

SUMMARY

1982 proved to be an excellent year for sugar beet. Good growing conditions in early summer allowed root and sugar yields to reach record levels. The maximum root yield of 70 t/ha was achieved on 8th November. At this date sugar yield reached a peak of 12.1 t/ha.

The yield of fresh tops was at similar levels to previous years. The yield decreased steadily during the season, starting at 42.1 t/ha and declining to 30.1 t/ha.

OBJECT

To monitor the progress of the beet crop through the beet harvest campaign period.

TREATMENTS

Fortnightly samples of washed roots, fresh tops and sugar percentage were taken, beginning on 13th September and ending on 20th December.

METHOD

The crop of Arigomono was drilled on 29 March with a row spacing of 50 cm and seed spacing of 19 cm. Four 20 m² plots were hand harvested at fortnightly intervals, with sub-samples of b'rei and tops being taken. The b'rei was analysed to determine percentage dry matter, whilst the tops were given full nutritional analysis to determine the feed value.

RESULTS

The plant population was lower than normal ranging from 64,000/ha to 74,600/ha at different lifts, the mean figure being 68,000/ha. The dry cold April was the main factor causing this.

The warm wet conditions of late May and early June provided excellent growing conditions for the young plants. The crop made rapid progress during this time and by the end of June was larger and more 'forward' than normal. The growth of the crop was not restricted to any significant degree by the dry July, since the soil moisture deficit was relatively small.

* NOT FOR PUBLICATION WITHOUT THE DIRECTOR'S CONSENT. This report deals primarily with only one year's work, so any conclusions given are only provisional.

The root yield increased through the season from 53.9 t/ha on 13 September, to a peak of 70.3 t/ha on 8 November. Sugar yield also reached a peak at this date, a figure of 12.1 t/ha being achieved. These yields are the highest ever in this series of trials. After 8 November, a decline in root and sugar yields occurred. The main reason for this was that the lifts of 22 November and 6 December had low population plots in the samples. The final lift on 20 December produced a root yield of 69.1 t/ha, and a sugar yield of 11.7 t/ha, this was well above the level of the previous two lifts, and was an excellent result for such a late stage of the season.

Percentage sugar content was consistent throughout most of the season. The maximum value was 17.7%, which was achieved on two dates: 27 September and 11 October. The level declined to a very respectable 17.0% at the end of the season.

During the period up to 8 November the mean increase in sugar yield was 60 Kg/ha/day. This compares with a value of 51 Kg/ha/day in 1981 and 56 Kg/ha/day in 1980.

CONCLUSIONS

The record yield of 1982 can be attributed largely to the warm wet conditions of May and June. During these two months the crop grew rapidly. In the late summer and autumn conditions were suitable for growth, so that the plants could keep up the momentum gained earlier on and produce heavier yields. Freedom from virus yellows helped in this.

YIELD DATA - PERIODIC HARVEST 1982

Harvest Date	Root Yield (t/ha)	Sugar Content %	Sugar Yield (t/ha)	Yield of Fresh tops (t/ha)
	(±2.87) 7 d.f.	(±0.10) 7 d.f.	(±0.51) 7 d.f.	(±2.59) 7 d.f.
13 September	53.9	16.4	8.8	42.1
27 September	61.7	17.7	10.9	41.6
11 October	64.3	17.7	11.4	41.0
26 October	67.9	17.6	11.9	39.1
8 November	70.3	17.2	12.1	36.9
22 November	* 63.3	17.2	10.9	32.8
6 December	* 63.4	17.2	10.9	33.6
20 December	69.1	17.0	11.7	30.1
Standard Error %	8.9%	1.2%	9.1%	13.9%

* = Low Population Plots.

1982 WEATHER - 12 YEAR MEAN IN BRACKETS

MONTH	RAINFALL (mm)	SUNSHINE (Hrs)	MEAN TEMP. (°C)
JANUARY	31.8 (57.3)	78.3 (45.2)	2.7 (3.3)
FEBRUARY	14.8 (47.4)	65.4 (65.1)	4.3 (3.3)
MARCH	42.9 (42.8)	166.8 (104.7)	5.9 (5.0)
APRIL	8.6 (39.3)	176.7 (149.4)	7.9 (7.2)
MAY	65.5 (44.7)	237.2 (202.4)	11.5 (11.1)
JUNE	81.1 (45.5)	150.6 (212.1)	15.0 (13.9)
JULY	28.9 (48.7)	193.1 (192.0)	16.3 (15.8)
AUGUST	54.0 (59.2)	186.2 (181.8)	16.3 (16.1)
SEPTEMBER	47.5 (42.5)	164.1 (154.1)	14.7 (13.8)
OCTOBER	126.4 (43.4)	73.4 (107.5)	10.1 (10.5)
NOVEMBER	73.3 (71.4)	70.8 (71.8)	8.0 (6.2)
DECEMBER	53.5 (54.8)	57.6 (47.2)	3.8 (4.5)
TOTAL	633.3 (588.0)	1620.2 (1533.3)	

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