) for enhanced yield and quality of sugarcane
- Objective** : To accelerate rate and extent of sugarcane germination through the use of PGRs
- Worker** : Dr. K. Banerjee
- Design** : RBD with three replications
- Treatments(8)** : T1 : Conventional planting/Farmers' practice  
T2 : Planting of setts after overnight soaking of in water  
T3 : Planting of setts overnight soaking in 50ppm ethereal solution  
T4 : Planting of setts overnight soaking in 100ppm ethereal solution  
T5 : T1 + GA3 spray (35ppm) at 90, 120 and 150 DAP  
T6 : T2 + GA3 spray (35ppm) at 90, 120 and 150 DAP  
T7 : T3 + GA3 spray (35ppm) at 90, 120 and 150 DAP  
T8 : T4 + GA3 spray (35ppm) at 90, 120 and 150 DAP
- Variety** : *Swapan (CoB 99161)*
- Plot Size** : Gross – 6m x 6 rows x 0.9m  
Net – 5m x 4 rows x 0.9m
- Date of Sowing** : 03.02.2016

**Table: 1. Germination(%) at 10 days interval starting from 10 DAP and upto 50DAP under different treatments**

Treatments	10DAP	20DAP	30DAP	40DAP	50DAP
T1	nil	10.20	19.25	31.33	37.46
T2	nil	11.35	20.11	32.45	39.11
T3	nil	15.22	23.45	47.88	49.20
T4	nil	15.27	23.95	48.23	50.11
T5	nil	10.28	19.33	30.95	35.78
T6	nil	12.23	20.57	32.05	38.19
T7	nil	15.19	23.65	47.85	47.95
T8	nil	16.20	23.80	49.11	49.23
SEm(±)	....	0.38	0.76	1.74	1.68
CD at 5%	NS	1.15	2.27	5.22	5.04
CV(%)	6.47	5.35	6.58	1.47	2.45

**Table: 2. Shoot count (000/ha) of spring sugarcane beginning from 90DAP under different treatments**

Treatments	90DAP	120DAP	Maturity
T1	90.36	106.25	113.14
T2	92.45	115.73	117.28
T3	100.12	121.25	127.46
T4	101.25	125.37	136.15
T5	125.35	129.87	139.22
T6	128.27	131.22	147.34
T7	130.30	137.45	152.26
T8	132.17	138.11	152.35
SEm(±)	3.46	1.92	1.85
CD at 5%	10.39	5.77	5.57
CV(%)	5.35	2.89	6.14

**Table: 3. Biomass accumulations (q/ha) of spring sugarcane under different treatments**

Treatments	90DAP	120DAP	150DAP	180DAP	210DAP	240DAP	270DAP
T1	3.19	67.35	74.22	90.29	123.56	210.43	226.11
T2	3.20	69.11	75.27	93.56	130.71	217.37	229.35
T3	3.46	72.57	79.62	97.57	147.92	225.97	236.32
T4	3.48	75.62	80.11	98.33	150.22	229.13	240.19
T5	3.49	79.17	85.67	107.11	157.31	237.33	247.22
T6	3.57	82.25	89.25	109.35	169.25	239.25	249.37
T7	3.62	89.11	92.56	110.26	172.32	263.33	253.63
T8	3.63	90.25	93.22	112.75	180.45	265.62	259.27
SEm(±)	0.08	1.75	1.96	2.16	3.43	6.85	6.39
CDat 5%	0.23	5.26	5.88	6.47	10.29	20.56	19.17
CV(%)	5.47	6.19	2.58	6.44	5.47	8.19	6.56

**Table : 4. Plant Height (cm) of spring sugarcane at different days after planting under different treatments**

Treatments	60DAP	90DAP	120DAP	150DAP	Maturity
T1	120.35	188.45	265.27	287.30	292.50
T2	121.22	191.35	268.35	288.71	293.70
T3	128.75	200.92	279.97	290.85	303.45
T4	132.22	201.32	282.22	292.11	304.79
T5	119.72	190.75	311.75	342.22	337.46
T6	120.95	191.33	311.97	324.99	338.19
T7	127.99	199.47	322.50	336.19	342.72
T8	121.67	200.95	328.21	338.23	347.11
SEm(±)	1.55	2.39	3.44	3.42	5.08
CDat 5%	4.65	7.19	10.33	10.25	15.25
CV(%)	6.87	8.19	7.23	2.45	6.54

**Table: 5. Quantitative characters of spring sugarcane under different treatments**

Treatments	NMC(000/ha) at 12month	Stalk Length(cm)	Stalk diameter(cm)	Single cane weight(kg)	Cane Yield(t/ha)	CCS(t/ha)
T1	65.7	267.5	2.20	0.785	61.5	6.70
T2	67.2	270.1	2.21	0.791	63.1	7.08
T3	72.5	288.5	2.29	0.795	67.8	7.64
T4	75.1	289.3	2.30	0.807	70.7	7.98
T5	80.2	310.6	2.39	0.925	84.1	9.60
T6	81.5	312.5	2.42	0.927	85.7	9.79
T7	85.7	320.6	2.46	0.997	87.8	10.15
T8	86.5	322.1	2.47	0.999	89.5	10.37
SEm(±)	1.88	3.53	0.06	0.008	1.89	0.82
CDat 5%	5.65	10.60	0.19	0.025	5.67	2.45
CV(%)	2.54	6.31	5.78	1.45	2.47	2.56

**Table: 6. Qualitative characters of spring sugarcane under different treatments**

Treatments	Brix(%)	Sucrose(%)	Purity(%)	CCS(%)
T1	18.46	15.72	88.20	10.90
T2	18.47	15.73	88.22	11.23
T3	18.56	15.82	88.5	11.27
T4	18.59	15.87	88.37	11.29
T5	18.85	16.01	88.42	11.42
T6	19.03	16.26	88.47	11.43
T7	19.23	16.45	88.52	11.56
T8	19.26	16.48	88.56	11.59
SEm(±)	.....	.....	.....	.....
CDat 5%	NS	NS	NS	NS
CV(%)	6.98	8.45	4.56	6.47