

FIELD EXPERIMENTS 1966

CNS/0555  
Serial No. A.6  
Stat. File 9 IV  
Field 18 Acres

CROP: Sugar Beet

EXPERIMENT: Demonstration Plots on Spring mechanisation and resulting mechanical harvesting losses.

TREATMENTS AND LAYOUT: Systematic

- (a) 1½ inch spacing hand singled
- (b) 1½ inch spacing, thinned once, hand singled
- (c) 3 inch spacing, hand singled
- (d) 1½ inch spacing, twice thinned
- (e) 3 inch spacing, once thinned
- (h) 6 inch spacing, no hand work

Plot Size: Treatment: 32 rows across field

Harvest: Hand 6 samples of 5 yards x 2 adjacent rows at 20 inches  
Machine losses 5 single rows of 20 yards per treatment

Manuring with dates of : 30 cwt ground limestone per acre  
5 cwt Kainit ploughed in  
6 cwt 20 :10:10 compound per acre on seedbed

Date of: Variety: Bush Johnson Monoplex rubbed  
and graded 8½-10/64th and  
Drilling: 28th and 29th April pelleted (Germain) to 9-12/64th  
100" Counts: 31st May  
Mechanical thinning respective plots: 3rd and 6th June  
Second thinning of appropriate plots: 8th June  
Hand Harvesting: 7th December  
Mechanical Harvesting: 20th December

Remark: All plots needed weeding and this was carried out on 8th July in spite of all plots being band sprayed with Pyramin at 2.8 lb per acre (2.24 lb a.i.)

Demonstration Plots

Summary of Counts and Harvesting Losses

Treatment	Spring Work Assessments				Hand Yield of clean beet tons/acre	Machine Losses (tons/acre)				
	Plants /100"	Plant Population at 2-4 leaf	Final Plant Population	man hrs. /acre as % of (a)		Surface	Below Surface	Overt- opping	Total	% of roots under- topped
a. 1½" Hand Singled	36.0	113,000	35,200	100	17.3	0.12	0.71	0.34	1.17	5.0
b. 3" Hand Singled	19.8	62,100	32,700	79	18.0	0.22	0.11	0.19	0.52	3.5
c. 1½" Once thinned, hand singled	36.0	113,000	31,100	hand 75 <sup>83</sup> machines	17.7	0.30	2.58	0.14	3.02	1.2
d. 1½" Twice thinned	38.4	120,400	36,000	16	14.4	0.38	0.67	0.09	1.14	10.1
e. 3" Once thinned	19.8	62,100	27,900	8	14.5	0.35	0.57	0.48	1.40	7.6
h. 6" No handwork.	9.6	30,100	30,600	-	16.7	0.83	1.19	0.27	2.29	4.3

The forward speed of harvester varied from 2¼ m.p.h. up to 3¼ m.p.h.

Demonstration Plots

December 21st 1966

Root counts of beet topped by harvester

Plant Stations

	Population	% Singles
6" No work	31,500	93
3" Machine thinned	24,800	62
1½" Machine thinned twice	27,000	40
1½" Machine thinned + Hand work	31,400	91
3" Hand Singled	31,900	98
1½" Hand Singled	36,700	96