

- 120kg N/ha (as Urea 46 % N), applied at planting (54 kg/ha) and 12 weeks after planting (66 kg/ha).
- 60kg P/ha (as DAP 18%N and 20%P) was applied at planting.
- 150kg K/ha (as KCl, 50% K) was applied at planting.

5. RESULTS AND DISCUSSION

Leaf Analysis

- Levels of N, P, K, Ca and Mg were satisfactory and above their respective thresholds (Table 1).
- There were statistically significant differences in levels of all nutrients among varieties.

Table 1: Third leaf nutrient content (% dm) at 6.7 months of age in October

Variety	% dm				
	N	P	K	Ca	Mg
NCo376	2.00	0.23	1.24	0.30	0.20
N19	1.98	0.23	1.37	0.30	0.18
N25	1.99	0.23	1.63	0.31	0.21
N32	2.00	0.23	1.28	0.31	0.19
N36	2.02	0.23	1.30	0.29	0.22
N38	2.03	0.24	1.34	0.38	0.28
Mean	2.00	0.23	1.36	0.32	0.21
LSD(0.05)	0.03	0.011	0.11	0.05	0.026
LSD(0.01)	NS	NS	0.15	0.06	0.034
CV%	1.7	5.2	9.0	16.7	13.4

Table 2: Variety differences in third leaf nutrient content (% NCo376)

Variety	N	P	K	Ca	Mg
N19	99	100	110*	100	90
N25	100	100	131**	103	105
N32	100	100	103	103	95
N36	101	100	105	97	110
N38	102*	104*	108	127**	140**

* Statistically significant (P=0.05)

** Statistically significant (P=0.01)

Growth Measurements

- The stalk populations of NCo376, N25, N32 and N38 were statistically similar and significantly higher than those of N19 and N36 (Table 3).
- N25 and N36 were statistically similar and produced significantly taller stalks than all other varieties. N32 and N38 produced the shortest stalks. N19 and NCo376 were intermediate and statistically similar (Table 3).

Table 3: Growth measurements at various ages

Variety	Stalk population ('000/ha)				Stalk height (cm to TVD)			
	Jul. (3.8m)	Aug. (5.0m)	Sep. (6.5m)	Jan. (10.2m)	Jul. (3.8m)	Aug. (5.0m)	Sep. (6.5m)	Jan. (10.2m)
NCo376	182	179	181	144	32	38	67	184
N19	149	146	152	116	43	51	73	197
N25	152	148	154	132	44	53	81	217
N32	176	163	170	138	24	29	48	169
N36	137	138	146	117	47	44	77	208
N38	184	170	182	138	33	39	56	179
Mean	163	157	164	131	37	42	67	192
LSD(0.05)	14	10	10	13	5	5	5	14
LSD(0.01)	19	14	13	17	6	6	7	19
CV%	9.7	7.3	6.5	10.6	14.3	12.4	8.8	8.0

Pests and Diseases

- All varieties were affected by Eldana at harvest. There were no significant differences in infection (Table 4).
- Smut infection was generally very low and none was observed on N19 (Table 4).

Table 4: Eldana damage at harvest and smut levels from June to September

Variety	Eldana (% damaged internodes)	% Smut whips			
		Jun. (3.2m)	Jul. (3.8m)	Aug. (5.0m)	Sep. (6.5m)
NCo376	1.58	0.12	0.10	0.09	0.21
N19	1.13	0.00	0.00	0.00	0.00
N25	1.94	0.01	0.01	0.05	0.00
N32	1.20	0.09	0.28	0.24	0.05
N36	1.33	0.02	0.00	0.00	0.00
N38	1.10	0.00	0.01	0.01	0.00
Mean	1.38	0.04	0.07	0.07	0.04
LSD (0.05)	NS	NS	0.19	NS	0.12
LSD (0.01)	-	-	NS	-	0.16
CV %	60.7	392.5	308.1	309.4	314.2

Harvest Results

- N25 and N38 had significantly higher cane yields than the other varieties, while N32 and N36 had significantly the lowest (Table 5). NCo376 was intermediate and statistically higher than N19, N32 and N36.
- Cane quality (mean sucrose and erc% cane) was statistically similar for N32 and N36 and significantly higher than the other varieties. N25, N38 and NCo376 were statistically similar and significantly the lowest. N19 was statistically similar to NCo376.
- Although N25 had the highest yields, there were no significant differences in the mean sucrose and erc yields among the varieties.

Table 5: Harvest Data

Variety	Tcane /ha	Suc. % cane	Tsuc/ha	Erc. % cane	Terc/ha
NCo376	165	12.63	20.8	11.03	18.1
N19	149	13.60	20.2	12.03	17.9
N25	191	11.88	22.8	10.35	19.8
N32	132	14.10	18.6	12.62	16.6
N36	146	14.83	21.7	13.45	19.7
N38	180	11.73	21.1	10.11	18.2
Mean	161	13.13	20.9	11.60	18.4
LSD(0.05)	15	1.03	NS	1.10	NS
LSD(0.01)	20	1.37	-	1.47	-
CV%	10.2	8.7	14.6	10.5	16.0

NB: Sucrose measured as pol

6. CONCLUSIONS

- Cane yields were significantly higher in N25 and N38 than the other varieties. The cane quality of N32 and N36 was significantly higher than that of the other varieties.
- All varieties were affected by Eldana at harvest, with no statistical difference in infection among varieties. Smut infection was generally low in all varieties and absent in N19.
- Varietal differences in third leaf nutrient concentrations indicate that thresholds established for NCo376 may not be appropriate for the new N varieties.
- This trial has been continued and is now in its 1st ratoon.

BMS
26/9/2005

7. APPENDIX

Appendix 1: Sample data at harvest

Variety	Fresh wt. (g/stalk)	Moisture (% cane)	Dry wt. (g/stalk)	Purity (% cane)	Sucrose (% cane)	Erc (% cane)	Sucrose wt. (g/stalk)	Erc wt. (g/stalk)	Sucrose (% dm)
NCo376	1228	75.3	304.8	84.5	12.63	11.03	157.0	137.5	51.0
N19	1343	74.0	350.1	86.3	13.60	12.03	182.7	161.6	52.3
N25	1283	77.0	295.9	84.2	11.88	10.35	152.8	133.0	51.6
N32	909	73.8	238.1	87.8	14.10	12.62	128.1	114.6	53.9
N36	1370	71.9	385.6	89.6	14.83	13.45	203.3	184.3	52.8
N38	1298	76.7	302.3	83.2	11.73	10.11	152.3	131.5	50.4
Mean	1239	74.8	312.8	85.9	13.13	11.60	162.7	143.8	52.0
LSD (0.05)	191	1.65	56.66	2.41	1.03	1.10	30.14	27.93	2.28
LSD (0.01)	255	2.20	75.45	3.21	1.37	1.47	40.14	37.19	NS
CV%	17.1	2.5	20.1	3.1	8.7	10.5	20.5	21.5	4.9

NB: Sucrose measured as pol