Oats - Cost of production

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE

OAT COSTINGS, 1962 CROP

FOR 29 CROPS

R. F. Munro

178 Bothwell Street,
Glasgow, C.2

Economics Department Report No. 91
1963

The most recent Reports issued by the Economics Department are:—

No. 84 The Ewe Flock on the Dairy Farm.

No. 85 Milk Production Investigation, 1961-62.

No. 86 Poultry Costings, 1961-62.

No. 87 Farm Financial Returns, 1961-62. Hill Farms in Highland Area.

No. 88 Farm Financial Returns, 1961-62. Hill Farms outwith Highland Area.

No. 89 Farm Financial Returns, 1961-62. Crop and Stock Farms.

No. 90 Farm Financial Returns, 1961-62. Dairy Farms.

Copies are obtainable on request.

CONTENTS

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE

OAT COSTINGS, 1962 CROP

178 Bothwell Street,
Glasgow, C. 2.

Economics Department Report No. 91
1963

———————cOo———————

INTRODUCTION

This report deals with the results from the costings of 29 oat crops totalling 425 acres on 27 farms. The main purpose of the study was to obtain up to date figures on the cost of oats cut with the combine. In order to concentrate the work and save time and expense in travel, the costings were restricted to two counties - Ayrshire and Wigtownshire.

Most of the report deals with average figures from 21 costings of oats cut with the combine and dried, but results are also given for eight crops cut with the binder, stooked and threshed with the combine.

The costed crops were grown mainly for feeding, whether for sale as feeding oats or for home use. For the purposes of comparison, a grouping was made of the crops cut with the combine according to the total acreage of grain grown on each farm; the first group had less than 50 acres of cereals per farm in 1962 and the second had more than 50 acres.

In general, 1962 was a good year for grain but with the prolonged rain at harvest time, only four of the combined-cut crops were stored without any artificial drying.

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

R.F. Munro.

DEFINITION OF SOME TERMS

The figures given in this report are weighted averages, that is, the per acre divisor is the aggregate acreage of all the farms in each group and similarly, the per ton divisor is the total tonnage produced from all farms in each group. All figures are given to one or two decimal places.

Yield of Oats: This is the actual or best possible estimate of yield with the grain dried and in store.

Yield of Straw: This is the best possible estimate of yield with the straw baled and in store.

Deficiency Payment: This is the actual figure for the 1962 oat crop, namely £6.60 per acre.

Grain Acreage of Farm: This is the total acreage of grain grown in 1962 whether oats, barley or wheat.

Net Cost: All direct and indirect costs are charged including drying and storage costs, overheads (share of general farm expenses), rent of land and work of farmer and family. An adjustment is made for the residual value of manures and grass residues, giving the GROSS COST. A credit for straw of one-seventh of the Gross Cost is deducted giving the NET COST of oat production.

SURPLUS: This is the difference between Total Revenue and Net Cost.

----------oOo----------

SUMMARY OF RESULTS

The average Net Cost for the 21 combine cut crops, including drying and storage costs was £24.5 per acre and the average Net Cost for the eight binder cut crops was £26.8 per acre. A summary of the three groups was as follows:-

COMBINE CUT CROPS

	Grain Acreage of Farm Under 50 ac.	Grain Acreage of Farm Over 50 ac.	General Average These 21 Crops	BINDER CUT CROPS
Number of records	12	9	21	8
Acreage costed	142	188	330	95
Average Yield per Acre				
Oats (cwt.)	24	25	25	24
Straw (cwt.)	18	19	19	23
Per Acre	£	£	£	£
Value of grain	21.92	22.51	22.25	21.28
Deficiency payments	6.60	6.60	6.60	6.60
Total Revenue	28.52	29.11	28.85	27.88
Net Cost	26.00	23.34	24.48	26.83
SURPLUS	2.52	5.77	4.37	1.05
Per Ton	£	£	£	£
Value of oats	18.00	18.00	18.00	18.00
Deficiency Payments	5.42	5.28	5.34	5.59
Total Revenue	23.42	23.28	23.34	23.59
Net Cost	21.35	18.67	19.81	22.70
SURPLUS	2.07	4.61	3.53	0.89

Labour and Power

The average hours worked per acre for the 21 combined cut crops were:-

Stage	Hours per Acre Farm Staff	Contract Man	Contract Tractor	Tractor
Pre-Harvest	8.26	0.28	0.28	7.48
Harvesting	6.85	0.13	0.06	3.26
Drying and Storing	0.81	-	-	0.31
	15.92	0.41	0.34	11.05

Each acre required 16.3 man hours and 11.4 tractor hours per acre. (This compares with 29.3 man hours and 12.6 tractor hours per acre with the eight binder cut crops.

———————oOo———————

VARIETIES AND YIELDS

FORWARD and BLENDA were the varieties used for 15 of the crops costed and the varieties STAR, YIELDER, CONDOR, SUN II, AYR BOUNTY, AYR COMMANDO, and AYRLINE were used for the other 14 crops.

The yield per acre of oats was as low as 15 cwt. per acre in one case and as high as 32 cwt. per acre in another. Straw yields varied between 10 cwt. and 28 cwt. per acre.

The table below shows the distribution of estimated oat and straw yields.

Average Yield per Acre	Number of Costs: Combine Cut Crops	Binder Cut Crops
Grain		
30 cwt. and over	4	1
26 - 29.9 cwt.	4	-
22 - 25.9 cwt.	8	5
18 - 21.9 cwt.	5	1
14 - 17.9 cwt.	-	1
	21	8
Straw		
26 cwt. and over	1	4
22 - 25.9 cwt.	6	1
18 - 21.9 cwt.	8	2
14 - 17.9 cwt.	2	1
10 - 13.9 cwt.	4	-
	21	8

GROWING THE CROP

Reasons for Growing Oats

Over half of the farmers grew barley as well as oats in 1962. The reasons they gave for growing oats were mainly for the better feeding value of oat straw compared with barley straw and because the oat crop was more reliable in local weather conditions. A few farmers thought that oats were a better nurse crop for the "sow-out" and some preferred oats because they could be cut with a combine or a binder depending on conditions.

Place in Rotation

Twenty-five of the crops were sown out with a permanent grass seed mixture and only 4 crops were not sown out. The place in rotation is shown as follows:-

	Number of Costs	
"Sow-out" crops Following:-	Combine Cut	Binder Cut
Grain	6	1
Roots or Italian Ryegrass	9	5
Grass	4	-
"Non-sow-out" crops Following:-		
Grain	1	-
Grass	1	2

For the Wigtownshire costings, the crop following grass was sometimes barley but more commonly turnips then barley followed by oats sown out, whereas with the Ayrshire costings, it was usually oats or barley out of lea followed by roots or Italian Ryegrass then oats sown out. In a number of cases, the root crop was omitted from the rotation.

Fertilisers

Dung: This was applied in 5 cases at rates varying between 8 and 12 tons per acre. Four of the crops had no other fertilisers and all the crops dunged were cut with the combine.

Lime: This was applied in 5 cases.

Slag: This was applied in 1 case.

Compounds: In 17 costs, compound fertilisers were applied at rates between one cwt. and three cwt. per acre. (The average rate was 2.4 cwt. per treated acre). Fertilisers were all machine spread but in 5 costs, the seed and fertilisers were sown by the combine drill.

Seed: In 21 costs, the seeds used were purchased and in 8 costs, the seeds were home-grown. The rate ofsowing varied between one cwt. per acre and 2.2 cwt. per acre and averaged 1.8 cwt. per acre. (In one case seed was applied by hand at the rate of one cwt. per acre).

Spraying: In 13 costs, spraying for weeds was carried out. The sprays, containing M.C.P.A. or M.C.P.B. were applied by contract in 4 cases and by means of farm sprayer in the other cases. The cost, excluding overhead share, averaged £1.48 to spray an acre but the range was between £0.77 and £2.34. The importance of applying the spray early was emphasised to prevent any harmful effects caused by the tractor and sprayer wheels on the young growing crop.

Harvesting: Twenty-one crops were cut with the combine and 8 with the binder. The farmers in the latter group, although possessing a combine preferred in 1962 to cut with the binder and thresh with the combine. In 19 costs of the combine cut group, three different types of combine were used:-

	No. of Crops
A. Tractor drawn : bagger	9
B. Self-propelled: bagger	6
C. Self-propelled: tanker	4
	19

Although these groups are small, the averages may be of interest. Types A and B were operated by two or three men and Type C by one man. The man hours and tractor hours per acre for each harvesting operation in each type and a comparison with the binder cut crops D, were as follows:-

	A		B		C		D	
Grain Handling	M.H.	T.H.	M.H.	T.H.	M.H.	T.H.	M.H.	T.H.
Pre-combining	0.1	+	-	-	-	-	-	-
Combining	2.9	1.5	2.9	-	1.0	-	-	-
Hauling grain	1.5	0.8	1.4	1.0	1.3	1.0	-	-
Total (i)	4.5	2.3	4.3	1.0	2.3	1.0	-	-
Bale Handling								
Pre-baling	0.6	0.6	0.3	0.2	0.2	0.2	-	-
Baling	0.7	0.6	0.8	0.4	0.4	0.4	-	-
Hauling bales	2.4	1.1	2.5	1.2	2.1	0.8	-	-
Total (ii)	3.7	2.3	3.6	1.8	2.7	1.4	-	-
Total (i) + (ii)	8.2	4.6	7.9	2.8	5.0	2.4	22.5	6.4

Note: The figure of man hours and tractor hours for the binder cut crops (D) includes stacking and threshing times.

The man hours required to harvest by binder were on average three times greater than the man hours to harvest by combine.

It is interesting to compare the cost of harvesting, drying and storing the combine cut crops with that of the binder cut crops. ("Overheads" have been excluded in both cases).

	Combine Cut	Binder Cut
Number of costs	21	8
Yield: Oats per acre (cwt.)	25	24
Yield: Straw per acre (cwt.)	19	23
Costs per acre	£	£
Grain handling	2.95	-
Bale handling	2.47	-
Drying and storing	2.12	-
Total Harvesting	7.54	11.20
Range	£4.8 to £11.8	£7.0 to £15.2

The difference of £3.66 is due mostly to the fact that the cost of drying the combine cut crops is more than offset by the higher labour costs of the binder cut crops.

Drying and Storing

Because of wet conditions at harvest time, 14 of the combine cut crops had to be dried and a part of three other crops were dried. Seven of the crops were dried by contract and the average cost including hauling and storage, but excluding farm overheads was, £3.47 per dried ton and the range was £2.3 to £4.8.

Seven of the crops were dried on the farm and the types of drier used were as follows:-

Dried Loose	
Continuous flow	2
In - bin	1
Dried in Sacks	
Platform	3
Lister Hay Drier	1
	7

The average cost including storing, but excluding "Overheads" was £1.79 per dried ton but this varied from as little as £0.9 per ton to £2.3 per ton depending on the moisture content of the crop, method of drying and storage facilities. Most of the crops were stored in existing farm buildings and only in three cases were they stored dry in storage bins. Details of drying and storage costs are in Appendix Table IV.

COSTS

The combined cut crops were divided into two groups depending on the total acreage of grain grown on each farm. In the first group, each farm harvested less than 50 acres of grain in 1962 and in the second group more than 50 acres. This division was an attempt to separate the larger grain growers from the smaller ones. Net Cost per acre ranged from as low as £18 to as high as £36. A few of the high cost combine-cut crops were high mainly because of the application of farmyard manure. Details of costs are in Appendix Tables I and II. The distribution of Net Cost per acre and per ton is given below:-

COMBINE CUT CROPS

	Grain Acreage of Farm		General Average	BINDER
Net Cost per Acre	Under 50 ac.	Over 50 ac.	These 21 Crops	CUT CROPS
£30 and over	1	1	2	3
£25 to £29.9	5	1	6	-
£20 to £24.9	4	5	9	4
£15 to £19.9	2	2	4	1
	12	9	21	8
Net Cost per Ton				
£25 and over	3	-	3	3
£20 to £24.9	3	2	5	3
£15 to £19.9	5	6	11	2
£10 to £14.9	1	1	2	-
	12	9	21	8

RETURNS

The returns per acre and per ton were calculated on the basis of oats at an estimated market value of £18 per ton and the actual 1962 crop deficiency payment of £6.60 per acre. Returns per acre ranged from £20 for a crop averaging 15 cwt. per acre grain to £35 for a crop averaging 32 cwt. per acre grain. Details of returns are shown in Appendix Table III.

The distribution of Returns per acre and per ton is given below:-

COMBINE CUT CROPS

	Grain Acreage of Farm		General Average	BINDER
Revenue per Acre	Under 50 ac.	Over 50 ac.	These 21 Crops	CUT CROPS
£32 and over	3	2	5	1
£28 to £31.9	5	3	8	3
£24 to £27.9	4	4	8	2
£20 to £23.9	-	-	-	2
	12	9	21	8
Revenue per Ton				
£25 and over	-	-	-	2
£24 to £24.9	3	2	5	-
£23 to £23.9	5	4	9	5
£22 to £22.9	4	3	7	1
	12	9	21	8

PROFITABILITY

The difference between revenue and net cost is termed Surplus or Deficit and is the profit or loss reduced by a charge for the manual work of farmer and wife. Results ranged from a Deficit of £10 per acre, where the crop was dunged and dried and where the yield was only 21 cwt. per acre to a Surplus of £13 per acre where the average yield was 31 cwt. per acre. Details of profitability are shown in Appendix Table III.

The distribution of Surplus and Deficit per acre and per ton are given below:-

COMBINE CUT CROPS

	Grain Acreage of Farm		General Average	BINDER
Surplus/Deficit per Acre	Up to 50 ac.	Over 50 ac.	These 21 Crops	CUT CROPS
Surplus: £12 and over	-	1	1	-
£8 to £11.9	4	2	6	-
£4 to £7.9	2	4	6	2
£0 to £3.9	3	-	3	4
Deficit: £0 to £3.9	2	2	4	2
£4 and over	1	-	1	-
	12	9	21	8
Surplus/Deficit per Ton				
Surplus: £8 and over	-	2	2	-
£4 to £7.9	5	5	10	-
£0 to £3.9	4	-	4	6
Deficit £0 to £3.9	2	2	4	2
£4 and over	1	-	1	-
	12	9	21	8

Seven of the 29 crops costed showed a deficit and 14 had a surplus of less than £4 per acre after deficiency payments had been included with revenue.

LABOUR AND POWER

The following tables show the labour and power inputs by stages in the three groups:-

COMBINE CUT CROPS

Man hours per acre(a)	Grain Acreage of Farm		General Average	BINDER
	Up to 50 ac.	Over 50 ac.	These 21 Crops	CUT CROPS
Stage	M.H.	M.H.	M.H.	M.H.
Up to crop in ground	6.8	5.9	6.3	6.3
Spraying and weeding	0.5	0.2	0.3	0.1
Harvest work	8.3	5.8	7.0	22.5
Drying and storage	1.0	0.7	0.8	0.4
Sub-total	16.6	12.6	14.4	29.3
Dungwork	1.2	2.5	1.9	-
Total	17.8	15.1	16.3	29.3
Tractor hours per acre(a)				
Stage	T.H.	T.H.	T.H.	T.H.
Up to crop in ground	6.4	5.7	6.0	6.0
Spraying and weeding	0.3	0.1	0.2	0.1
Harvest work	3.8	2.9	3.3	6.4
Drying and storage	0.4	0.3	0.3	0.1
Sub-total	10.9	9.0	9.8	12.6
Dungwork	0.9	2.1	1.6	-
Total	11.8	11.1	11.4	12.6

Note: (a) Including contract work.

Dungwork is shown separately because only 5 crops were dunged. Comparing the groups at the "Sub-total" stage i.e. omitting dungwork, the "over 50 ac." combine cut group had the lowest tractor and labour requirements per acre.

GROSS MARGIN

So far, the costs shown have been prepared on traditional enterprise cost methods where an attempt is made to find the net cost of grain production. This brings in both variable costs and fixed costs. The concept of Gross Margin is to compare enterprises at the point where variable costs are deducted from total returns. With grain crops the gross margin can be expressed per acre of grain and straw where straw has a market value. In this College area, the oat straw has a certain feeding value and for the purpose of this calculation has been valued at £6 per ton. Farm labour is partly a fixed and a variable cost and is shown separately below:-

	COMBINE CUT CROPS	BINDER CUT CROPS
Number of records	21	8
	£	£
Value of grain	22.25	21.28
Deficiency payments	6.60	6.60
Value of straw	5.55	6.90
TOTAL (A)	34.40	34.78
Variable Costs	£	£
Seed	2.70	2.93
Manures applied (a)	1.46	2.74
Manurial residues c/f	(-) 0.55	(-) 1.38
Tractor, Combine and Drying Fuel	1.31	1.28
Contract Work	1.60	0.50
Sprays	0.55	0.23
Twine	0.48	1.04
Bag replacement	0.07	0.06
TOTAL (B)	7.62	7.40
GROSS MARGIN (A) - (B)	26.78	27.38
Farm labour	3.43	6.68
	23.35	20.70

Note: (a) Dung and application costs omitted.

The Gross Margins are fairly similar in the two groups although when labour is charged, the combine cut group is slightly higher than the binder cup group.

COSTING METHOD AND CHARGES

SOME DEFINITIONS

Lime and Fertilisers: This is the cost (less subsidy) of the lime and fertilisers for the 1962 crop.

Dung: Dung applied was taken at an estimated cost of 17s. 6d. per ton at steading. The cost of labour and power in applying dung to the crop is charged.

Seeds: This is the cost for purchased or home-grown seeds and includes seed dressings. Home-grown seeds are costed at the approximate market value.

Materials: This covers any sundries bought, e.g. weed sprays, baler twine, etc.

Depreciation etc. on Special Equipment: A charge for depreciation and repairs on all the usual farm machinery for oat production is included with the item "Share of Farm General Expenses". The line for Depreciation covers depreciation and repairs on any specialist machinery. The depreciation rates used are as follows:-

10% + ¼	15% + ¼	25% + ¼
Combine Drills.	Combines	Sprayers
Drying and Storing Equipment	Balers	

Labour, Field Power & Contract Charges: This covers all man, horse and tractor work. All work done by family labour or by the farmer and his wife has been charged at the rates shown below.

The rates used for hired labour were the actual hourly rates paid, including perquisites, plus about 4d per hour to allow for broken time, sick time, etc., over the year. For family labour, rates approximately equivalent to those for similar hired labour were charged. Examples are:-

Farmer	5/0d per hour
Sons (over 20)	5/0d " "
Sons (18 to 20)	4/0d " "
Sons (up to 18)	2/6d " "
Wife	3/10d " "
Daughters (over 21)	3/10d " "
Daughters (18 to 21)	3/4d " "
Daughters (up to 18)	2/4d " "

The charges for horse and tractor work were:-

Horse (excluding ploughman)	2/0d per hour
Wheeled tractor (excluding tractorman)	4/3d " "

All materials and other expenses are entered at actual cost.

Share of Farm General Expenses: This charge is inserted to cover the 'overhead' expenses against this crop.

The charge for "Share of Farm General Expenses" (= Overheads) includes an allowance for the depreciation of all the normal machinery. With special machinery an additional depreciation charge was made, based on the probable working life and the hours or acreage of annual usage.

The rent charge is based on the agreed rental value of the field costed.

Unless "full" or "complete" costing of a whole farm is carried out it is not possible to give the exact sum for "Overheads" chargeable against any field or crop on any particular farm. For this reason it is necessary to make this overhead charge at estimated rates obtained from a large sample of the accounts of Scottish farms. The rates used were:-

	Dairy Farms	Other Farms
(a) For each acre costed	11/0d	8/6d
(b) For each £ of farm labour used on the crop	7/6d	7/6d
(c) For "each tractor-equivalent" hour, that is, the tractor hours plus one-quarter of the horse hours worked on the crop	8/6d	5/0d

These three charges, added together, give the item of "Share of Farm General Expenses" ("Overheads").

By means of this, estimated charges are brought into the cost for the following (and other) items:-

(i) 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.

(ii) A share of car running and depreciation.

(iii) A share of miscellaneous farm expenses.

(iv) A share of repairs to buildings, fences and drains.

(v) Shares of implement repairs, rates, insurances and depreciation on tenant's fixtures.

In the case of any particular farm the charge applied by the above method cannot be other than an estimated sum, which may appear to an individual farmer to be too high or too low for his particular circumstances. As the item is shown separately, it can, if desired, be replaced by a personal estimate considered more suitable.

Grass Residues is the charge made against the four crops following a lea, the maximum total charge being £4:12: 0d per acre and this is charged against the four crops following the lea in the proportions of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ and $\frac{1}{8}$.

Residues to Future Crops is the share of 1962 manuring chargeable to future crops.

Residues from Past Crops is the share applicable to the 1962 crop of manurial and grass residues from earlier years.

Calculation of Manurial Residues is based on the publication "Residual Values of Fertilisers and Feeding Stuffs" (Department of Agriculture and Fisheries for Scotland).

TABLE I

OAT CROP OF 1962

AVERAGE COST PER ACRE FOR 29 CROPS - BY STAGES

(Cost figures are in £'s and decimal parts of £'s)

	COMBINE CUT CROPS			
	Grain Acreage of Farm		General Average	BINDER
	Under 50 ac.	Over 50 ac.	Those 21 Crops	CUT CROPS
Number of records	12	9	21	8
Acreage costed - total	142	188	330	95
Av. grain yield/acre (cwt.)	24	25	25	24
Av. straw yield/acre (cwt.)	18	19	19	23
Preparation and Sowing	£	£	£	£
Lime	0.11	-	0.05	0.89
Slag	-	0.44	0.25	-
Fertilisers	1.35	1.02	1.16	1.85
Seed	2.85	2.59	2.70	2.93
Depreciation etc.	0.01	+	0.01	0.12
Farm tractor costs	1.36	1.13	1.23	1.25
Farm labour costs	1.68	1.36	1.50	1.50
Contract work	0.11	0.24	0.18	-
Sub-total A =	7.47	6.78	7.08	8.54
Summer Work				
Materials	0.70	0.44	0.55	0.23
Depreciation etc.	0.12	0.06	0.09	0.05
Farm tractor costs	0.03	0.03	0.03	+
Farm labour costs	0.10	0.04	0.06	0.01
Contract work	0.10	-	0.05	-
Sub-total B =	1.05	0.57	0.78	0.29
Harvesting				
Materials	0.56	0.67	0.63	1.15
Depreciation etc. Combine	1.35	1.34	1.34	1.89
" " Baler	0.82	0.73	0.77	1.11
Farm tractor costs	0.81	0.60	0.69	1.36
Farm labour costs	2.02	1.41	1.67	5.07
Contract work	-	0.56	0.32	-
Sub-total C =	5.56	5.31	5.42	10.58
TOTAL OF A + B + C	£14.08	£12.66	£13.28	£19.41

TABLE I CONTINUED OVERLEAF.

TABLE I (Continued)

	COMBINE CUT CROPS			
	Grain Acreage of Farm Under 50 ac.	Grain Acreage of Farm Over 50 ac.	General Average These 21 Crops	BINDER CUT CROPS
Number of records	12	9	21	8
	£	£	£	£
TOTAL OF A + B + C c.f.	14.08	12.66	13.28	19.41
Drying and Storage				
Materials	0.29	0.28	0.28	-
Depreciation etc. - Drier	0.40	0.46	0.43	-
" Storage Bins	0.21	-	0.10	-
Farm tractor costs	0.08	0.05	0.06	0.02
Farm labour costs	0.25	0.17	0.20	0.10
Contract work	1.14	0.97	1.05	0.50
Sub-total D =	2.37	1.93	2.12	0.62
Dung Application 1962				
Materials	1.60	3.21	2.52	-
Farm tractor costs	0.20	0.45	0.34	-
Farm labour costs	0.29	0.64	0.48	-
Overheads (a)	0.50	1.13	0.86	-
Sub-total E =	2.59	5.43	4.20	-
TOTAL A to E	19.04	20.02	19.60	20.03
Rent charge	2.41	2.38	2.39	2.17
Overheads (b)	6.38	5.27	5.75	7.95
	27.83	27.67	27.74	30.15
Add Past residues (c)	4.34	2.83	3.48	2.54
	32.17	30.50	31.22	32.69
Less Residues to future (c)	1.84	3.27	2.65	1.38
	30.33	27.23	28.57	31.31
Less Credit for Straw	4.33	3.89	4.09	4.48
NET COST PER ACRE: GRAIN	£26.00	£23.34	£24.48	£26.83
NET COST PER TON: GRAIN	£21.35	£18.67	£19.81	£22.70

Notes: (a) Dung application only. (b) Excluding dung application
(c) For details, see Table VI.

TABLE II

OAT CROP OF 1962

AVERAGE COST STRUCTURE PER ACRE FOR 29 CROPS

(Cost figures are in £'s and decimal parts of £'s)

	COMBINE CUT CROPS			
	Grain Acreage of Farm		General Average	BINDER
	Under 50 ac.	Over 50 ac.	These 21 Crops	CUT CROPS
Number of records	12	9	21	8
Acreage costed - total	142	188	330	95
Av. grain yield/ acre (cwt.)	24	25	25	24
	£	£	£	£
Fertilisers (except lime etc.)	1.35	1.02	1.16	1.85
Seeds	2.85	2.59	2.70	2.93
Materials	1.55	1.39	1.46	1.38
	5.75	5.00	5.32	6.16
Farm tractor costs	2.28	1.81	2.01	2.63
Farm labour costs	4.05	2.98	3.43	6.68
Contract work	1.35	1.77	1.60	0.50
	13.43	11.56	12.36	15.97
Deprec. etc. Special Equipment	2.91	2.59	2.74	3.17
	16.34	14.15	15.10	19.14
Rent charge	2.41	2.38	2.39	2.17
Overheads (a)	6.38	5.27	5.75	7.95
	25.13	21.80	23.24	29.26
Dung and application (b)	2.59	5.43	4.20	-
	27.72	27.23	27.44	29.26
Lime	0.11	-	0.05	0.89
Slag	-	0.44	0.25	-
	27.83	27.67	27.74	30.15
Adjustment for residues (c)	(+) 2.50	(-) 0.44	(+) 0.83	(+) 1.16
	30.33	27.23	28.57	31.31
Less Credit for straw	4.33	3.89	4.09	4.48
NET COST PER ACRE: GRAIN	£26.00	£23.34	£24.48	£26.83
NET COST PER TON: GRAIN	£21.35	£18.67	£19.81	£22.70

Notes:
(a) Excluding dung application
(b) For structure see Table I
(c) For structure see Table VI.

TABLE III

OAT CROP OF 1962

COSTS RETURNS AND PROFITABILITY FOR 29 CROPS

(Cost figures are in £'s and decimal parts of £'s)

	COMBINE CUT CROPS			
	Grain Acreage of Farm Under 50 ac.	Grain Acreage of Farm Over 50 ac.	General Average These 21 Crops	BINDER CUT CROPS
Number of records	12	9	21	8
Acreage costed - total	142	188	330	95
Av. grain yield/acre (cwt.)	24	25	25	24
Av. straw yield/acre (cwt.)	18	19	19	23
Costs and Returns - Grain				
Per Acre	£	£	£	£
Value of grain	21.92	22.51	22.25	21.28
Deficiency payments	6.60	6.60	6.60	6.60
Total Revenue	28.52	29.11	28.85	27.88
Net Cost	26.00	23.34	24.48	26.83
SURPLUS	2.52	5.77	4.37	1.05
Per Ton	£	£	£	£
Value of grain	18.00	18.00	18.00	18.00
Deficiency payments	5.42	5.28	5.34	5.59
Total Revenue	23.42	23.28	23.34	23.59
Net Cost	21.35	18.67	19.81	22.70
SURPLUS	2.07	4.61	3.53	0.89

TABLE IV

OAT CROP OF 1962

SOME DRYING AND STORAGE COSTS (including haulage)

(Overheads omitted)

		DRIED BY:- CONTRACT		OWN DRIER
Number of records		7		7
Acreage costed		98		113
Tons dried		115		136
Average yield per acre - cwt.		23		24
Per Acre		£		£
Materials		0.01		0.67
Depreciation - Drier		-		1.02
Storage bins		0.33		-
	Hrs.		Hrs.	
Man Work	(0.79)	0.20	(1.47)	0.37
Tractor work	(0.54)	0.11	(0.40)	0.09
Contract work		3.41		-
TOTAL COST		4.06		2.15
Per Ton		£		£
Materials		0.01		0.56
Depreciation - Drier		-		0.85
Storage bins		0.28		-
	Hrs.		Hrs.	
Man work	(0.67)	0.17	(1.22)	0.31
Tractor work	(0.47)	0.10	(0.33)	0.07
Contract work		2.91		-
TOTAL COST		3.47		1.79

TABLE V

OAT CROP OF 1962

SOME OPERATION COSTS

(Cost figures are in £'s and decimal parts of £'s)

	No. of Records	Operational Acres	Per Operational Acre: Man Hours	Tractor Hours	Cost £
Ploughing: Ex. lea	7	92	4.05	4.05	1.86
All other ploughing	21	322	3.56	3.56	1.65
Harrowing	29	1007	0.39	0.39	0.18
Discing	5	67	0.60	0.60	0.28
Sow fertiliser	9	134	0.34	0.34	0.16
Sow fertiliser and seed	6	78	0.77	0.61	0.31
Sow seed	21	319	0.64	0.49	0.26
Roll	28	456	0.36	0.36	0.17
Spray	9	139	0.32	0.30	0.14
Combine: Tractor drawn: Bagger	9	117	2.86	1.47	1.04
Self-propelled: Bagger	6	90	2.90	-	0.70
Self-propelled: Tanker	4	75	1.01	-	0.26
Haul grain	19	304	1.38	0.92	0.53
Bale straw	20	313	0.73	0.57	0.30
Haul bales	20	313	2.31	1.02	0.79
Cut with a binder	8	95	1.95	1.02	0.68
Stook	8	95	3.60	-	0.82
Lead in stooks	6	69	8.43	2.78	2.46
Thresh with combine	5	67	9.21	2.64	2.51

TABLE VI

MANURIAL AND GRASS RESIDUES

The calculation for the adjustment for residues is shown below:-

	COMBINE CUT CROPS			
	Grain Acreage of Farm		General Average	BINDER
	Under 50 ac.	Over 50 ac.	These 21 Crops	CUT CROPS
Number of records	12	9	21	8
Per Acre				
Add from previous crops:-	£	£	£	£
Dung and application	1.64	0.39	0.92	-
Lime	0.33	0.29	0.31	0.17
Phosphatic	0.31	0.34	0.33	0.55
Potassic	-	0.12	0.07	-
Compounds	1.10	0.69	0.87	0.59
Grass residues	0.96	1.00	0.98	1.23
	4.34	2.83	3.48	2.54
Less to future crops:-				
Dung and application	1.30	2.71	2.10	-
Lime	0.09	-	0.04	0.76
Phosphatic	-	0.22	0.12	-
Potassic	-	-	-	-
Compounds	0.45	0.34	0.39	0.62
	1.84	3.27	2.65	1.38
Net Adjustment to cost	(+) 2.50	(-) 0.44	(+) 0.83	(+) 1.16

STANDARD APPENDIX

In accordance with an agreement among University and College Agricultural Economic Departments, a standard summary of the results is given in the tables in this appendix.

The figures in the tables in this appendix are from twenty-one "Combine-cut" Oat Costings on 330 acres. Money figures are in £'s decimal.

TABLE I

SUMMARY OF AVERAGE COSTS PER ACRE

Items of Cost	Hours	21 COMBINED £
Regular labour	15.92	3.91
Power: tractor	11.05	2.35
Contract services 0.41 man hours; 0.34 tractor hours		1.60
Machinery depreciation and repair allowance		2.74
Other fuel		0.36
Materials: seed		2.70
fertilisers and manures applied		3.98
sundries		1.10
Rent		2.39
Share of general farm expenses		6.61
		27.74
Adjustment for manurial residues		(+) 0.83
Credit value of straw		(-) 4.09
NET COST - Per Acre		24.48
NET COST - Per Ton		19.81

TABLE II

SUMMARY OF AVERAGE YIELDS AND RETURNS

Average Grain Yield per Acre 24.7 cwt.

Average Returns or Estimated Value

	21 COMBINED	
	Per Acre £	Per Ton £
Value of grain	22.25	18.00
Estimated Oat deficiency payment	6.60	5.34
	28.85	23.34
Net Cost	24.48	19.81
MARGIN	4.37	3.53

TABLE III

SUMMARY OF AVERAGE LABOUR AND POWER USED PER ACRE

21 COMBINED

Stage	Hours per Acre			
	Farm Staff	Contract		Tractor
	M.H.	M.H.	T.H.	T.H.
Pre-Harvest	8.26	0.28	0.28	7.48
Harvesting	6.85	0.13	0.06	3.26
Drying and storing	0.81	-	-	0.31
TOTAL	15.92	0.41	0.34	11.05

TABLE IV

SUMMARY OF AVERAGE QUANTITIES OF MATERIALS ETC. USED PER ACRE

21 COMBINED

Material	Acres	Area dressed only	Overall Average per Acre
Seed:			
Home-grown		0.37 cwt.	0.37 cwt.
Purchased		1.34 cwt.	1.34 cwt.
TOTAL		1.71 cwt.	1.71 cwt.
Farm Yard Manure	86.75	10.94 tons	2.88 tons
Slag	26	10.77 cwt.	0.85 cwt.
Lime	17	40.00 cwt.	2.06 cwt.
Compounds	163	2.37 cwt.	1.17 cwt.