

Notes on treatments

- * All rates of Ethrel were sprayed at 8 months of age, 14 weeks before harvesting.
- * Fusilade Super was sprayed 9 weeks before harvesting.
- * Cane juice purity, sucrose % cane and moisture % cane at the time of spraying Ethrel was 60%; 6,2% and 80% respectively.
- * Precise volumes of ripeners applied: Ethrel 1,55 ℓ/ha; 2,10 ℓ/ha and 2,54 ℓ/ha. Fusilade 0,59 ℓ/ha.

4. SAMPLING METHOD AND INTERVALS

- 4.1 Sampling commenced at the time of spraying Ethrel and then at 2; 4; 6; 8; 9,7 ; 12 and 14 weeks.
- 4.2 Samples comprised 16 stalks taken from 4 locations in the nett lines (ie four stalks from each sampling site).

5. RESULTS

5.1 Table I Harvest Data

TREATMENT	TONS CANE/HA	ERS % CANE	TONS ERS/HA	SUCROSE % CANE	TONS SUCROSE/HA
Control	85	12,7	10,8	14,4	12,3
Fus 0,60ℓ/ha	69	11,8	8,3	13,7	9,6
Eth 1,5ℓ/ha	89	12,7	11,2	14,0	12,4
Eth 2,00ℓ/ha	75	11,5	8,5	13,4	10,0
Eth 2,50ℓ/ha	88	10,8	9,6	12,7	11,2
Eth 1,5ℓ + Fus 0,60ℓ/ha	86	12,7	10,9	14,4	12,3
Eth 2,00ℓ + Fus 0,60ℓ/ha	84	12,5	10,6	14,2	12,0
Eth 2,50ℓ + Fus 0,60ℓ/ha	80	13,5	10,7	15,1	12,0
LSD Treatments (0,05)*	13	1,6	2,3	1,3	2,3
(0,01)**	18	2,2	3,1	1,8	3,1
Significance	*	*	*	*	*
Mean	82	12,3	10,1	14,0	11,5
CV%	12,7	10,3	17,5	7,2	15,5

Table II Cane quality of tops (\pm 6 internodes) and yield differences (gm Ers/stalk) comparing two methods of sampling* at harvest.

TREATMENT	Ers % CANE OF TOPS	gms Ers/stalk differences comparing Normal sampling - Commercial sampling
Control	Sampled Incorrectly	+ 9,9
Fus 0,60 l/ha	4,9	+ 4,8
Eth 1,50 l/ha	2,1	+ 5,4
Eth 2,00 l/ha	2,7	+ 0,7
Eth 2,50 l/ha	4,2	+ 0,4
Eth 1,50 l + Fus 0,60 l/ha	8,8	+ 12,9
Eth 2,00 l + Fus 0,60 l/ha	7,9	+ 15,2
Eth 2,50 l + Fus 0,60 l/ha	5,9	+ 26,8

* Normal sampling - topped at the natural breaking point or Fusilade cauterization
 Commercial sampling - sampled from commercially topped cane which is generally cut below the normal sampling point.

Table III Treatment effects on sucrose % cane from time of spraying Ethrel to harvest

TREATMENTS	WEEK AFTER ETHREL SPRAYING	0	2	4	6	8	9,7	12	14
	WEEKS AFTER FUSILADE SPRAYING	-5	-3	-1	1	3	4,7	7	9
Control		6,7	7,2	8,7	9,8	11,6	12,5	13,7	14,4
Fus @ 0,60 l/ha		5,6	6,8	8,4	9,1	11,7	12,4	13,5	13,7
Eth @ 1,50 l/ha		6,8	7,2	9,2	10,3	11,7	12,2	13,7	14,0
Eth @ 2,00 l/ha		6,0	7,1	8,4	9,9	11,5	12,3	12,9	13,4
Eth @ 2,50 l/ha		5,8	6,7	8,5	9,5	11,4	12,3	12,5	12,7
Eth @ 1,50 l & Fus @ 0,60 l/ha		6,6	7,4	8,8	10,1	11,8	12,7	14,2	14,4
Eth @ 2,00 l & Fus @ 0,60 l/ha		5,9	6,9	8,6	10,2	11,9	12,8	14,0	14,2
Eth @ 2,50 l & Fus @ 0,60 l/ha		6,3	7,8	9,1	9,9	12,2	13,1	14,1	15,1
LSD Treatments (0,05)*		1,2	1,2	1,3	1,5	1,0	1,3	1,3	1,3
(0,01)**		1,6	1,6	1,7	2,0	1,3	1,7	1,8	1,8
Significance		*	N.S.	N.S.	N.S.	N.S.	N.S.	*	**
Mean		6,2	7,2	8,7	9,9	11,7	12,5	13,6	14,0
CV%		15,1	12,5	11,2	11,4	6,5	7,8	7,5	7,2

6. COMMENTS

- 6.1 The cane at this site was erect at harvest but stalk growth and populations taken before spraying showed a degree of variability (cane heights to TVD 1980 mm - 2340 mm; populations 121 000 - 138 000 per hectare).
- 6.2 Profuse flowering and pithy stalks appeared in the controls as well as where Ethrel and Fusilade had been used on their own. However, where the combination treatment had been applied, floral formation and development of pith was not evident. It appears that where both chemicals were used, the initial slowing down of growth with Ethrel enabled Fusilade to be more effective in preventing flowering. Irrespective of rate, Ethrel failed to suppress flowering possibly owing to incorrect timing of application or ineffectiveness of this chemical on N14. Flower development was too advanced by the time the single Fusilade treatment was applied (5 weeks after Ethrel).
- 6.3 Cane yields were low due to sampling intensity and were significantly reduced where Fusilade on its own was sprayed (Table I).
- 6.4 Cane quality at spraying was low and variable (CV 15%), but at 7 to 8 weeks after Ethrel application the combination treatments (particularly with the high rate of Ethrel) were better on average than the others (Table III). Relatively high Ers % cane (Table II) in the top section (\pm 6 internodes) of stalk was recorded in the combination treatments that were free of pith. This table also reveals that a considerable amount of recoverable sugar from the combination treatments must have remained in the field as juice filled stalks were topped identically to pithy stalks. This is substantiated by the greater discrepancy in Ers gm/stalk between normal and commercial sampling for combination treatments (Table II).
- 6.5 Although the sucrose yield results failed to identify an optimum chemical ripening treatment for early cut N14, it appears that yields could benefit where the combination treatment is used to prevent flowering and/or pith formation as well as to artificially ripen the crop. To achieve the full advantage of this approach however, spray timings would have to be precise and attention would have to be paid to high accurate topping at harvest.