

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code: A Flower 1/81/R2

Cat. No.: 1248

TITLE: Flower control and ripening x four varieties.

1. Particulars of the crop:

| | | |
|------------------------------------|--------------------------------------|--|
| <u>This crop</u> | : Second ratoon. | <u>Spray method:</u> CO ₂ operated boom sprayer, with two TK1 floodjet nozzles. |
| <u>Site</u> | : Pongola Field Station Block 314 | <u>Pressure:</u> 200kPa |
| <u>Region</u> | : Northern irrigated area. | <u>Volume/ha:</u> 70ℓ |
| <u>Soil system</u> | : Komatipoort | <u>Weather at spraying:</u> |
| <u>Soil form/series</u> | : Hutton/ Makatini. | No wind, Sunny. Temperature 30,7°C |
| <u>Design</u> | : Randomised block 3 replications | <u>Conditions of cane at spraying:</u> |
| <u>Plot size</u> | : 13,5 m x 4 rows x 1,4 m | Well grown, 11 green leaves. |
| <u>Variety</u> | : NCo 376, J59/3, N11 and N12 | Av.J.P.% = NCo 376= 53 N11 = 59 J59/3 = 57 N12 = 55 |
| <u>Date & age at spraying:</u> | 1/3/82 9,1 months | <u>Sampling techniques:</u> |
| <u>Date & age at harvest</u> | : 26/5/82 12 months | 4 stalks taken from each of 4 points (2 m apart) in net rows o each plot. Starting point advanced with each sampling. |
| <u>Sampling dates</u> | : 1/3/82, 18/3, 8/4, 4/5, 25/5 | |
| <u>Irrigation</u> | : 732 mm | |
| <u>Infall</u> | : 468 mm 1200 mm | |

2. Objectives:

To determine the effect of Polado and Ethrel on flower emergence and sucrose yield when sprayed in early March.

3. Treatments:

1. Control - not sprayed.
2. Polado at 500g product/ha - 375g a.i./ha
3. Polado at 400g product/ha - 300g a.i./ha
4. Ethrel at 1,5ℓ product/ha - 720g a.i./ha

Total number of lodged cane rows in each treatment at intervals after spraying

| Dates & Weeks after spraying | NCo 376 | | | | | J59/3 | | | | | N11 | | | | | N12 | | | | |
|------------------------------------|---------|------|-----|-----|------|-------|------|-----|-----|------|-----|------|-----|-----|------|-----|------|-----|-----|------|
| | 1/3 | 26/3 | 1/4 | 4/5 | 25/5 | 1/3 | 26/3 | 1/4 | 4/5 | 25/5 | 1/3 | 26/3 | 1/4 | 4/5 | 25/5 | 1/3 | 26/3 | 1/4 | 4/5 | 25/5 |
| Treatments | 0 | 3,5 | 4,5 | 9 | 12 | 0 | 3,5 | 4,5 | 9 | 12 | 0 | 3,5 | 4,5 | 9 | 12 | 0 | 3,5 | 4,5 | 9 | 12 |
| Control | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 5 | 5 | 0 | 1 | 1 | 3 | 3 | 0 | 0 | 1 | 1 | 1 |
| Polado 0,5 kg | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 5 | 5 | 6 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 |
| Polado 0,4 kg | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 5 | 6 | 0 | 1 | 1 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| Ethrel 1,5 l | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 6 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 |

Rainfall and Irrigation (mm)

| | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
|----------------------------|------|-----|------|-------|-----|-------|-------|-------|------|-------|-------|-----|
| Rain | 28,4 | 0 | 19,8 | 44,9 | 64 | 63,7 | 40,1 | 53,4 | 20,3 | 99,9 | 68,9 | 0 |
| Irrigation | 0 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 0 |
| Total | 28,4 | 61 | 80,8 | 105,9 | 125 | 124,7 | 101,1 | 114,4 | 81,3 | 160,9 | 129,9 | 0 |
| No. of days when *ASM=0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 14 | 17 | 2 | 1 | 12 |

*A.S.M. = Available soil moisture according to P&L a/c

Results from samples taken.

Stalk mass (g/stalk) changes as % of 0 Week : actual mass at 0 weeks in brackets.

| Varieties | NCo 376 | | | | | J59/3 | | | | | N11 | | | | | N12 | | | | |
|------------------------------|---------|------|-----|------|------|-------|------|-----|------|------|-------|------|-----|------|------|-------|------|-----|------|------|
| Dates & Weeks after spraying | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 |
| Treatments | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 |
| Control | (843) | | | | | (750) | | | | | (725) | | | | | (431) | | | | |
| | 100 | 90 | 95 | 99 | 128 | 100 | 104 | 108 | 117 | 133 | 100 | 81 | 87 | 95 | 121 | 100 | 116 | 148 | 145 | 175 |
| Polado 0,5kg | (681) | | | | | (781) | | | | | (631) | | | | | (431) | | | | |
| | 100 | 99 | 104 | 98 | 108 | 100 | 94 | 99 | 109 | 155 | 100 | 112 | 110 | 119 | 149 | 100 | 130 | 138 | 140 | 175 |
| Polado 0,4kg | (588) | | | | | (700) | | | | | (612) | | | | | (450) | | | | |
| | 100 | 126 | 126 | 123 | 187 | 100 | 115 | 131 | 122 | 176 | 100 | 99 | 115 | 123 | 159 | 100 | 110 | 112 | 129 | 165 |
| Ethrel 1,5ℓ | (713) | | | | | (700) | | | | | (675) | | | | | (514) | | | | |
| | 100 | 103 | 109 | 115 | 146 | 100 | 112 | 123 | 128 | 168 | 100 | 101 | 109 | 116 | 151 | 100 | 97 | 115 | 120 | 154 |
| MEAN | (706) | | | | | (733) | | | | | (661) | | | | | (457) | | | | |
| | 100 | 104 | 109 | 109 | 142 | 100 | 106 | 115 | 119 | 158 | 100 | 98 | 105 | 113 | 145 | 100 | 113 | 128 | 134 | 167 |
| C.V.% | - | 10,6 | 9,4 | 11,9 | 12,4 | - | 10,6 | 9,4 | 11,9 | 12,4 | - | 10,6 | 9,4 | 11,9 | 12,4 | - | 10,6 | 9,4 | 11,9 | 12,4 |

Ers % cane

| Dates & Weeks after spraying | 3/3 18/3 8/4 4/5 25/5 | | | | | 3/3 18/3 8/4 4/5 25/5 | | | | | 3/3 18/3 8/4 4/5 25/5 | | | | | 3/3 18/3 8/4 4/5 25/5 | | | | |
|------------------------------------|-----------------------|-------|-------|-------|-------|-----------------------|------|------|------|------|-----------------------|------|-------|--------|------|-----------------------|------|------|-----|-------|
| | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 |
| Treatments | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 |
| Control | 2,4 | 3,7 | 5,8 | 7,9 | 9,7 | 3,6 | 6,5 | 8,4 | 10,4 | 11,6 | 3,1 | 6,1 | 7,0 | 9,0 | 10,7 | 3,2 | 4,9 | 5,9 | 8,2 | 9,6 |
| Polado 0,5 kg | 3,2 | 6,7** | 7,2** | 9,8** | 10,8* | 3,4 | 6,5 | 9,7* | 10,4 | 11,8 | 3,5 | 6,4 | 8,8** | 9,8 | 11,1 | 2,6 | 5,6 | 6,8 | 8,1 | 9,8 |
| Polado 0,4 kg | 2,8 | 4,6 | 6,2 | 8,2 | 9,8 | 3,2 | 5,5 | 8,7 | 10,4 | 11,9 | 3,9 | 5,7 | 7,8 | 10,3* | 11,0 | 2,6 | 5,3 | 7,2* | 8,5 | 10,0 |
| Ethrel 1,5ℓ | 2,3 | 5,9** | 7,1* | 9,6** | 10,8* | 3,0 | 5,6 | 8,3 | 10,8 | 11,4 | 3,4 | 7,2 | 8,9** | 11,1** | 11,3 | 2,4 | 4,4 | 5,8 | 8,5 | 10,6* |
| MEAN | 2,7 | 5,2 | 6,7 | 8,9 | 10,3 | 3,3 | 6,0 | 8,8 | 10,5 | 11,7 | 3,5 | 7,5 | 8,1 | 10,1 | 11,0 | 2,7 | 5,7 | 7,9 | 8,3 | 10,0 |
| C.V. % | | 16,9 | 9,2 | 6,7 | 5,7 | | 16,9 | 9,2 | 6,7 | 5,7 | | 16,9 | 9,2 | 6,7 | 5,7 | | 16,9 | 9,2 | 6,7 | 5,7 |
| L.S.D. (0,05)* | | 1,6 | 1,2 | 1,1 | 1,0 | | 1,6 | 1,2 | 1,1 | 1,0 | | 1,6 | 1,2 | 1,1 | 1,0 | | 1,6 | 1,2 | 1,1 | 1,0 |
| L.S.D. (0,01)** | | 2,1 | 1,6 | 1,4 | 1,4 | | 2,1 | 1,6 | 1,4 | 1,4 | | 2,1 | 1,6 | 1,4 | 1,4 | | 2,1 | 1,6 | 1,4 | 1,4 |

Juice purity %

| Dates & Weeks after spraying | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|-----|--------------|-------------|-------------|------|-----|------|-----|-----|------|-----|------|--------------|-------------|------|-----|------|-----|-----|------|
| | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 | 3/3 | 18/3 | 8/4 | 4/5 | 25/5 |
| Treatments | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 | 0 | 2 | 5 | 9 | 12 |
| Control | 54 | 56 | 67 | 76 | 82 | 59 | 67 | 75 | 81 | 84 | 57 | 65 | 71 | 80 | 86 | 57 | 62 | 68 | 76 | 80 |
| Polado 0,5 kg | 58 | <u>69</u> ** | <u>72</u> * | <u>80</u> * | 83 | 57 | 65 | 78 | 81 | 85 | 60 | 69 | <u>78</u> * | 83 | 85 | 54 | 65 | 70 | 77 | 81 |
| Polado 0,4 kg | 55 | 61 | 70 | 76 | 82 | 56 | 63 | 74 | 81 | 85 | 60 | 65 | <u>76</u> * | 83 | 86 | 54 | 63 | 72 | 77 | 82 |
| Ethrel 1,5ℓ | 53 | <u>66</u> ** | <u>72</u> * | <u>80</u> * | 84 | 55 | 64 | 74 | 81 | 84 | 58 | 69 | <u>79</u> ** | <u>84</u> * | 87 | 53 | 60 | 68 | 77 | 82 |
| MEAN | 55 | 63 | 70 | 78 | 83 | 57 | 65 | 75 | 81 | 85 | 59 | 67 | 76 | 83 | 86 | 55 | 63 | 69 | 77 | 81 |
| C.V. % | | 5,3 | 3,9 | 2,4 | 1,8 | | 5,3 | 3,9 | 2,4 | 1,8 | | 5,3 | 3,9 | 2,4 | 1,8 | | 5,3 | 3,9 | 2,4 | 1,8 |
| L.S.D. (0,05)* | | 5,7 | 4,7 | 3,1 | 2,5 | | 5,7 | 4,7 | 3,1 | 2,5 | | 5,7 | 4,7 | 3,1 | 2,5 | | 5,7 | 4,7 | 3,1 | 2,5 |
| L.S.D. (0,01)** | | 7,7 | 6,4 | 4,3 | 3,4 | | 7,7 | 6,4 | 4,3 | 3,4 | | 7,7 | 6,4 | 4,3 | 3,4 | | 7,7 | 6,4 | 4,3 | 3,4 |

Results at Harvest.

| Varieties Treatments | Cane t/ha | | | | Ers % cane | | | | Ers tons/ha | | | |
|-------------------------|-----------|-------|-----|-----|--------------|-------|------|--------------|-------------|-------|---------------|--------------|
| | NCo 376 | J59/3 | N11 | N12 | NCo 376 | J59/3 | N11 | N12 | NCo 376 | J59/3 | N11 | N12 |
| Control | 129 | 99 | 93 | 121 | 9,7 | 11,6 | 10,7 | 9,6 | 12,5 | 11,4 | 9,9 | 11,7 |
| Polado 0,5 kg | 121 | 100 | 104 | 118 | <u>10,8*</u> | 11,8 | 11,1 | 9,8 | 13,1 | 11,5 | <u>11,5*</u> | 11,6 |
| Polado 0,4 kg | 126 | 104 | 103 | 123 | 9,8 | 11,9 | 11,0 | 10,0 | 12,2 | 12,3 | <u>11,4*</u> | 12,3 |
| Ethrel 1,5 l | 127 | 103 | 107 | 124 | <u>10,8*</u> | 11,4 | 11,3 | <u>10,6*</u> | 13,7 | 11,8 | <u>12,2**</u> | <u>13,1*</u> |
| MEAN | 126 | 102 | 102 | 122 | 10,3 | 11,7 | 11,0 | 10,0 | 12,9 | 11,8 | 11,3 | 12,2 |
| C.V.% | | 8,2 | | | | 5,7 | | | | 7,0 | | |
| L.S.D. (0,05)* | | 15,5 | | | | 1,0 | | | | 1,4 | | |
| L.S.D. (0,01)** | | 21,1 | | | | 1,4 | | | | 1,9 | | |

11
10
12

Comments:1. General

Due to water restrictions during January and February the trial was stressed just prior to spraying and responses to ripeners were predictably small and variable.

J59/3 and N11 started to lodge 2 to 5 weeks after spraying and lodging was moderate to severe at harvest. The effect that lodging, after spraying, may have on the response to ripeners is not known.

The interaction between varieties and ripeners was not significant.

2. Responses to ripeners.2.1 Polado at 500 g product/ha

Despite significant improvements in cane quality of NCo 376 in response to Polado, the only appreciable gain in mass of recoverable sugars was at 2 weeks after spraying. The response of N11 was highly significant ($P=0,01$) 5 weeks after spraying but was of short duration.

Populations were higher (ns) in sprayed plots of N11 and consequently cane yields were higher than in the control plots; this and the small (ns) increase in cane quality resulted in an apparent response in terms of sucrose yields for all treatments.

2.2 Polado at 400g product/ha

There were no statistically significant increases in mass ers at this rate of Polado.

2.3 Ethrel at 1,5 l product/ha

Responses of NCo 376 and J59/3 to Ethrel were similar to the standard rate of Polado but were substantially better in N11 and N12.

3. Flowering

The emergence of flowers that may have been initiated was delayed at Pongola and no assessment of the effects these ripeners may have on inhibiting flower initiation was possible.

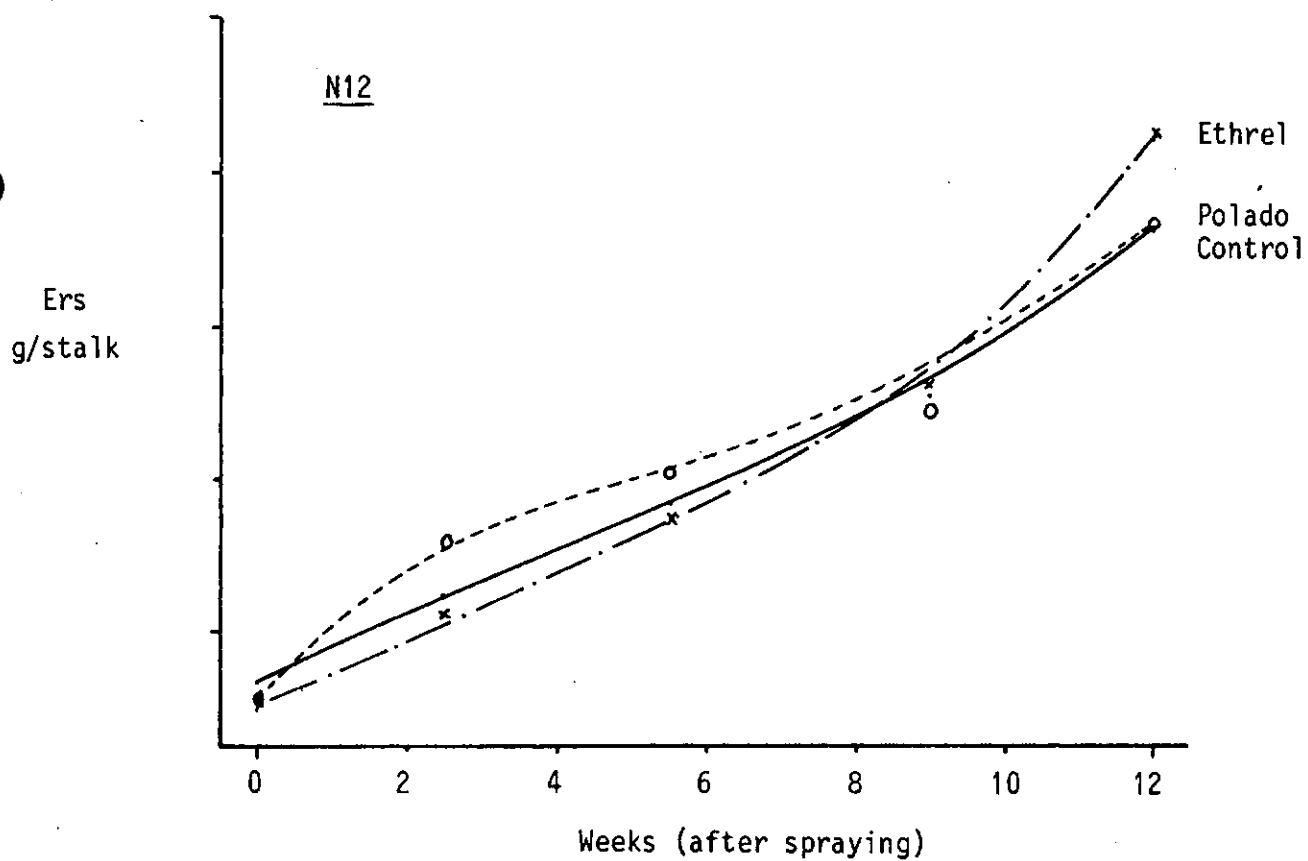
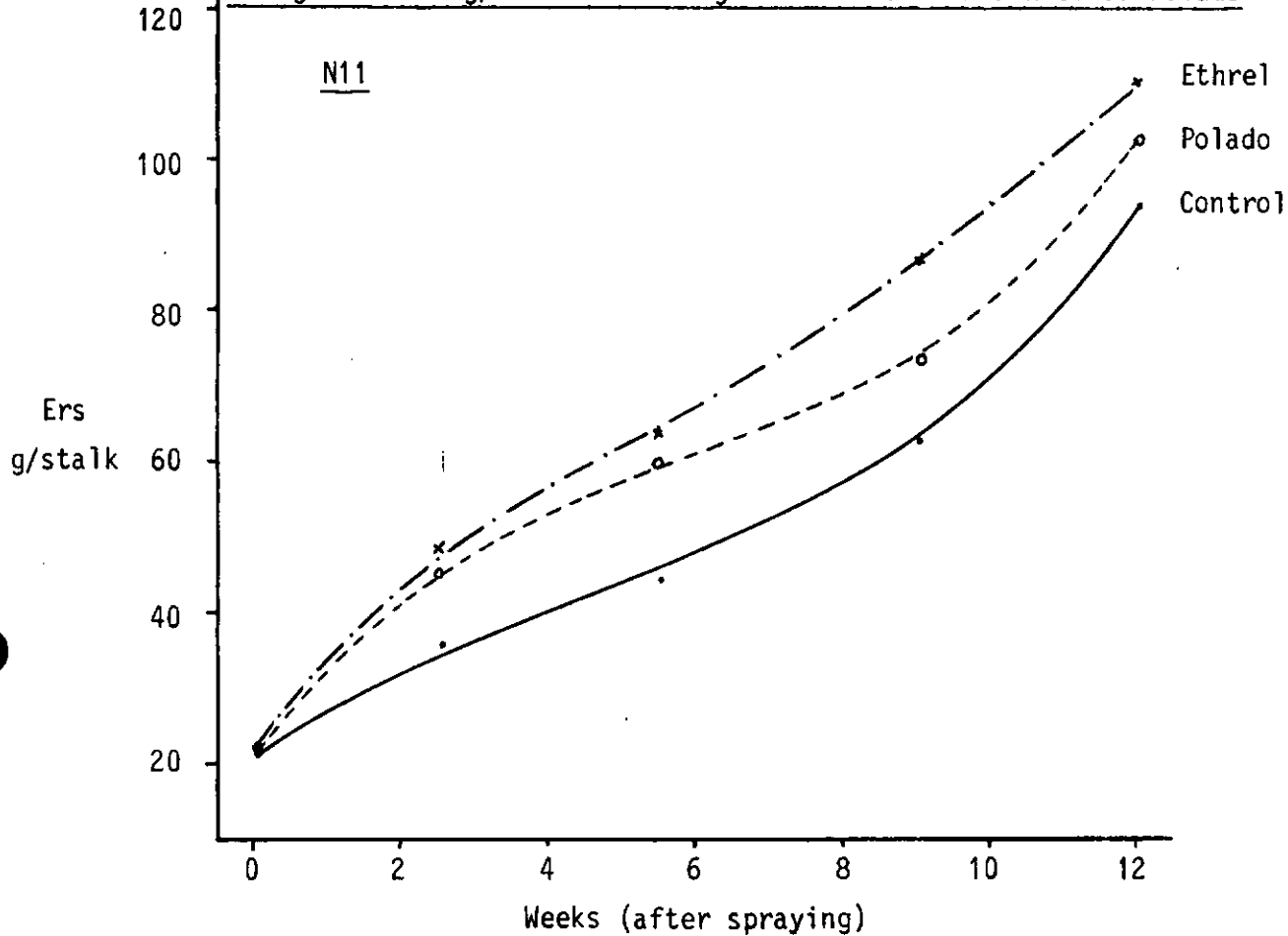
Note :

The small and variable results confirm the recommendation that cane suffering from stress should not be sprayed with ripeners.

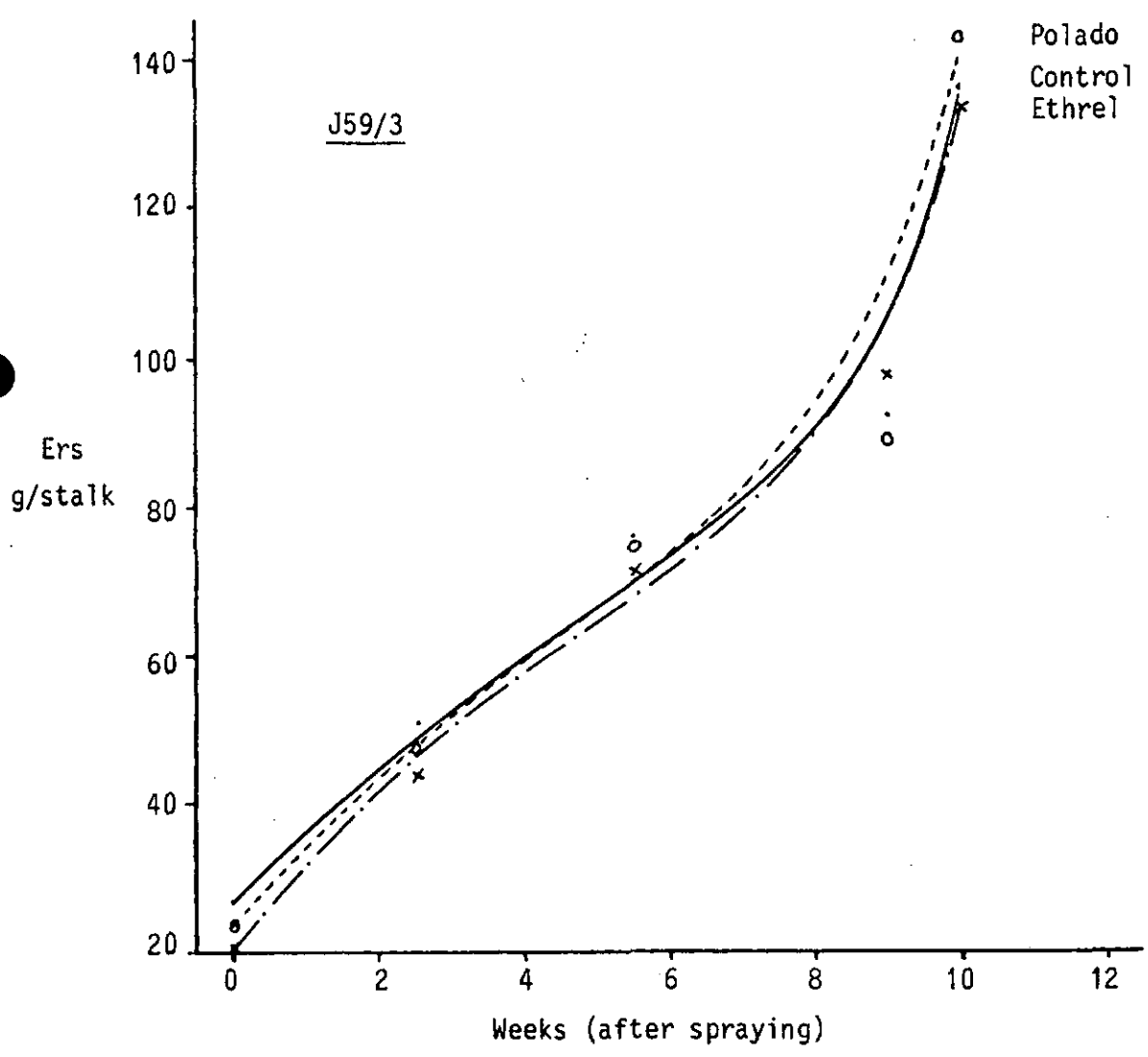
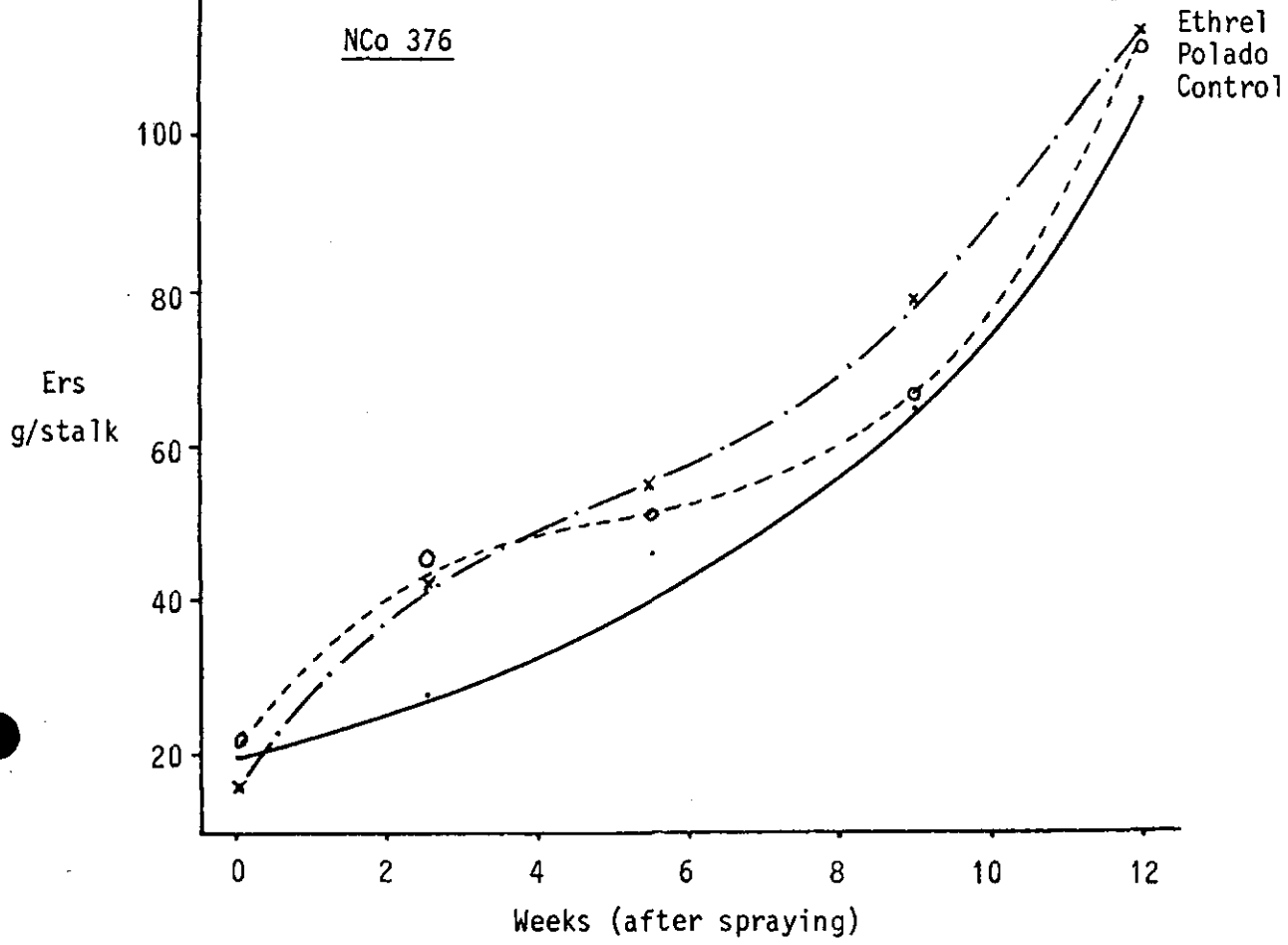
RAD/IS

6th August, 1982.

Changes in ers g/stalk following treatments with Ethrel or Polado



Changes in ers g/stalk following treatment with Ethrel or Polado



SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code: A Flower 1/81 R1

Cat. No.: 1248

Title: Flower control and ripening x four varieties

1. Particulars of the crop

| | | |
|---------------------------------|--------------------------------------|--|
| <u>This crop</u> | : First ratoon | <u>Spray method:</u> CO ₂ operated overhead boom, using two TK1 nozzles. |
| <u>Site</u> | : Pongola Field Stn Block 314 | <u>Pressure:</u> 200 kPa |
| <u>Region</u> | : Northern irrigated area | <u>Volume:</u> 70 ℓ |
| <u>Soil system</u> | : Komatipoort | <u>Weather at spraying:</u> |
| <u>Soil form/series</u> | : Hutton/Makatini | Slight breeze. Temperature 32°C |
| <u>Design</u> | : Randomised block 3 replications | <u>Condition of cane at spraying:</u> |
| <u>Plot size</u> | : 13,5 m x 4 rows x 1,4 m spacing | 9-12 green leaves |
| <u>Variety</u> | : NCo 376, J59/3, N11 and N12 | 10-12 internodes below breaking point. Some plots lodged (J59/3) |
| <u>Date and age at spraying</u> | : 26/02/81 9,1 months | Average Juice Purity: 45% |
| <u>Date and age at harvest</u> | : 27/05/81 12,1 months | <u>Sampling technique:</u> 4 stalks taken at random from each of four points (2 m apart) in net rows of each plot. |
| <u>Sampling</u> | : 0,49 & 12 weeks after spraying | Starting point advanced with each sampling. At harvest 16 stalks randomly selected from stacks in each plot. |
| <u>Irrigation</u> | : 840 mm | |
| <u>Rainfall</u> | : 572 mm | |
| <u>Total</u> | : 1 412 mm | |

2. Objectives

To determine the effect of Polado and Ethrel on flower emergence and sucrose yield when sprayed in early March.

3. Treatments

1. Control
2. Polado at 600 g product/ha - 450 g ai/ha
3. Polado at 330 g product/ha - 248 g ai/ha
4. Ethrel at 1,5 ℓ product/ha - 750 g ai/ha

4.1 Results from samples taken

Stalk mass (g/stalk) changes as a % of 0 week. Actual mass at 0 weeks in brackets.

| Varieties Dates & wks after spray Treatments | NCo 376 | | | | J59/3 | | | | N11 | | | | N12 | | | |
|--|----------------|------------|------------|-------------|--------------|------------|-------------|-------------|--------------|------------|-------------|-------------|--------------|------------|-------------|-------------|
| | 26/2 | 3/4 | 6/5 | 27/5 | 26/2 | 3/4 | 6/5 | 27/5 | 26/2 | 3/4 | 6/5 | 27/5 | 26/2 | 3/4 | 6/5 | 27/5 |
| | 0 | 4 | 9 | 12 | 0 | 4 | 9 | 12 | 0 | 4 | 9 | 12 | 0 | 4 | 9 | 12 |
| Control | (738) 100 | 127 | 134 | 151 | (831) 100 | 138 | 136 | 138 | (750) 100 | 123 | 144 | 134 | (594) 100 | 122 | 137 | 162 |
| Polado 0,45 kg | (781) 100 | 131 | 116 | 143 | (873) 100 | 126 | 137 | 137 | (606) 100 | 145 | 163 | 168 | (533) 100 | 155 | 150 | 155 |
| Polado 0,25 kg | (781) 100 | 127 | 137 | 133 | (815) 100 | 124 | 144 | 146 | (731) 100 | 127 | 157 | 146 | (751) 100 | 125 | 155 | 170 |
| Ethrel 1,5 l | (758) 100 | 135 | 126 | 138 | (925) 100 | 120 | 132 | 140 | (704) 100 | 141 | 153 | 152 | (615) 100 | 122 | 152 | 145 |
| Mean | (765) | 130 | 128 | 141 | (861) | 127 | 137 | 140 | (698) | 134 | 154 | 150 | (578) | 131 | 149 | 158 |
| CV % | 8,6 | 7,4 | 8,7 | 9,2 | 8,6 | 7,4 | 8,7 | 9,2 | 8,6 | 7,4 | 8,7 | 9,2 | 8,6 | 7,4 | 8,7 | 9,2 |
| LSD(P=0,01) | 118,4 | 157 | 176 | 177 | 118 | 157 | 176 | 177 | 118 | 157 | 176 | 177 | 118 | 157 | 176 | 177 |
| | Juice purity % | | | | | | | | | | | | | | | |
| Control | 42 | 59 | 72 | 76 | 42 | 62 | 75 | 84 | 53 | 70 | 79 | 81 | 42 | 63 | 71 | 78 |
| Polado 0,45 kg | 41 | 65 | 78 | 84 | 44 | 69 | 80 | 85 | 50 | 76 | 85 | 88 | 43 | 72 | 80 | 85 |
| Polado 0,25 kg | 40 | 63 | 77 | 79 | 44 | 67 | 77 | 83 | 60 | 74 | 82 | 85 | 38 | 67 | 79 | 81 |
| Ethrel 1,5 l | 38 | 66 | 72 | 80 | 49 | 67 | 76 | 81 | 54 | 72 | 80 | 85 | 41 | 64 | 77 | 81 |
| Mean | 40 | 63 | 74 | 80 | 44 | 66 | 77 | 83 | 46 | 73 | 82 | 85 | 41 | 67 | 77 | 81 |
| | Ers % cane | | | | | | | | | | | | | | | |
| Control | 0,8 | 3,6 | 6,9 | 7,7 | 1,2 | 5,1 | 9,5 | 10,6 | 2,6 | 6,4 | 9,8 | 10,0 | 0,8 | 5,1 | 7,3 | 9,0 |
| Polado 0,45 kg | 0,6 | <u>5,6</u> | <u>9,4</u> | <u>11,0</u> | 1,1 | <u>6,9</u> | <u>11,5</u> | <u>12,0</u> | <u>1,9</u> | <u>8,7</u> | <u>11,7</u> | <u>12,9</u> | 0,9 | <u>7,7</u> | <u>10,2</u> | <u>11,8</u> |
| Polado 0,25 kg | 0,5 | <u>4,6</u> | <u>8,8</u> | <u>8,8</u> | 1,2 | <u>6,5</u> | <u>10,2</u> | <u>11,1</u> | 2,5 | <u>7,7</u> | <u>10,7</u> | <u>11,4</u> | <u>0,3</u> | <u>6,5</u> | <u>9,5</u> | <u>10,0</u> |
| Ethrel 1,5 l | <u>0,2</u> | <u>5,6</u> | <u>7,3</u> | <u>9,1</u> | <u>2,1</u> | <u>6,4</u> | <u>9,7</u> | <u>10,5</u> | 2,6 | <u>7,4</u> | <u>10,3</u> | <u>11,8</u> | 0,6 | 5,6 | <u>9,3</u> | <u>10,4</u> |
| Mean | 0,5 | 4,9 | 8,1 | 9,2 | 1,1 | 6,3 | 10,2 | 11,1 | 1,1 | 7,6 | 10,6 | 11,5 | 1,1 | 6,2 | 9,1 | 10,3 |
| CV % | 31,7 | 10 | 12,1 | 5,6 | 31,7 | 10 | 12,1 | 5,6 | 31,7 | 10 | 12,1 | 5,6 | 31,7 | 10 | 12,1 | 5,6 |
| LSD(P=0,01) | 0,45 | 0,71 | 1,3 | 0,67 | 0,45 | 0,71 | 1,3 | 0,67 | 0,45 | 0,71 | 1,3 | 0,67 | 0,45 | 0,71 | 1,3 | 0,67 |

4.2 Results at harvest (12 weeks after spraying)

| Varieties Treatments | Cane t/ha | | | | Ers % cane | | | | Ers t/ha | | | |
|-------------------------|-------------|--------------|-------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | NCo 376 | J59/3 | N11 | N12 | NCo 376 | J59/3 | N11 | N12 | NCo 376 | J59/3 | N11 | N12 |
| Control | 140 | 114 | 119 | 143 | 7,7 | 10,6 | 10,0 | 9,0 | 10,9 | 12,0 | 11,5 | 12,9 |
| Polado 0,45 kg | 135 | 114 | 110** | 124** | <u>11,0**</u> | <u>12,0**</u> | <u>12,9**</u> | <u>11,8**</u> | <u>15,0**</u> | <u>13,7**</u> | <u>14,2**</u> | <u>14,6**</u> |
| Polado 0,25 kg | 143 | <u>103**</u> | 117 | 138 | <u>8,8**</u> | 11,1 | <u>11,4**</u> | <u>10,0**</u> | <u>12,7**</u> | 11,4 | <u>13,4**</u> | <u>13,8**</u> |
| Ethrel 1,5 l | <u>133*</u> | 116 | <u>111*</u> | <u>135*</u> | <u>9,1**</u> | 10,5 | <u>11,8**</u> | <u>10,4**</u> | 12,1 | 12,1 | <u>13,1**</u> | <u>13,9*</u> |
| Mean | 138 | 112 | 114 | 135 | 9,2 | 11,1 | 11,5 | 10,3 | 12,7 | 12,3 | 13,1 | 13,8 |
| C.V.% | 6,1 | | | | 5,6 | | | | 7,9 | | | |
| LSD(P=0,05)* | 6,4 | | | | 0,49 | | | | 0,86 | | | |
| LSD(P=0,01)** | 8,7 | | | | 0,67 | | | | 1,17 | | | |

4.3 Mean % response, in t ers/ha to applying standard rate of Polado and Ethrel at 12 weeks.

| Treatments \ Varieties | NCo 376 | J59/3 | N11 | N12 |
|------------------------|---------|-------|-----|-----|
| Polado | 38% | 14% | 23% | 13% |
| Ethrel | 11% | 1% | 14% | 8% |

COMMENTS

1. Flower inhibition

- * Because of the unsuitable conditions for flower initiation at Pongola this season, no assessments of the effects these chemicals may have on inhibiting flower initiation were possible.

2. Ripening

2.1 Polado at 0,60 kg product/ha

- * Cane quality and sucrose yields of the four varieties were substantially improved ($P=0,01$) at 12 weeks after spraying.
- * The reduction in cane yield of N12 was due to the relatively large reduction of individual stalk mass caused by retarded growth between 4 and 12 weeks after spraying.

2.2 Polado at 0,33 kg product/ha

- * Even though responses to Polado at this low rate are statistically significant, they do not reach the levels of those resulting from the higher rate of Polado but are similar to the responses to Ethrel (1,5 l product/ha).

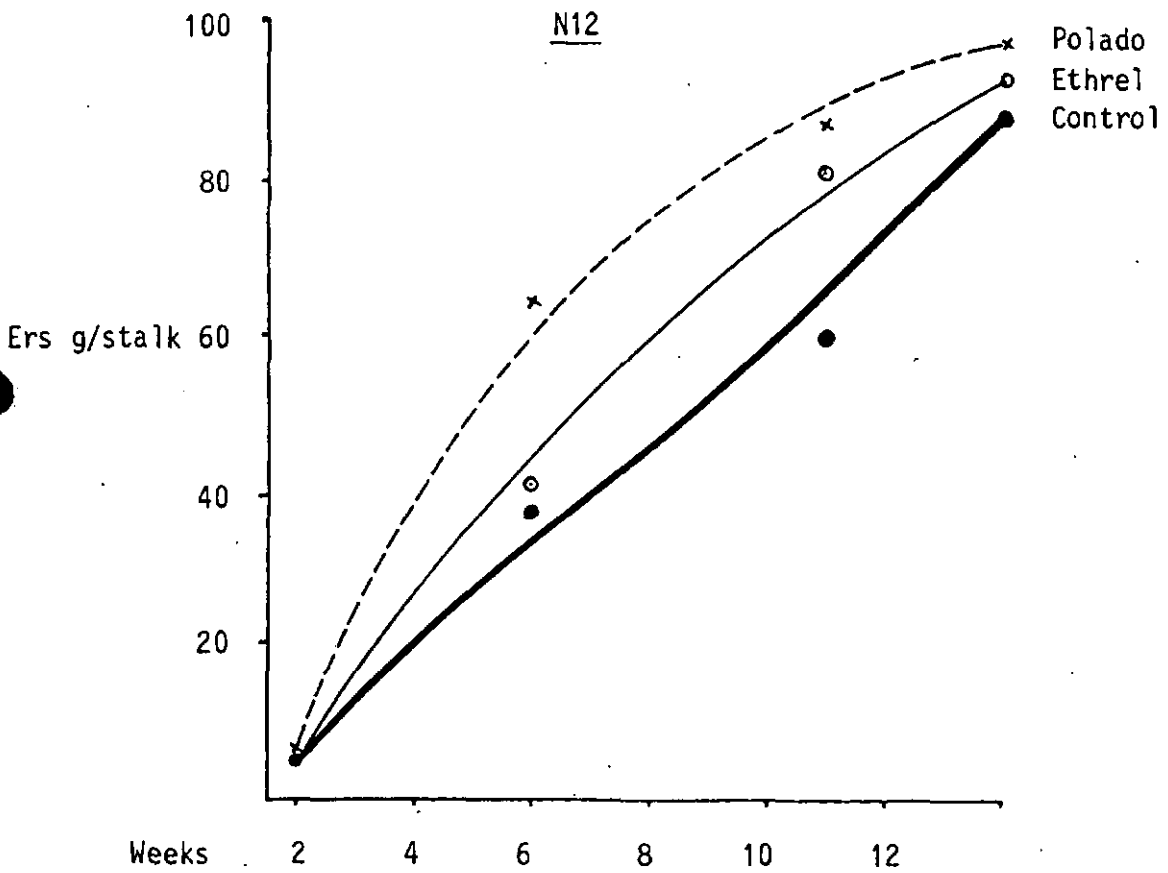
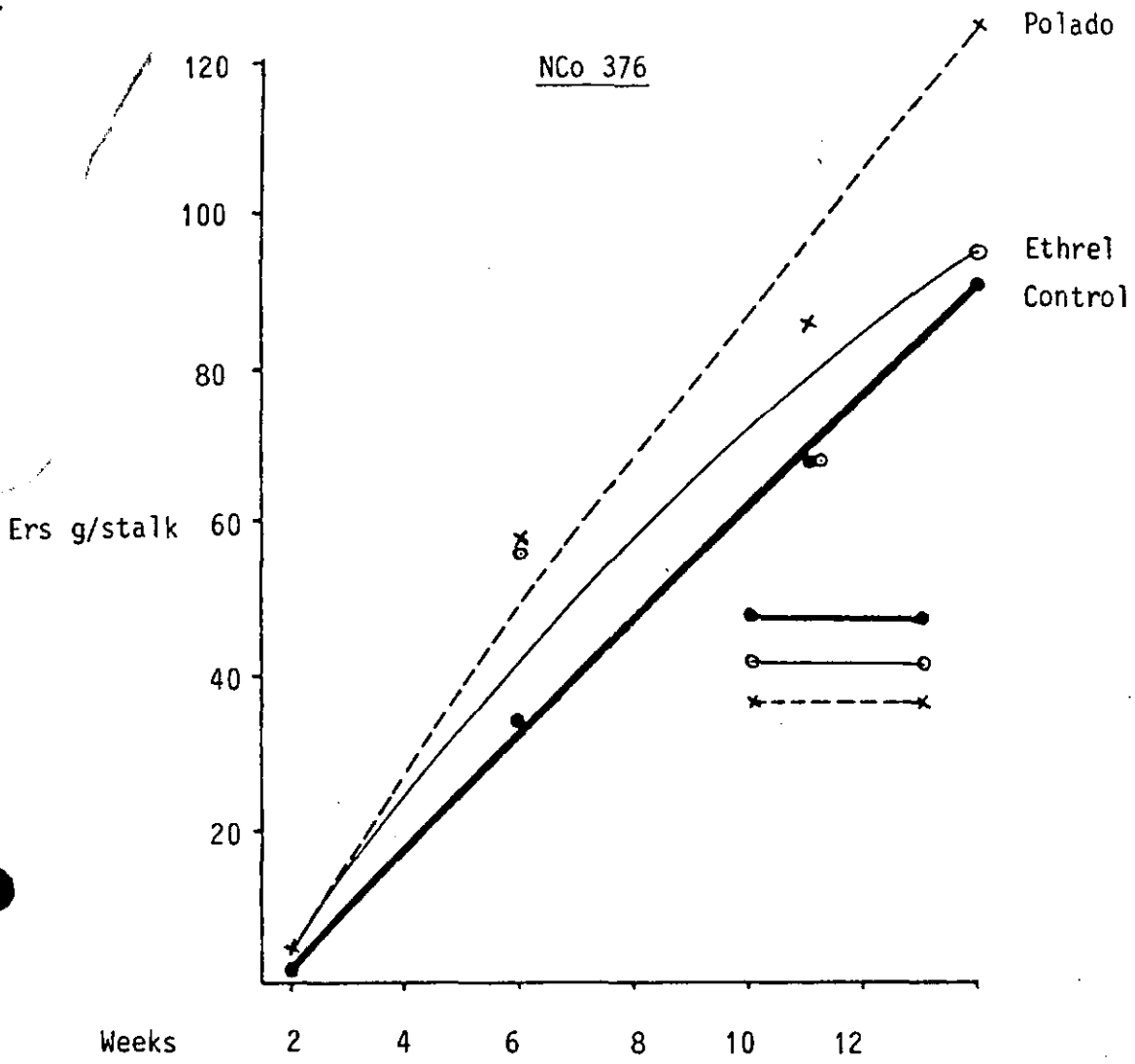
2.3 Ethrel at 1,5 l product/ha

- * The response to Ethrel was comparatively small on this very immature cane.

3. Varieties

- * The four varieties all responded to both Ethrel and Polado within 4 weeks after spraying.
- * Optimum responses appear to be at about 9 weeks in J59/3 and N12 and at about 12 weeks in NCo 376 and N11.

Changes in ers g/stalk following treatment with either Polado or Ethrel



Changes in ers g/stalk following treatment with either Polado or Ethrel

