

SUGAR BEET - TIME OF HARVESTING 1981

NAS 512 ML
6th year

SUMMARY

Sample areas were hand harvested throughout the beet lifting campaign. Root yield increased to a maximum on 4 January. Sugar yield reached a maximum on 3 December. Sugar content fell in late September and returned to the previous levels by late October. Yield of tops declined slowly after 8 October.

OBJECT

To monitor the development of the beet crop throughout the beet harvest campaign period.

TREATMENTS

Fortnightly samples of washed roots, fresh tops and root sugar content beginning on 10 September and ending on 4 January.

METHOD

Four samples of 20m² were hand harvested at fortnightly intervals from a uniform crop of Nomo over the period 10 September to 4 January. The last lift should have taken place on 17 December, but, owing to a deep covering of snow and freezing conditions, this lift had to be delayed until 4 January. Sub-samples were taken of fresh tops and brief for dry matter determinations and on several of the harvests a full nutritional analysis of the tops was made. Tops were not harvested at the last lift because of their poor condition caused by prolonged exposure to frost and snow.

RESULTS

The crop was drilled in early April in dry conditions, but the month as a whole was very wet with normal temperatures. May was wetter and much duller than average but with normal temperatures. June and July continued the dull conditions which were accompanied by cool temperatures and above normal rainfall in July. A dry sunny August was followed by a warm, sunny September with above average rainfall. The sunny weather with above normal rainfall continued into October, but temperatures were below normal. A mild dull and dryer than normal November gave way to the coldest December for many years with extensive snow and severe frosts.

Emergence of beet seedlings was poorer than in 1980 and an overall level of 66,000/ha was achieved. Populations at the different lifts varied from 63,000 to 71,300.

Root yield increased rapidly to early October and then increased only slowly throughout the season, with just a minor fall in early November. In spite of the extreme winter conditions the final lift on the 4th January was the highest at just over 60 t/ha.

Root sugar content fell briefly in late September following heavy rain after a dry spell, but then continued on an upward trend until late October. The very satisfactory sugar levels took an unexpected upward step in early December but fell at the last harvest.

Sugar yield rose steeply until early October and then maintained a steady increase until early December (11.06 t/ha) but fell back at the final harvest.

The mean sugar yield increase was 70 kg/ha/day in mid September but rose to 109 kg/ha/day in late September/early October. The yield increase was then maintained at about 50 kg/ha/day to early December, with a slight (but non-significant) loss (-26 kg/ha/day) in early November. The accumulated yield increase up to the time the maximum was achieved (10 September-3 December) was 51 kg/ha/day. This was not as good as in 1980 (56 kg/ha/day from 11 September-20 November) but was better than 1979 (42 kg/ha/day, when maximum yield was attained on the last harvest date of 17th December). Subsequently in 1981, sugar yield fell by 24 kg/ha/day during December and early January when the crop experienced the worst winter weather for many years.

Yield of tops began the season at the modest level of 40.8 t/ha. The maximum top yield occurred on the 8 October and then declined only slowly, being still above 33 t/ha in early December.

HARVEST DATE	1981			
	Root yield tonne/ha	Sugar content %	Sugar yield tonne/ha	Weight of tops tonne/ha
	(±1.15)	(±0.187)	(±0.221)	(±1.49)
10 September	39.3	17.35	6.80	40.9
24 September	49.2	15.80	7.78	39.8
8 October	57.1	16.29	9.30	41.4
22 October	56.7	17.59	9.96	38.5
5 November	54.3	17.68	9.59	33.6
19 November	59.3	17.41	10.32	31.5
3 December	59.8	18.50	11.06	33.2
4 January	60.4	17.05	10.30	-
Standard error %	4.2%	2.2%	4.7%	8.0%

	1981		
	Rainfall (mm)	Sunshine (hrs)	Mean temp (°C)
January	61.0	55.9	3.9
February	25.0	62.6	2.6
March	95.8	49.8	7.7
April	94.6	132.5	7.3
May	51.2	160.5	11.4
June	34.0	162.1	13.4
July	73.5	179.1	15.3
August	11.5	206.7	15.9
September	65.6	178.7	14.8
October	83.2	143.2	8.5
November	40.5	54.5	7.1
December	64.9	53.2	-0.7
Total	700.8	1438.8	

J.G.H. & W.E.B.