Potatoes - Cost of production

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE

POTATO COSTINGS, 1965 CROP

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178 Bothwell Street,
Glasgow, C.2.

Economics Department Report No. 111
1966

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INTRODUCTION

This report gives the results from the costings of thirty-two potato crops totalling 375 acres on twenty-seven farms in this College province. Fourteen of the farms were in Dumfriesshire, eleven in Renfrewshire and two in west Perthshire.

The costings have been grouped according to type of crop grown. The first group is of seventeen crops grown mainly for seed, although due to market conditions some of the crop had to be sold as stock feed to the Potato Marketing Board. In the second group are twelve crops of ware potatoes generally stored or pitted before dressing and sale. Lastly there is a small group of three crops sold straight off the field (green ware).

Growing conditions for the 1965 potato crop varied somewhat. In general the weather did not hinder planting operations, but the summer was dull and lacking in sunshine. Some of the yields were considered to be lighter due to this. In a few cases there was blight damage. In certain areas, because of the poor summer, the grain crop was slow in ripening and its harvest was delayed into potato lifting time. Those who managed to gather in their potato crop in time found that it lifted reasonably well. Others were unlucky with the weather, and in one small field, due to wet conditions, the crop was still in the ground in December and only partly recovered in the following spring.

Even although there had been a reduction in the United Kingdom 1965 potato acreage compared with the previous two years' acreages, it looked as if prices would be low for the third year running due to surplus production. Considerable support buying by the Potato Marketing Board was, in fact, required to maintain the market. Prices began to firm upwards by February. Seed prices which had also been low improved, but some growers of white seed dressed part of their crop for selling to the Board.

Although the present 1966 crop looks like being more profitable, the last few years have not been easy for potato growers. Of the twenty-seven farmers who took part in this costing in 1965, two decided not to grow potatoes in 1966 and a third let his potato land to a merchant grower.

As some farmers give up potato growing, there may be a tendency on the part of others towards more specialised growing of seed and ware on the better potato land, on a scale sufficient to justify considerable investment in modern equipment. There will probably always be the smaller acreages of varieties such as Golden Wonder grown on the family type of farm. Where yields can be heavy, as with Redskin, it would seem that lifting and selling straight off the field (green ware) will be a safe enough way of dealing with the crop. Contract growing of varieties such as Record for the crisping trade may also increase. Many growers may continue to consider the crop as a rather speculative venture, putting up with the years of low prices in order to share in the occasional very profitable year when prices are high.

This report forms part of a study of the cost of growing potatoes being carried out by the Economics Departments of the three Scottish Colleges of Agriculture.

Grateful acknowledgement is made of the help received from the farmers who co-operated by keeping cost records.

J.F. Macpherson.

SUMMARY OF RESULTS

All costs, including overheads (share of general farm expenses) and also the work of farmer and family, are charged. Yield per acre includes ware, seed and also chats and brock which averaged about one ton per acre for the ware crops and a third of a ton for the seed crops. Similarly the gross outputs per acre and average prices per ton include the chats and brock which were valued at around £2 per ton as stock feed.

Crop type	Seed	Ware	Green Ware
Number of costs	17	12	3
Acreage costed	198½	109	67½
Average per acre			
Yield (tons)	8.5	9.0	11.6
	£	£	£
Gross Output	132.7	129.0	136.4
Cost	122.3	125.2	115.0
Surplus	10.4	3.8	21.4
Gross Margin	67.1	69.2	71.7
Lifting costs	22.6	24.9	36.6
Average per ton			
Price	15.6	14.3	11.8
Cost	14.4	13.9	9.9
Surplus	1.2	0.4	1.9
Dressing costs	1.1	1.1	-

The results are given in detail in the tables at the end of the report, including the gross margin presentation in Table IV. There is also a Standard Appendix of tables prepared in an agreed form so that the various University and College Agricultural Economics Departments' costings can be more easily compared.

THE SAMPLE

ACREAGES

The potato acreages on the twenty-seven farms in the sample fell within the groups shown in the following table:-

Potato Acreage	Number of Farms
Under 5	3
5 - 10	9
10 - 20	10
20 - 30	2
30 - 50	3
	27

In all, thirty-two costings were prepared since on some farms more than one variety was grown and separate records were kept. The table below shows the distribution by acreage of the thirty-two crops.

Crop Acreage Costed	Seed	Ware	Green Ware	Total
Under 5	2	5	-	7
5 - 10	9	1	-	10
10 - 20	3	6	2	11
20 - 30	2	-	-	2
30 - 50	1	-	1	2
	17	12	3	32

VARIETIES AND YIELDS

The thirty-two costings covering in all 375 acres are placed in the categories in the table below according to crop type and potato variety.

	Seed	Ware	Green Ware	Ware Total
Number of costs	17	12	3	32

VARIETY	Seed Acreage	Ware Acreage	Green Ware Acreage	Total Acreage	Average yield per acre (tons)
Redskin	5½	93½	66½	165½	10.1
Majestic	115¼	-	-	115¼	9.0
Red Craigs Royal	42½	-	-	42½	7.3
Golden Wonder	-	12	½ *	12½	6.9
Arran Pilot	10½	-	-	10½	7.5
Kerr's Pink	3½	3½	½ *	7½	8.7
Arran Banner	7½	-	-	7½	8.9
Pentland Dell	6	-	-	6	12.5
Arran Peak	4	-	-	4	5.7
Record	3¼	-	-	3¼	12.7
Maris Peer	½	-	-	½	8.0
Total acreage	198½	109	67½	375	
Average yield per acre (tons)	8.5	9.0	11.6	9.2	

* The green ware sample included half an acre of Golden Wonder and half an acre of Kerr's Pink lifted but sold later in the season. It was not considered practical to take out separate costings for such small acreages.

The average yields per acre for the three groups were made up as follows:-

	Seed	Ware	Green Ware
Ware	3.3	7.0	10.5
Seed	4.9	0.7	-
Chats and brock	0.3	1.3	1.1
	8.5	9.0	11.6

The distribution of yield per acre is shown in the table below.

Average Yield per Acre	Seed	Ware	Green Ware
13 to 14 tons	-	-	1
12 to 13 tons	2	-	-
11 to 12 tons	-	1	2
10 to 11 tons	1	2	-
9 to 10 tons	2	3	-
8 to 9 tons	3	2	-
7 to 8 tons	3	1	-
6 to 7 tons	5	2	-
5 to 6 tons	1	-	-
4 to 5 tons	-	1	-
	17	12	3

THE CROP

PLACE IN ROTATION

The usual practice is for the potato crop to follow a grain crop or be taken out of lea. The summary below shows what happened.

Following	Seed	Ware	Green Ware
Grain	9	7	1
Grass	6	5	2
Roots	2	-	-

FARMYARD MANURE

Of the seventeen seed crops, nine received no dung at all. The estimated rate of dunging on the areas actually covered on the remaining eight crops was 10 tons per acre.

Of the twelve ware crops only three were not dunged. The remaining nine received an estimated 16 tons per acre.

Of the green ware crop only one was dunged - a fairly heavy dressing estimated at 20 tons per acre.

FERTILISERS

All the costed crops received fertiliser and the average weight of potato fertiliser applied per acre was as follows:-

	Seed			Ware			Green Ware		
Cwt. per acre	8.4			9.8			9.2		
	N	P	K	N	P	K	N	P	K
Units per acre	91	98	145	116	109	152	126	126	177

The average for the ware group shows proportionately more nitrogen since one of the crops received a later dressing of nitrogen in addition to the normal fertiliser, and another crop was dressed with a high nitrogen compound fertiliser.

SEED

Apart from one seed crop where the seed was boxed and another where it was stored in pallets there was no boxing of the seed.

The average rates of planting are shown below:-

Type	Cwt. per acre	% Purchased Seed
17 Seed	30.9	17
12 Ware	21.2	54
3 Green Ware	20.8	94

Two of the ware crops and one of the seed were planted by hand, otherwise planting was by machine. On two farms this was with an automatic planter.

CHEMICAL WEED CONTROL

On only two of the crops (both maincrop ware) was there any spraying for chemical control of weeds.

BLIGHT PRECAUTION

Six of the seed crops were sprayed against blight and one was dusted. Six of the ware crops were also sprayed as was one of the green ware crops.

HAULM DESTRUCTION

Thirteen of the seed crops were sprayed to burn down the shaws. One was pulverised and sprayed, and another topped with a reaper and sprayed. Only two small crops received no treatment for haulm destruction.

Of the maincrop ware five were sprayed and one was slashed with a pulley attachment. The remaining six were left.

Of the three green ware, half of one crop was slashed to destroy the shaws.

DIGGING AND LIFTING

Three of the seventeen seed crops were lifted by harvester, three (all on the one farm) by a two row elevator digger and the remainder by spinner digger.

All the twelve ware crops and the three green ware crops were dug by spinner digger.

STORING

Of the seventeen seed crops, fourteen were stored in shed, two in shed and pit and the remaining one in pit.

Of the twelve ware crops, ten were stored in shed, one in shed but with some seed pitted. The remaining one was a clamp of Golden Wonders.

LABOUR AND POWER

Potatoes are a crop which makes heavy demands on the labour and power resources available to the grower. Almost invariably some outside labour (casual employed directly by the grower or squads supplied by a potato merchant who contracts to lift the crop) has to be brought in. It should be noted that in this report contract labour has been included under the category of casual and gang labour. This is to distintuish such contract labour from contract services which refer to hire of machinery with operators e.g. spraying, supplying digger and tractor etc.

The table below gives a summary of the labour and power costs. The figures are averages per acre.

	17 Seed		12 Ware		3 Green Ware	
	Hours	£	Hours	£	Hours	£
Regular labour	49.9	15.84	57.8	16.90	28.7	9.18
Casual and gang	84.1	18.96	103.1	20.44	102.0	27.20
Power: tractor	26.1	5.87	33.2	7.48	27.7	6.22
dresser etc.		0.10		0.05		0.01
Contract services		5.11		3.55		4.14
		45.88		48.42		46.75

Table III in the Standard Appendix gives a further analysis of the labour and power requirements.

Apart from the purchase of seed of an expensive variety, the cost figures show that the biggest outlay with potatoes is paying for the lifting of the crop. The average cost per acre (all labour and power, whether farm, casual or contract) of lifting the crop was £23 for the seed crops, £25 for the ware and £37 for the green ware. The higher cost in the third group was due to the fact that lifting on two of the three farms in this group was by contract with the merchant who bought the crop, supplying pickers, transport, tractor and digger, etc., although the farmer provided tractors and trailers to help cart off the potatoes. On the third farm in the green ware group spinner digger and dressing machine were hired and a travelling squad of pickers lifted and dressed the crop with the farmer providing tractor and trailers. These workers were provided with free coal during their stay on the farm. The green ware crops were also on average heavier than the others.

The actual charges to the farmer were based on the time taken but worked out at from £29 to £32 per acre.

For three of the other farms where the contractor supplied only a squad of pickers and made a per acre charge, this charge varied from £17 to £20.

Where the pickers were employed directly by the farmer at so much per hour or per day, costs for a squad of casual workers were from £9 to £17 when expressed per acre, depending on the amount of regular farm labour available.

Some other contract charges were as follows:-

Dusting against blight	26s. per acre.
Spraying against blight	30s. to 35s. per acre, average 34s per acre.
Haulm destruction	£2 9s. for a half dose to just over £5 with £4 15s. to £5 a common figure in one area.

These charges will vary per acre according to the acreage being treated and the type of treatment.

COSTS AND PROFITABILITY

Costs varied due to a number of reasons - whether or not the crop was dunged, the variety and grade of seed planted, and the amount of labour and power used. Overheads (share of general farm expenses) were another important addition to the costs. As these overheads were calculated on the basis of labour costs, tractor hours and acreage, it will be realised that the item labour and power had an important bearing on the final cost. Also, the per tractor hour rate of calculating overheads was higher on a dairy farm than on an arable farm. The effect of all this, was that on some dairy farms with small acreages of potatoes (resulting in proportionately higher per acre labour and power costs) the overhead charges when expressed per acre gave extremely high estimates of from £45 to £50. For the arable farms the lowest overhead charge per acre was estimated at £18.

Further information on the method of calculating overheads is given in the section on method and charges.

Gross output per acre, depending on the yield and the price received per ton, also showed wide variations. Differences in yield have been discussed in an earlier section. Prices depended on the variety sold, whether for seed or ware, and on the time of selling e.g. some Pentland Dell seed sold for £30 per ton and Golden Wonder ware sold late in the season made over £30 per ton. At the other end of the scale some Majestic seed made under £10 per ton.

Where high yields and high prices coincided, the results (even if costs per acre were high) were gratifying. On the other hand a combination of low yield and low price was disastrous. The range over the whole sample was from a surplus of £188 per acre to a deficit of £49 per acre.

A summary of costs, gross output and profitability is given below. Further details will be found in the distribution tables in the appendix.

Cost	17 Seed	12 Ware	3 Green Ware
	£	£	£
Average per acre	122	125	115
Range	94-171	103-157	104-144

Of the seventeen seed costings, three were on dairy farms. Of the twelve ware costings, eight were on dairy farms, and of the three green ware costings, two were on dairy farms.

Gross Output	17 Seed	12 Ware	3 Green Ware
	£	£	£
Average per acre	133	129	136
Range	78-358	91-276	131-159

Profitability	17 Seed	12 Ware	3 Green Ware
	£	£	£
Average per acre	10	4	21
Range (Surplus to (-) Deficit)	188 to (-)49	126 to (-)32	55 to (-)10

Of the seventeen seed costings nine left a surplus and eight a deficit. Of the twelve ware costings six showed a surplus and six a deficit. Of the three green ware two had a surplus and the remaining one a deficit.

COSTING METHOD AND CHARGES

Seed

Purchased seed has been charged at cost. Home-grown seed has been charged at market value.

Fertilisers

Fertilisers have been charged at net cost (i.e. subsidy has been deducted). No credit has been given for manurial residues. Similarly no charge has been made for dung itself although all carting and spreading costs are included.

Casual Labour and Contract Work

Charged at the rates paid.

Regular Labour

Regular labour has been charged at the rates operating on the individual farms including insurance, graduated pension payments, and allowances for perquisites and holidays etc. Manual work of the farmer has been charged at the farm rate. Where there was no regular labour an estimated rate of 6/2d. per hour was charged for the farmer's manual work.

Tractor

Tractor work has been charged at an estimated 4/6d. per hour. This charge covers fuel, depreciation and repairs.

Depreciation and Repairs

For implements, equipment and buildings used specially for the potato crop a charge has been made as follows:-

Implements	20% of purchase price
Electrical equipment	15% of purchase price
Potato storage sheds or conversions	5% of purchase price

Rent

Rent has been charged at the rate paid by the tenant. For owner-occupiers it has been charged at a figure agreed with the farmer - generally in line with the increased rent that a sitting tenant would pay for a similar type of farm in the area.

Overheads (Share of General Farm Expenses)

These overhead expenses are difficult to estimate, since neither the complete financial accounts for the farms nor information as to the sharing of the overheads between the different enterprises on the farm are available. The overhead figures which have been used are based on a general average obtained from a sample of financial accounts of Scottish farms, and this is applied to the crop costings in proportion to the labour costs, to the number of tractor and horse hours (tractor-equivalent hours), and to the acreage used for the crop. The result of this is to give an overhead charge based on a national (Scottish) average instead of on the figures for each individual farm.

Overheads have been charged at the following rates:-

	Dairy Farms	Other Farms
Per acre	12s. 0d.	12s. 3d.
Per £ labour	7s. 9d	8s. 0d.
Per tractor hour	11s. 6d	6s. 3d.

Thus the total charge for a man with a tractor working for an hour (assuming 6/2d. for the man) will be as follows:-

		Dairy Farms		Other Farms
Man		6s. 2d.		6s. 2d.
Overhead	$\frac{7/9}{20/-} \times \frac{6/2}{1}$	2s. 5d.	$\frac{8/-}{20/-} \times \frac{6/2}{1}$	2s. 6d
Tractor		4s. 6d		4s. 6d
Overhead		11s. 6d		6s. 3d.
Total		24s. 7d		19s. 5d.

These three overhead charges per acre, per £ labour and per tractor hour, cover the share of general farm expenses which it is estimated should by borne by the potato crop:-

1. The share of the farm bill for wages, fuel, light and power, and for tractor depreciation and repairs which cannot be allocated to any particular crop or department.

2. A share of car running expenses and depreciation.

3. A share of miscellaneous farm expenses.

4. A share of repairs to buildings, fences and drains.

5. Shares of implement repairs, rates, insurance and depreciation on tenant's fixtures and normal farm implements.

TABLE I

PRODUCTION COSTS PER ACRE

AVERAGES FROM 17 SEED CROPS

(Money figures are in £'s decimal)

	£	£
5.055 tons dung (no change)	-	-
25.72 cwt. home-grown seed	20.147	
5.16 cwt. purchased seed	6.334	26.481
8.38 cwt. fertilisers		8.438
Box replacement	0.050	
Chemicals for weed control	-	
Sprays, dusts, fungicides etc.	0.159	
P.M.B. levy and excess acreage payments	3.360	
Inspection fee	0.748	
Sprays for haulm destruction	0.190	
Basket replacement	0.368	
Straw for storage etc.	0.845	
Miscellaneous	0.784	
Power for dresser etc.	0.098	6.602
1.665 hours (est.) contract services (incl, materials)	5.109	
32.816 hours gang labour (contract)	7.683	
51.328 hours casual labour (incl. meals etc.)	11.282	24.074
SUB TOTAL (VARIABLE COSTS)		65.595
Rent		5.203
Depreciation on specialised equipment etc.		6.132
9.563 hours farmer and wife	2.986	
40.354 hours regular farm labour	12.852	15.838
26.107 hours farm tractor		5.874
Overheads: per acre	0.611	
per £ labour	13.834	
per tractor hour	9.221	23.666
SUB TOTAL (OTHER COSTS)		56.713
TOTAL COST		122.308

TABLE IA

PRODUCTION COSTS PER ACRE BY STAGES

AVERAGES FROM 17 SEED CROPS

(Money figures in £'s decimal)

	ITEMISED COSTS £	STAGE TOTALS £	CUMULATIVE TOTALS £	
FARMYARD MANURE AND APPLICATION				
5.06 tons dung (no charge)	-			
1.350 hours labour	0.420			
1.572 hours tractor	0.354			
0.186 hours (est.) contract services	0.186	0.960	0.960	DUNG NOW SPREAD
SEED, FERTILISERS AND FIELD WORK				
25.720 cwt. home-grown seed	20.147			
5.160 cwt. purchased seed	6.334			
8.380 cwt. fertilisers	8.438			
14.118 hours labour	4.117			
8.883 hours tractor	1.999			
0.214 hours (est.) contract services	0.339			
Sundries	0.050	41.424	42.384	CROP NOW PLANTED
SUMMER CULTIVATIONS ETC.				
6.247 hours labour	1.909			
3.486 hours tractor	0.784			
0.479 hours (est.) contract services	3.899			
Sundries	1.097	7.689	50.073	CROP READY TO HARVEST
HARVESTING, LIFTING AND STORING				
80.330 hours labour	19.232			
12.091 hours tractor	2.720			
0.786 hours (est.) contract services	0.685			
Sundries	1.213	23.850	73.923	CROP SECURED
DRESSING AND SORTING ETC.				
32.016 hours labour	9.125			
0.075 hours tractor	0.017			
Sundries	0.784			
Fuel and power for sorting machine	0.098	10.024	83.947	CROP DRESSED FOR SALE
RENT		5.203		
P.M.B. LEVY AND EXCESS ACREAGE PAYMENTS		3.360		
DEPRECIATION ON SPECIALISED EQUIPMENT ETC.		6.132		
OVERHEADS				
Dung work only: per £ labour	0.167			
per tractor hour	0.534	0.701		
All other work: per acre	0.611			
per £ labour	13.667			
per tractor hour	8.687	22.965		
TOTAL COST		122.308	122.308	TOTAL COST

TABLE II

PRODUCTION COSTS PER ACRE

AVERAGES FROM 12 WARE CROPS

(Money figures are in £'s decimal)

	£	£
9.927 tons dung (no charge)	-	-
9.64 cwt. home-grown seed	8.382	
11.52 cwt. purchased seed	11.719	20.101
9.84 cwt. fertilisers		10.701
Box replacement	-	
Chemicals for weed control	0.189	
Sprays, dusts, fungicides etc.	0.231	
P.M.B. levy and excess acreage payments	3.014	
Inspection fee	0.172	
Spray for haulm destruction	0.959	
Basket replacement	0.310	
Straw for storage etc.	0.092	
Miscellaneous	0.046	
Power for dresser etc.	0.046	5.059
2.454 hours (est.) contract services (incl. materials)	3.549	
19.757 hours gang labour (contract)	3.978	
83.367 hours casual labour (incl. meals etc.)	16.463	23.990
SUB TOTAL (VARIABLE COSTS)		59.851
Rent		5.347
Depreciation on specialised equipment etc.		4.769
17.369 hours farmer and wife	5.485	
40.399 hours regular farm labour	11.417	16.902
33.248 hours farm tractor		7.481
Overheads: per acre	0.606	
per £ labour	14.710	
per tractor hour	15.565	30.881
SUB TOTAL (OTHER COSTS)		65.380
TOTAL COST		125.231

TABLE IIA

PRODUCTION COSTS PER ACRE BY STAGES

AVERAGES FROM 12 WARE CROPS
(Money figures in £'s decimal)

	ITEMISED COSTS £	STAGE TOTALS £	CUMULATIVE TOTALS £	
FARMYARD MANURE AND APPLICATION				
9.927 tons dung (no charge)	-			
0.748 hours labour	1.120			
3.280 hours tractor	0.738			
- hours (est.) contract services	-	1.858	1.858	DUNG NOW SPREAD
SEED, FERTILISERS AND FIELD WORK				
9.64 cwt. home-grown seed	8.382			
11.52 cwt. purchased seed	11.719			
9.84 cwt. fertilisers	10.701			
15.702 hours labour	4.306			
9.151 hours tractor	2.059			
- hours (est.) contract services	-			
Sundries	-	37.167	39.025	CROP NOW PLANTED
SUMMER CULTIVATIONS ETC.				
9.995 hours labour	2.900			
6.817 hours tractor	1.534			
0.275 hours (est.) contract services	1.203			
Sundries	1.551	7.188	46.213	CROP READY TO HARVEST
HARVESTING, LIFTING AND STORING				
91.027 hours labour	19.480			
13.560 hours tractor	3.051			
2.179 hours (est.) contract services	2.346			
Sundries	0.402	25.279	71.492	CROP SECURED
DRESSING AND SORTING ETC.				
40.420 hours labour	9.537			
0.440 hours tractor	0.099			
Sundries	0.046			
Fuel and power for sorting machine	0.046	9.728	81.220	CROP DRESSED FOR SALE
RENT		5.347		
P.M.B. LEVY AND EXCESS ACREAGE PAYMENTS		3.014		
DEPRECIATION ON SPECIALISED EQUIPMENT ETC.		4.769		
OVERHEADS				
Dung work only: per £ labour	0.436			
per tractor hour	1.780	2.216		
All other work: per acre	0.606			
per £ labour	14.274			
per tractor hour	13.785	28.665		
TOTAL COST		125.231	125.231	TOTAL COST

TABLE III

PRODUCTION COSTS PER ACRE

AVERAGES FROM 3 GREEN WARE CROPS

(Money figures are in £'s decimal)

	£	£
3.852 tons dung (no charge)	-	-
1.34 cwt. home-grown seed	1.304	
19.42 cwt. purchased seed	17.963	19.267
9.16 cwt. fertilisers		11.090
Box replacement	-	
Chemicals for weed control	-	
Sprays, dusts, fungicides etc.	-	
P.M.B. levy and excess acreage payments	3.000	
Inspection fee	-	
Sprays for haulm destruction	-	
Basket replacement	-	
Straw for storage etc.	-	
Miscellaneous	0.015	
Power for dresser etc.	0.005	3.020
3.200 hours (est.) contract services (incl. materials)	4.138	
42.460 hours gang labour (contract)	7.874	
59.496 hours casual labour (incl. meals, etc.)	19.329	31.341
SUB TOTAL (VARIABLE COSTS)		64.718
Rent		4.026
Depreciation on specialised equipment etc.		1.091
3.296 hours farmer and wife	1.015	
25.378 hours regular farm labour	8.166	9.181
27.667 hours farm tractor		6.225
Overheads: per acre	0.602	
per £ labour	14.174	
per tractor hour	14.975	29.751
SUB TOTAL (OTHER COSTS)		50.274
TOTAL COST		114.992

TABLE IIIA

PRODUCTION COSTS PER ACRE BY STAGES

AVERAGES FROM 3 GREEN WARE CROPS

(Money figures in £'s decimal)

	ITEMISED COSTS	STAGE TOTALS	CUMULATIVE TOTALS	
FARMYARD MANURE AND APPLICATION	£	£	£	
3.852 tons dung (no charge)	-			
1.985 hours labour	0.588			
2.978 hours tractor	0.670			
- hours (est.) contract services	-	1.258	1.258	DUNG NOW SPREAD
SEED, FERTILISERS AND FIELD WORK				
1.34 cwt. home-grown seed	1.304			
19.42 cwt. purchased seed	17.963			
9.16 cwt. fertilisers	11.090			
10.652 hours labour	3.240			
9.304 hours tractor	2.093			
- hours (est.) contract services	-			
Sundries	-	35.690	36.948	CROP NOW PLANTED
SUMMER CULTIVATIONS ETC.				
7.014 hours labour	2.219			
4.645 hours tractor	1.045			
0.045 hours (est.) contract services	0.244			
Sundries	-	3.508	40.456	CROP READY TO HARVEST
HARVESTING FOR SALE OFF FIELD				
110.979 hours labour	30.337			
10.740 hours tractor	2.417			
3.155 hours (est.) contract services	3.894			
Sundries	0.015			
Fuel and power for sorting machine	0.005	36.668	77.124	CROP READY FOR SALE
RENT		4.026		
P.M.B. LEVY AND EXCESS ACREAGE PAYMENTS		3.000		
DEPRECIATION ON SPECIALISED EQUIPMENT ETC.		1.091		
OVERHEADS				
Dung work only: per £ labour	0.228			
per tractor hour	1.712	1.940		
All other work: per acre	0.602			
per £ labour	13.946			
per tractor hour	13.263	27.811		
TOTAL COST		114.992	114.992	TOTAL COST

TABLE IV

AVERAGE OUTPUT AND COSTS PER ACRE

	17 Seed		12 Ware		3 Green Ware	
OUTPUT	Tons	£	Tons	£	Tons	£
Ware	3.3	49.1	7.0	113.8	10.5	134.2
Seed	4.9	83.1	0.7	12.4	-	-
Chats and brock	0.3	0.5	1.3	2.8	1.1	2.2
Total	8.5	132.7	9.0	129.0	11.6	136.4
VARIABLE COSTS	cwt.		cwt.		cwt.	
Seed	30.9	26.5	21.2	20.1	20.8	19.3
Fertiliser	8.4	8.4	9.8	10.7	9.2	11.1
Miscellaneous		6.6		5.0		3.0
Contract and casual work		24.1		24.0		31.3
Total		65.6		59.8		64.7
GROSS MARGIN		67.1		69.2		71.7
OTHER COSTS						
Rent		5.2		5.3		4.0
Depreciation on specialised equipment etc.		6.1		4.8		1.1
Farm labour and power		21.7		24.4		15.4
Overheads(share of general farm expenses)		23.7		30.9		29.8
Total		56.7		65.4		50.3
SURPLUS		10.4		3.8		21.4

TABLE V

DISTRIBUTION OF COST PER ACRE

Cost per acre (£'s)	Seed	Ware	Green Ware
Under 100	1	-	-
100 - 110	3	2	2
110 - 120	5	2	-
120 - 130	1	3	-
130 - 140	5	2	-
140 - 150	-	1	1
Over 150	2	2	-
	17	12	3

TABLE VI

DISTRIBUTION OF COST PER TON

Cost per ton (£'s)	Seed	Ware	Green Ware
Under 8	-	-	1
8 - 10	-	-	1
10 - 12	3	1	-
12 - 14	2	6	1
14 - 16	5	2	-
16 - 18	3	1	-
18 - 20	4	1	-
20 - 30	-	-	-
Over 30	-	1	-
	17	12	3

TABLE VII

DISTRIBUTION OF RETURNS PER ACRE

Returns per acre (£'s)	Seed	Ware	Green Ware
Under 80	1	-	-
80 - 90	2	-	-
90 - 100	2	1	-
100 - 120	3	4	-
120 - 140	4	3	2
140 - 160	2	2	1
160 - 200	2	1	-
200 - 250	-	-	-
250 - 300	-	1	-
300 - 350	-	-	-
Over 350	1	-	-
	17	12	3

TABLE VIII

DISTRIBUTION OF RETURNS PER TON

Returns per ton (£'s)	Seed	Ware	Green Ware
Under 10	-	-	-
10 - 12	2	2	3
12 - 14	4	2	-
14 - 16	5	3	-
16 - 18	2	-	-
18 - 20	1	2	-
20 - 25	2	1	-
25 - 30	1	1	-
Over 30	-	1	-
	17	12	3

TABLE IX

DISTRIBUTION OF PROFITABILITY (SURPLUS PER ACRE)

Profitability per acre (£'s)		Seed	Ware	Green Ware
Surplus	Over 175	1	-	-
	150 - 175	-	-	-
	125 - 150	-	1	-
	100 - 125	-	-	-
	75 - 100	-	1	-
	50 - 75	1	-	1
	25 - 50	2	1	-
	Under 25	5	3	1
Deficit	Under 25	5	4	1
	25 - 50	3	2	-
		17	12	3

TABLE X

DISTRIBUTION OF PROFITABILITY (SURPLUS PER TON)

Profitability per ton (£'s)		Seed	Ware	Green Ware
Surplus	Over 14	1	1	-
	12 - 14	-	-	-
	10 - 12	-	-	-
	8 - 10	-	1	-
	6 - 8	-	-	-
	4 - 6	2	1	1
	2 - 4	3	1	1
	Under 2	4	2	-
Deficit	Under 2	3	4	1
	2 - 4	1	1	-
	4 - 6	-	-	-
	Over 6	3	1	-
		17	12	3

STANDARD APPENDIX

The figures in the tables in this appendix are from 17 seed potato costings on 198½ acres, 12 ware costings on 109 acres and 3 green ware costings on 67½ acres. Money figures are in £'s decimal.

TABLE I

Summary of Average Costs per Acre

Items of Cost	17 Seed		12 Ware		3 Green Ware	
	Hours	£	Hours	£	Hours	£
Regular labour	49.9	15.838	57.8	16.902	28.7	9.181
Casual and gang	84.1	18.965	103.1	20.441	102.0	27.203
Power: Tractor	26.1	5.874	33.2	7.481	27.7	6.225
Contract services		5.109		3.549		4.138
Machinery depreciation and repair allowance		6.132		4.769		1.091
Other fuel (or power)		0.098		0.046		0.005
Materials: seed		26.481		20.101		19.267
fertilisers and manures applied		8.438		10.701		11.090
sundries		3.144		1.999		0.015
Rent		5.203		5.347		4.026
P.M.B. levy and excess acreage payment		3.360		3.014		3.000
Share of general farm expenses		23.666		30.881		29.751
Cost		122.308		125.231		114.992

STANDARD APPENDIX

TABLE II

Summary of Average Yields and Returns

	Average Yield per Acre		
	17 Seed (tons)	12 Ware (tons)	3 Green Ware (tons)
Ware	3.3	7.0	10.5
Seed	4.9	0.7	-
Chats and brock	0.3	1.3	1.1
Total	8.5	9.0	11.6

	Average Returns or Estimated Value					
	17 Seed		12 Ware		3 Green Ware	
	Per Acre £	Per Ton £	Per Acre £	Per Ton £	Per Acre £	Per Ton £
Ware	49.088	15.089	113.758	16.267	134.219	12.785
Seed	83.087	16.965	12.454	17.745	-	-
Chats and brock	0.517	1.541	2.856	2.221	2.200	2.092
Total	132.692	15.636	129.068	14.371	136.419	11.811
Net Cost	122.308	14.412	125.231	13.944	114.992	9.956
Margin	10.384	1.224	3.837	0.427	21.427	1.855

STANDARD APPENDIX

TABLE III

Summary of Average Labour and Power used per Acre

Averages for 17 Seed Potato Costings

Hours per Acre

Operation	Farm Staff	Casual & Gang	Contract Services	Tractor
Up to harvest	16.75	4.97	0.88	13.94
Lifting and storing	14.61	65.72	0.79	12.09
Dressing	18.56	13.45	-	0.08
Total	49.92	84.14	1.67	26.11

Averages for 12 Ware Potato Costings

Hours per Acre

Operation	Farm Staff	Casual & Gang	Contract Services	Tractor
Up to harvest	25.28	4.16	0.27	19.25
Lifting and storing	18.30	72.73	2.18	13.56
Dressing	14.19	26.23	-	0.44
Total	57.77	103.12	2.45	33.25

Averages for 3 Green Ware Costings

Hours per Acre

Operation	Farm Staff	Casual & Gang	Contract Services	Tractor
Up to harvest	17.93	1.72	0.04	16.93
Lifting and storing	10.74	100.24	3.16	10.74
Dressing	-	-	-	-
Total	28.67	101.96	3.20	27.67

STANDARD APPENDIX

TABLE IV

Summary of Average Quantities of Materials etc. used per Acre

Material	17 Seed		
			Overall Average per Acre
Seed:			
purchased			5.16 cwt.
home-grown			25.72 cwt.
	Area dressed only		
	Acres	Average per Acre	
Farmyard manure	97	10.35 tons	5.06 tons
Straights - Nitrogen	-	-	-
Compounds	198½	8.38 cwt.	8.38 cwt.

Material	12 Ware		
			Overall Average per Acre
Seed:			
purchased			11.52 cwt.
home-grown			9.64 cwt.
	Area dressed only		
	Acres	Average per Acre	
Farmyard manure	66½	16.27 tons	9.93 tons
Straights - Nitrogen	19½	2.1 cwt.	0.38 cwt.
Compounds	109	9.46 cwt.	9.46 cwt.

Material	3 Green Ware		
			Overall Average per Acre
Seed:			
purchased			19.42 cwt.
home-grown			1.34 cwt.
	Area dressed only		
	Acres	Average per Acre	
Farmyard manure	13	20.00 tons	3.85 tons
Straights - Nitrogen	-	-	-
Compounds	67½	9.16 cwt.	9.16 cwt.