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UNIVERSITY OF DURHAM

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NEWCASTLE UPON TYNE



INTERIM REPORT ON COSTS OF GROWING POTATOES, 1947,
ON DURHAM AND NORTHUMBERLAND FARMS.

(Covering Operations to the Pre-Lifting Stage)

By

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The Farm Economics Branch gratefully acknowledges the ready and willing co-operation received from the farmers who are participating in this inquiry.

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I.

The information summarised in this report was obtained from 50 lots of potatoes grown on 37 farms in Durham and South Northumberland, and comprising in all 594 acres.

Potatoes have long been an important crop throughout the areas in which the farms are situated. In Durham as a whole, even though the county contains considerable areas of hill land in the west, the tillage area in 1947 amounted to 42% of the total area of crops and grass, excluding rough grazings, and potatoes occupied just over 15% of the tillage area.

For Northumberland as a whole the proportions are less striking for the simple reason that a much larger part of the county consists of hill land, and much of the remainder is outside the range of potato growing, which is concentrated largely in the coalfield area in the south east, where conditions resemble those in lowland Durham.

The 37 farms from which the sample was obtained are mostly large, 25 being between 200 and 500 acres. The average proportion of the farm area under tillage throughout the sample was no less than 51%.

If the outputs from the farms were listed in order of sales value, potatoes occupied first, second or third place on 25 of the farms. In general the farms were well equipped mechanically for potato growing. 27 had tractor row-crop equipment and two or more tractors. In addition 5 farms had power-driven potato diggers and 2 farms had mechanical planters.

Individually the lots varied from 1 to 70 acres. The average per lot was 12 acres and the general distribution of the sample by size was as follows:-

TABLE 1. SIZE DISTRIBUTION OF LOTS COSTED.

Acreage Group	Under 5 Acres	5-10 Acres	10-15 Acres	15-20 Acres	20-25 Acres	Over 25 Acres
No. of Lots	11	14	11	12	1	1

With the exception of the largest 'lot' all lots represented single fields.

II.

The substance of the report is a summary and analysis of operational costs up to but excluding the lifting of the crop. The basis of the various charges is set out below.

Horse Labour - 1/- per hour.

Tractor Labour,

excluding drivers - 2/6d. per hour for tractors of 13-20 B.H.P.
2/9d. " " " " " 21-30 B.H.P.
3/-d. " " " " " 31-42 B.H.P.
4/-d. " " " track layers.

Manual Labour - Actual wages including perquisites at statutory values.

Farmyard Manure - 10/- per ton for manure produced on the farm, exclusive of leading and spreading. Residual value allowed.

Artificial Manures - Charged at actual cost, allowing for residual values.

Home-Grown Seed - Charged at estimated market value.

Overhead charges, such as depreciation on implements and share of farm general expenses have been disregarded at this stage. They will be dealt with in a final report to be issued after the crops have been harvested.

III.

Details of costs are given in the following series of tables.

- II. Overall average cost per acre (itemized)
- III. Range in Individual Costs per Acre (for separate lots)
- IV. Comparison of Cost per Acre on Six Low Cost and Six High Cost Farms.
- V. Average Costs per Acre for Lots arranged in Size Groups.
- VI. Average Operational Costs (Total Costs less Rent, Seeds and Manures) for various size groups of Lots.
- VII. Comparison of 1947 and 1942 Costs.

IV.

The main features of the interim results are:-

1. The overall average cost per acre conceals a wide range between individual samples.
2. The main reasons for differences between individual samples are the costs of seed and manures. These differences again are partly due to quantities used and partly to prices paid. The quantities of seed planted, for example, varied between 13 cwts. and 24½ cwts. per acre; the cost of bought seed, excluding one case where stock seed was used, ranged from £11. 4. 2. to £16. 0. 0. per ton; and the estimated values put upon home-grown seed, again excluding a special case of once grown stock seed, varied between £6. 0. 0. and £10. 9. 6. per ton.

Differences in the kinds of manures applied render useless any comparison in terms of crude quantities. As regards farmyard manure, estimates of quantities are inevitably subject to a margin of error and there are differences of quality difficult to assess. Moreover, heavy applications of dung also mean correspondingly heavy leading and spreading costs. It may be noted that of the 50 lots, seven were grown without direct applications of dung. Four of these are included in the low cost group for which average figures are given in Table IV.

3. While costs of seed and manures account for the major part of the differences in cost between low and high cost samples, the figures also suggest greater intensity of cultivations, and particularly hoeing, on the higher cost samples.

It is not to be assumed that the high cost samples will be the less profitable, or that the low cost samples will prove the more profitable. Data relating to yields has still to be related to the cost figures.

4. The comparison between 1947 and 1942 costs should be interpreted with some caution.

The respective samples of farms are not identical and the 1942 sample included a number of farms which, prior to the war, were not regularly growing potatoes. The main causes of the higher cost in 1947 were (a) the increased cost of labour and (b) increased cost of seed and artificial fertilisers.

Readers will doubtless remember the exceptional conditions under which the 1947 potato land was prepared and planted, as a result of the severe spring storms. It is interesting to note that, taking a general view, most farmers seem to have succeeded in getting through the normal sequence of operations, despite the great handicaps under which they worked and it is fairly certain that the labour costs include considerable overtime payments made necessary by the short time left by the storm for getting in the crops at all. This factor may also be a further reason for the higher cost in 1947 as compared with 1942.

TABLE 2. OVERALL AVERAGE COST PER ACRE

COST ITEMS	YOUR FARM						Average Cost per Acre over 594 acres		
	Field:								
	Cost For			Cost per Acre			£.	s.	d.
<u>Cultivations</u>	£.	s.	d.	£.	s.	d.	£.	s.	d.
Ploughing							1.	4.	7.
Discing, Cultivating, etc...								18.	5.
Drilling								6.	3.
Leading and spreading dung and artificials							2.	17.	2.
Planting							1.	3.	3.
Splitting								7.	9.
Hand hoeing							1.	0.	9.
Inter-Row Cultivations							1.	5.	2.
<u>Total Cultivations</u>							9.	3.	4.
<u>Dung and Artificials Applied</u> .							11.	14.	10.
<u>Seed</u>							11.	3.	0.
<u>Rent</u>							1.	11.	0.
<u>GROSS COST</u>							33.	12.	2.
<u>Add Manurial Residues B/F</u>								8.	3.
<u>Deduct Manurial Residues C/F</u> .							3.	19.	8.
<u>NETT COST</u>							30.	0.	9.

TABLE 3.

RANGE IN INDIVIDUAL COSTS PER ACRE FOR SEPARATE LOTS.
(Extremes £17. 10. 1. and £38. 19. 9.)

No. of Lots where cost per acre was:-								Total
Under £20	between £20-£23	between £23-£26	between £26-£29	between £29-£32	between £32-£35	between £35-£38	Over £38	
1	2	8	11	8	13	3	4	50

TABLE 4. COMPARISON OF COST PER ACRE ON SIX LOW COST and SIX HIGH COST FARMS.

Group	Low			High		
No. of Acres per Farm	11.2			10.6		
	£.	s.	d.	£.	s.	d.
Ploughing		18.	0.	1.	3.	5.
Discing, Cultivating, etc..		15.	11.		19.	7.
Drilling		5.	10.		7.	0.
Splitting		8.	5.		7.	8.
Inter-Row Cultivations	1.	3.	4.	1.	4.	6.
Hand hoeing		14.	2.	2.	15.	0.
Total Cultivations	4.	5.	8.	6.	17.	2.
Planting	1.	8.	3.	1.	4.	6.
Manures (Net Cost) *	5.	9.	6.	9.	12.	1.
Leading & Spreading Manures	1.	7.	5.	4.	9.	0.
Seed	8.	17.	10.	13.	14.	5.
Rent	1.	5.	6.	2.	2.	6.
Total Average Cost per Acre	22.	14.	2.	37.	19.	8.

* In the Low Cost group 4 lots received no direct applications of dung, 2 lots were not hand-hoed after planting. In the High Cost group one lot received no direct application of dung and was not hand hoed after planting.

TABLE 5.

AVERAGE COSTS PER ACRE FOR LOTS ARRANGED IN SIZE GROUPS

Acreage Group	Under 5 Acres	5-10 Acres	10-15 Acres	15-20 Acres	20-25 Acres	Over 25 Acres
No. of Lots	11	14	11	12	1	1
Average Cost per Acre	£.s.d. 30.2.2.	£. s.d. 30.19.7.	£. s.d. 28.13.8.	£. s. d. 30.10.10.	£. s.d. 31.15.0.	£.s.d. 23.6.1.

TABLE 6. AVERAGE OPERATIONAL COSTS (TOTAL COSTS LESS RENT, SEEDS & MANURES) FOR VARIOUS SIZE GROUPS OF LOTS

Acreage Group	Under 5 Acres	5-10 Acres	10-15 Acres	15-20 Acres	20-25 Acres	Over 25 Acres
No. of Lots	11	14	11	12	1	1
Average Cost per Acre	£. s.d. 8.11.7.	£. s.d. 9. 2.9.	£. s.d. 9. 2.5.	£. s.d. 9.19.9.	£.s.d. 10.6.9.	£.s.d. 5.9.9.

TABLE 7. COMPARISON OF 1947 and 1942 COSTS

	1947	1942
Total Acres Costed	594 acres	916 acres
Average Acres per lot	12 acres	13 acres
	£. s. d.	£. s. d.
1. <u>Cultivations.</u>		
Ploughing	1. 4. 7.	1. 4. 0.
Discing, Cultivating, etc.....	18. 5.	15. 0.
Drilling	6. 3.	6. 6.
Leading and Spreading Dung and Artificials	2. 17. 2.	1. 11. 0.
Planting	1. 3. 3.	16. 6.
Splitting	7. 9.	6. 6.
Hand Hoeing	1. 0. 9.	10. 0.
Inter-Row Cultivations	1. 5. 2.	1. 2. 0.
<u>Total Cultivations</u>	9. 3. 4.	6. 11. 6.
2. <u>Dung and Artificials</u>	8. 3. 5.	5. 1. 0.
3. <u>Seed</u>	11. 3. 0.	9. 3. 0.
4. <u>Rent</u>	1. 11. 0.	1. 10. 0.
TOTAL COST	30. 0. 9.	22. 5. 6.

