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*Silage -
Cost of
Production*

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Bulletin No. 62/EC33

UNIVERSITY OF MANCHESTER
AGRICULTURAL ECONOMICS DEPARTMENT

COSTS OF SILAGE PRODUCTION

1950

Results of an Investigation
in the North-Western Province

June, 1951

RECEIVED

1900

RECEIVED

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I. Introduction

Grass is the crop best adapted to the English climate, and the most efficient utilisation of our leys and meadows is obviously of great importance both from the national standpoint and from that of the individual farmer. The value of grass can be increased if summer surplus is preserved for winter feeding, and for some time silage making has been recognised as one of the most practical methods of achieving this. Silage is comparatively easy to make, need not involve heavy capital expenditure and as a food can supply dairy cows not only with their maintenance requirements but also with part of their production ration. This point has become of greater importance following the increase in the price of concentrates to the farmer. Many farmers have also taken advantage of the high yield of green fodder obtained from oats and tares and similar mixtures by ensiling these crops.

The above considerations justify, we hope, the further investigation into the economics of silage production which this department undertook in the 1950 season.

II. Structure of the Sample

The area of the survey was extended to cover Shropshire, in addition to Cheshire, Staffordshire and East Lancashire which were included in the 1949 silage report. Where two or more fields on one farm received different treatments, each field was costed separately. The distribution of the farms and of the separate costs was as follows:-

County	No. of Farms	No. of Costs	
		Arable	Grass
Cheshire	11	5	11
Lancashire	9	1	10
Shropshire	16	6	15
Staffordshire	11	2	11
Total	47	13	47

Only 7 costs related to silage loaded by manual labour as against 15 in the previous year. This number was considered too small to warrant a sub-division of the costs into "manual" and "mechanical" groups, except in the comparison of "making" costs. (Table III)

III. Growing Costs

Table I sets out the average costs per acre of growing grass and arable crops for silage; these costs were £3.8.9 for grass and £9.14.0 for arable crops. This difference in cost per acre is attributable very largely to two factors: (a) arable crops require a higher outlay on cultivations than does grass; (b) many grass fields were grazed or cut for hay as well as for silage - consequently the silage had to bear only a portion of the growing cost. The high rainfall in the summer of 1950 led to the grass being more abundant than usual and in most cases it was estimated that only one third of the annual grass yield was used up in each cut of silage.

More silage per acre was produced, on the average, from arable crops than from grass. As a result, the difference between the growing costs of arable and grass silage per ton was not so great as the difference between the costs per acre. The arable silage, with an average yield of 7.7t per acre cost £1.5.3 per ton to grow; the average yield of grass was 5.3t per acre, and the growing cost per ton was 12s.8.

Table I

Costs per Acre of Growing Arable and Grass Silage Crops

	<u>Arable</u>			<u>Grass</u>		
Number of Costs	13			47		
Acres Costed	109			723½		
	£	s	d	£	s	d
Manual Labour	1	0	11	0	9	9
Horse Labour	0	2	2	0	2	2
Tractor Labour	1	5	0	0	8	3
Contract Labour		-		0	0	11
Total Labour	2	8	1	1	1	1
Not Manures	2	2	5	2	18	3
Seeds	3	15	11		-	
Establishment of Leys		-		1	6	7
Rent	2	0	8	2	3	4
Gross Cost	10	7	1	7	9	3
<u>Less</u>						
Proportion to Hay or Grazing	0	13	1	4	0	6
Net Cost of growing Silage	9	14	0	3	8	9

Actual costs of cultivations and seeds for laying down leys were obtained in sixteen cases; these are set out in Table II. Ten of the 16 crops, covering 63.5% of the acreage, were sown under a nurse crop and only those cultivations directly connected with the sowing of the grass are included in the costs. The cost of manuring is not included in Table II but is covered by the charge for manures in Table I.

Table II

Ley Establishment Costs (Per Acre)

Code Number	Probable Duration Years	No. of Acres	Manual Labour	Horse Labour	Tractor Labour	Seed	Total Cost					
							Per Acre			Per Acre Per Year		
			£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
S.10*	3	5	0 3 7	0 1 10	-	4 10 0	4 15 5	1 11 10				
S.16 ⁽¹⁾	4	12	1 1 4	0 1 2	1 12 8	4 13 6	7 8 8	1 17 2				
S.4	3	22	0 1 10	-	0 2 11	6 0 0	6 4 9	2 1 7				
S.4	1	28	0 1 10	-	0 2 11	2 0 0	2 4 9	2 4 9				
S.1	1	32	0 13 6	-	0 16 6	1 16 0	3 6 0	3 6 0				
S.28*	3	32	0 4 2	-	0 3 4	4 15 0	5 2 6	1 14 2				
S.64*	4	10	0 3 5	-	0 4 0	4 12 0	4 19 5	1 4 10				
S.74*	1	7	0 5 9	-	0 6 3	2 0 0	2 12 0	2 12 0				
S.756*	2	5	0 4 6	-	0 3 2	3 6 0	3 13 8	1 16 10				
S.80	3	7	0 9 4	-	1 8 0	4 2 10	6 0 2	2 0 1				
S.48	3	8	1 6 5	0 1 9	1 6 0	3 0 0	5 14 2	1 18 1				
S.19*	1	16	0 2 0	-	0 3 6	2 5 0	2 10 6	2 10 6				
S.20	4	9	0 14 0	-	1 4 11	3 10 0	5 8 11	1 7 3				
S.24a	1	11	0 13 4	-	1 3 8	3 2 0	4 19 0	4 19 0				
S.37*	1	3	0 10 6	-	0 18 8	2 10 0	3 19 2	3 19 2				
S.93*	2	10	0 8 0	0 4 2	-	2 15 7	3 7 9	1 13 10				
	-	217	0 7 11	0 0 4	0 10 6	3 8 6	4 7 3	2 0 0				

(*) Ley sown under a nurse crop

(1) Cost of seed for S.16 includes £0.19.5 for weed killer.

IV. Making Costs

The costs and problems involved in growing crops for silage are similar to those involved in growing the same crops for other purposes; in other words, they are not specific to silage production and therefore they

are not discussed in any detail in the present Report. But "making" costs - i.e, the harvesting and carting of the crop, the filling of the silo, and the use of molasses - are an entirely different question. In the actual process of making silage there is as yet no firmly established tradition based on long experience and, consequently, great variations in costs are to be found. It is in this aspect of silage production that the greatest scope for increased efficiency may be expected. Any such improvements should play an important part in reducing the total cost of production since the "making" costs constitute, on the average, 41% of the total cost of grass silage and 24% of the cost of arable silage in the present sample.

Cutting the crop does not present a special problem. Only three farmers included in this survey used a cut-lift, and this type of special machinery, with its high depreciation rate, seems to be limited to large farms and to contract work.

Table III

Labour in Silage Making (Cutting, Carting and Filling Silos) - Average Times and Costs

	ARABLE			GRASS								
				Manual			Buckrake			Loader		
No. of Costs	13			7			11			26		
Acreage	109.0			54.0			131.0			444.75		
Yield per Acre - tons	7.7			3.9			5.1			5.2		
Man Hours:												
Per Acre	18.2			13.5			10.5			17.4		
Per Ton	2.4			3.5			2.1			3.4		
Horse Hours:												
Per Acre	0.7			1.2			1.2			0.3		
Per Ton	0.1			0.3			0.2			0.1		
Tractor Hours												
Per Acre	7.6			4.1			5.3			7.0		
Per Ton	1.0			1.1			1.0			1.4		
	£	s	d	£	s	d	£	s	d	£	s	d
Contract Work												
Per Acre	-			-			0	1	0	0	0	6
Per Ton	-			-			0	0	2	0	0	1
Total Making Labour												
Per Acre	3	10	9	2	7	6	2	7	3	3	4	6
Per Ton	0	9	3	0	12	1	0	9	4	0	12	6

In Table III grass silage costs have been classified according to the

method of collecting the cut crop. No sub-division has been introduced into the arable crops since 11 of the 13 crops were collected by green crop loader, buckrakes being used for the remaining two. The "Contract" column contains only those sums which could not be attributed to manual or other labour for want of information. Charges for the hire of machinery have not been included in this table; these charges and the cost of molasses have been added to the cost of labour to obtain the "Making Cost" figures in Table VII. Costs for individual crops are given in Table VI at the end of this report.

The labour cost per acre for making arable silage was higher than that for making grass silage but, owing to the heavier yield of arable crops, the making cost per ton was lower than that for any method of making grass silage. This fact, together with a study of individual results for all groups, seems to indicate that "making" labour does not increase proportionately with tonnage. In other words, a higher yield does not necessarily require considerably more labour and therefore tends to reduce the cost of labour per ton.

Of the three methods of making silage, the buckrake appears to be the most economical of labour. (Incidentally, it also has a low depreciation rate). With only $10\frac{1}{2}$ hours per acre, buckrake users saved 3 man hours per acre in comparison with those farmers who relied on purely manual labour for collecting the green material, and almost 7 man hours per acre when compared with those using a loader. This saving, however, may be partly offset by the often higher cost of carting the silage from the pit to the cowshed, for the pits are generally dug in the silage field on the farms where a buckrake is used. The "loader" group shows a considerably higher cost of manual and total labour per acre than the "manual" group but the labour per ton is only slightly higher. This is due to the relatively low average yield in the manual group: five of the seven crops in this group were from permanent pasture on the hills of East Lancashire.

V. Yield and Cost of Production

The relationship between yields per acre and costs per ton of grass silage is summarised in Table IV.

Table IV
Distribution of Yields and Costs per Ton

Yield per Acre (Tons)	£0-1	£1-2	£2-3	£3-4	£4-5	£5-6	Over £6	Number per yield group
1 - 1.9	-	-	-	-	-	2	1	3
2 - 2.9	-	1	2	1	1	-	-	5
3 - 3.9	-	4	2	-	-	-	-	6
4 - 4.9	1	8	2	-	-	-	-	11
5 - 5.9	3	3	-	-	-	-	-	6
6 - 6.9	1	4	1	-	-	-	-	6
7 - 7.9	-	3	-	-	-	-	-	3
8 and over	2	4	1	-	-	-	-	7
Number per cost group	7	27	8	1	1	2	1	47

No crop yielding below 4 tons to the acre cost less than £1 per ton. Temporary leys gave rise, on the whole, to higher yields and lower costs per ton than permanent grassland. Some of the highest yields were obtained where more than one cut of silage was taken; making costs were naturally higher in these cases and a smaller proportion (or nothing at all) was deducted for grazing. In arable crops, as in grass, low costs per ton were generally associated with high yields per acre.

Table VII, at the end of this Report, shows the full costs of silage production per acre and per ton for individual crops as well as the average costs.

VI. Wastage

The proportion of wastage in the finished product was estimated on a number of farms, and the results are shown in Table V. In one case the whole contents of a pit were unusable; in several cases (some of them not included in the Table owing to uncertainty as to the actual yield) there was no wastage whatsoever. The higher average percentage of wastage in arable than in grass silage may be due to the greater difficulty in compressing the material, especially where a high proportion of it consists of cereal straw. Most of the cases of high wastage could be traced to insufficient drainage, accentuated by the wet season.

Naturally, the fact that part of the product is unfit for consumption causes an increase in the cost per ton of edible silage e.g. on one farm the cost per ton based on total yield was £2.6.4. There was 5.8% of wastage

and a ton of edible silage cost £2.9.2, or 6.2% more than would have been the case had there been no wastage. (H.B. The percentage to be added to the cost per ton to obtain the cost per edible ton can be calculated from the formula $X = \frac{100W}{E}$, where X = percentage to be added, W = Weight of wastage, E = Weight of edible silage).

Table V

Proportion of Wastage in Silage

<u>Grass Silage</u> Code No.	Type of Container	Total Yield Tons	Amount of Wastage Tons	Percentage of Wastage
S.3	Tower and Pit	96.0	1.6	1.7
S.41	Pit	69.0	4.0	5.8
S.41a	Pit	80.0	5.0	6.2
S.1	Pit	194.5	2.5	1.3
S.93	Pit	80.0	5.0	6.2
S.15	Tower and Pit	210.0	20.0	9.5
S.16	Pit	70.0	5.0	7.1
S.27	Pit	13.0	4.5	34.6
S.28	Pit	202.0	2.0	1.0
S.29a	Stack	13.0	1.5	11.5
S.30	Stack	18.0	1.0	5.6
S.31	Stack	22.0	1.0	4.5
S.32	Stack	15.0	2.0	13.3
S.39	Pit	24.0	8.0	33.3
S.40	Stack	10.0	1.0	10.0
S.56	Pit	60.0	6.0	10.0
S.63	Pit	80.0	5.0	6.2
S.64	Pit	114.0	2.0	1.8
S.68	Pit	45.5	1.5	3.3
S.75a	Pit	180.0	10.0	5.6
S.80	Pit	40.0	7.0	17.5
S.82	Pit	45.0	9.0	20.0
S.86	Pit	21.0	1.0	4.8
S.71	Pit	175.0	10.0	5.7
S.73	Pit	75.0	5.0	6.7
S.74	Pit	31.5	1.5	4.8
S.19	Pit	71.0	6.0	8.4
S.22	Pit	30.0	3.5	11.7
S.24	Pit	64.0	6.5	10.2
S.24a	Pit	30.0	3.0	10.0
S.34a	Pit	44.0	2.0	4.5
S.46	Pit lined with concrete	130.0	3.0	2.3
S.89	Pit	95.0	0.0	0.0
S.94	Pit	105.0	2.5	2.4
Total (34 crops)		2552.5	148.6	5.8
<u>Arable Silage</u>				
S.68a	Pit	59.0	2.0	3.4
S.71a	Pit	75.0	5.0	6.7
S.72	Pit	25.0	1.0	4.0
S.75	Pit	90.0	18.0	20.0
S.86a	Pit	31.0	1.0	3.2
S.33	Pit	47.5	2.5	5.3
S.34	Pit	160.0	4.0	2.5
Total (7 crops)		487.5	33.5	6.9

VII. Farmers Observations

The great majority of the farmers co-operating in the Survey expressed satisfaction with silage as a valuable part of diet of dairy cattle. In most cases it was found that silage making did not interfere with the normal performance of other farm work. Some of the farmers have reduced or altogether cut out hay making in favour of silage, mainly because the latter is much less dependent on weather for its success. Practically all our co-operators emphasised the relish with which dairy cattle eat silage.

Notes of Costing Methods

Labour

The following standard rates were charged:-

Manual Labour	-	2/3d	per hour (except where the farmer indicated a different rate).
Horse Labour	-	1/2d	" "
Tractor Labour			
light tractors	-	3/6d	" "
medium	-	4/0d	" "
track laying	-	4/6d	" "

F.Y.M. produced on the holding was charged at 10/- per ton.

Establishment of Ley cost was taken at £2.4.3 per acre per year where the actual cost could not be ascertained. This figure is an average obtained in a previous investigation.

Miscellaneous and Overheads 10% was added in each case to the sum of growing and making costs. Pits were charged at 10% of the cost of making and later structural improvements, plus the total cost of any current repairs carried out in 1950. Special equipment was charged at 10% of the purchase price; the averages were £4 for buckrakes, £15 for green crop loaders and £40 for cut-lifts.

Yields shown in this report can only be approximate. The farmer's estimate of the quantity fed and the volume of the silage were taken into account in working out the yield figures.

TABLE VI(i)

Silage Making Labour (Cutting, Carting and Filling Silos) - Times & Costs

Code No.	No. of Acres	Yield (tons) Per acre	Man Hours		Horse Hours		Tractor Hours		Making Labour (Total)							
			Per acre	Per ton	Per acre	Per ton	Per acre	Per ton	Per acre			Per ton				
									£	s	d	£	s	d		
<u>I. ARABLE</u>																
S. 7	6.0	10.0	18.5	1.8												
S. 8	11.0	10.9	20.9	1.9			6.3	0.6	3	2	4		6		3	
S. 12	4.5	1.6	7.8	5.0			6.7	0.6	3	13	11		6		9	
S. 12b	5.0	8.8	15.2	1.7			7.8	5.0	2	8	8	1	11		3	
S. 12c	5.0	11.2	25.6	2.3	3.2	0.4	11.6	1.3	4	5	2		9		8	
S. 68a	11.0	5.4	33.7	6.3	9.6	0.9	12.8	1.1	6	0	0		10		9	
S. 71a	10.0	7.5	31.8	4.2			11.9	2.2	6	3	6	1	3		0	
S. 72	4.0	6.2	19.0	3.0	2.0	0.3	11.0	1.5	5	15	7		15		5	
S. 75	11.0	8.2	12.2	1.5			6.2	1.0	3	10	0		11		2	
S. 53a	8.5	7.4	9.9	1.3			5.8	0.7	2	10	8		6		2	
S. 86a	5.0	6.2	12.1	1.9			4.9	0.7	2	2	0		5		8	
S. 33	8.0	5.9	18.5	3.1			7.9	1.3	2	18	11		9		6	
S. 34	20.0	8.0	10.5	1.3			7.1	1.2	2	17	8		9		8	
							4.3	0.5	2	1	0		5		1	
Total	109.0															
Average		7.7	18.2	2.4	0.7	0.1	7.6	1.0	3	10	9	0	9		3	

TABLE VI (ii)

	Code No	No of acres	No of Cuts	Yield (tons)		Man Hours		Horse Hours		Tractor Hours		Contract Work				Total Making Labour			
				Per acre	Per Acre	Per ton	Per Acre	Per ton	Per Acre	Per ton	Per Acre	Per Acre s d	Per ton s d	Per Acre s d	Per ton s d	£ s d	£ s d	£ s d	£ s d
II Grass- Manual	S. 93	10.0	1	8.0	14.2	1.8			7.4	0.9						3 1 7		7 8	
	S. 29a	2.0	2	6.5	18.5	2.8	1.0	0.2	5.0	0.8						3 2 9		9 8	
	S. 29	5.0	1	7.9	20.2	2.6	1.0	0.1	4.8	0.6						3 5 10		8 4	
	S. 30	9.0	1	2.0	8.6	4.3	0.8	0.4	3.9	1.9						1 15 10		17 11	
	S. 31	10.0	1	2.2	11.0	5.0	4.0	4.0								1 9 5		13 4	
	S. 32	10.0	1	1.5	16.7	11.1			5.5	3.7						2 15 5	1	16 11	
	S. 39	8.0	1	3.0	12.1	4.0	1.1	0.4	3.2	1.1						2 0 5		13 6	
Total Average		54.0		3.9	13.5	3.5	1.2	0.3	4.1	1.1						2 7 6		12 1	
III Grass- Buckrake	S. 10	8.0	2	11.1	8.0	0.7			4.0	0.4	15 9 1 5	2 9 9						4 6	
	S. 27	3.0	1	4.3	23.3	5.4			8.3	1.9		4 5 10						19 10	
	S. 28	32.0	1-2	6.3	8.6	1.4			5.1	0.8		2 0 0						6 4	
	S. 40	8.0	1	1.2	19.4	15.5	19.4	15.6				3 6 4	2					13 1	
	S. 56	11.0	1	5.4	6.1	1.1			3.9	0.7		1 9 2						5 4	
	S. 38	12.0	1	4.8	8.4	1.7			7.7	1.6		2 9 11						10 4	
	S. 63	18.0	1	4.4	8.6	1.9			4.8	1.1		1 18 3						8 8	
	S. 53	7.0	2	6.9	14.6	2.1			7.1	1.0		3 1 4						8 10	
	S. 74	13.5	1	2.3	10.7	4.6			5.4	2.3		2 5 10						19 8	
	S. 22	5.5	1	5.5	19.5	3.6			12.9	2.4		4 15 5						17 6	
	S. 34a	13.0	1	3.4	10.3	3.0			4.5	1.3		2 1 5						12 3	
Total Average		131.0		5.1	10.5	2.1	1.2	0.2	5.3	1.0	1 0	2 2 7 3						9 4	

IV Grass- Loader	S. 7a	20.0	1	4.0	10.0	2.5			4.0	1.0		1	16	0	9	0	
	S. 12a	4.0	1	1.5	18.0	12.0	4.0	2.7	11.0	7.3		4	8	7	2	19	1
	S. 41	30.7	1	2.2	10.1	4.5			5.0	2.2		2	2	9	19	0	
	S. 41a	22.0	1	3.6	16.2	4.4			7.9	2.2		3	7	11	18	8	
	S. 15	27.5	2-3	7.6	21.7	2.8			8.9	1.2		4	4	7	11	1	
	S. 16	12.0	2	5.8	17.3	3.0			8.7	1.5		3	12	10	12	6	
	S. 49	15.0	1	5.0	10.3	2.1			3.0	0.6		1	15	3	7	1	
	S. 51	5.0	1	5.5	16.4	3.0			3.9	0.7		2	12	5	9	6	
	S. 64	17.0	1	6.7	9.9	1.5			6.9	1.0		2	10	2	7	6	
	S. 68	11.0	1	4.1	29.4	7.1	1.1	0.3	9.7	2.3		5	6	3	1	5	8
	S. 80	10.0	1	4.0	11.6	2.9			5.6	1.4		2	8	6	12	2	
	S. 82	5.0	2	9.0	21.4	2.4			8.4	0.9		4	1	9	9	1	
	S. 48	47.0	1	5.3	13.9	2.6			5.6	1.1		2	13	10	10	1	
	S. 86	7.0	1	3.0	5.8	1.9			3.8	1.3		1	8	1	9	4	
	S. 71	25.0	1	7.0	31.1	4.4			12.2	1.7		5	18	8	16	11	
	S. 73	18.0	1	4.2	6.2	1.5	2.7	0.6	2.7	0.6	8	11	2	2	1	8	9
	S. 75a	17.0	3	10.6	21.6	2.0			8.9	0.8		4	4	1	8	5	
	S. 19	16.0	1	4.4	10.5	2.4			4.2	1.0		2	0	8	9	2	
	S. 20	36.0	1	4.2	15.1	3.6			9.3	2.2		3	11	4	17	1	
	S. 24	13.0	1	4.9	7.8	1.6			5.1	1.0		1	17	11	7	8	
	S. 24a	11.0	1	2.7	9.3	3.4			6.0	2.2		2	4	10	16	5	
	S. 44	16.0	1	3.9	15.2	3.9			6.5	1.6		3	0	4	15	4	
	S. 37	8.0	1	3.7	14.2	3.8			7.6	2.0		3	2	6	16	8	
	S. 46	14.5	1	9.0	16.8	1.9			16.4	1.8		5	3	6	11	7	
	S. 89	20.0	1	4.7	7.7	1.6	2.2	0.5	6.2	1.3	2	3	6	2	8	10	2
	S. 94	17.0	1	6.2	39.5	6.4			4.9	0.8		5	15	4	18	8	

Total Average	444.75			5.2	17.4	3.4	0.3	0.1	7.0	1.4		6		1	3	4	6	12	6
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V Grass- Cutlift	S. 3	12.0	2	8.0	32.8	4.1			11.7	1.5		5	14	8	14	4
	S. 4	50.0	4	8.0	18.0	2.3			8.0	1.0		3	17	0	9	8
	S. 1	32.0	3	6.1	12.5	2.1			8.6	1.4		3	2	6	10	3

TABLE VII

Costs of Silage Production for Individual Crops

(a) Grass

Code No.	Acres	Yield Per Acre (tons)	Per Acre						Per Ton					
			Growing Cost			Making Cost			Misc. & Overheads			Total Cost		
			£	s	d	£	s	d	£	s	d	£	s	d
S. 3	12.0	8.0	4	18	0	6	3	6	1	6	0	12	7	6
S. 7a	20.0	4.0		14	5	2	1	0		15	5	3	10	10
S. 10	8.0	11.1	3	9	10	3	2	3	1	9	7	8	1	8
S. 12a	4.0	1.5	2	8	5	4	8	7	1	10	4	5	7	4
S. 41	30.75	2.2	2	0	6	2	9	7		13	11	5	4	0
S. 41a	22.0	3.6	2	1	0	3	17	8		18	9	6	17	4
S. 4	50.0	8.0	7	2	2	4	2	9	2	6	4	13	11	3
S. 1	32.0	6.1	6	8	6	3	5	0	2	18	1	12	11	7
S. 93	10.0	8.0	3	1	0	3	13	6		14	10	7	9	5
S. 15	27.5	7.6	4	16	0	4	8	2	1	15	11	11	0	1
S. 16	12.0	5.8	3	2	4	4	5	0	1	6	5	8	13	8
S. 27	3.0	4.3	2	6	2	4	5	10	2	4	10	3	16	10
S. 28	32.0	6.3	3	17	4	2	7	0		15	10	7	0	1
S. 29	5.0	7.9	3	18	3	3	14	10		16	0	8	9	1
S. 30	9.0	2.0	5	14	6	1	16	4		17	3	8	8	1
S. 29a	2.0	6.5	4	1	5	3	7	9		14	11	8	4	2
S. 31	10.0	2.2	1	7	10	1	16	1		7	3	3	11	2
S. 32	10.0	1.5	4	10	6	2	16	4		16	3	8	3	6
S. 39	8.0	3.0	3	16	11	2	0	5		13	8	6	11	0
S. 40	8.0	1.2	3	11	4	3	12	8	1	5	5	8	1	2
S. 56	11.0	5.4	2	3	2	1	18	3		16	4	17	9	5
S. 38	12.0	4.8	1	16	4	2	11	8	1	1	10	4	5	8
S. 49	15.0	5.0	1	0	9	1	18	7	1	6	9	4	6	1
S. 51	5.0	5.5	1	18	4	2	12	5	3	11	1	8	1	9

S. 63	18.0	4.4	2	17	0	1	18	3		16	6	5	11	10		12	10		8	8		3	8	1	5	2
S. 64	17.0	6.7	2	1	11	2	10	2	1	9	1	6	1	0		6	3		7	6		4	4	1	18	0
S. 68	11.0	4.1	3	4	7	5	6	3	2	1	7	10	12	5		15	7	1	5	6		10	1	2	11	4
S. 80	10.0	4.0	1	15	0	3	1	6	1	19	8	6	16	2		8	9		15	5		9	11	1	14	0
S. 82	5.0	9.0	4	13	1	5	1	9	3	19	6	13	14	4		10	4		11	4		8	10	1	10	6
S. 53	7.0	6.9	5	11	3	3	1	4	1	2	8	9	15	3		16	1		8	10		3	3	1	8	2
S. 48	47.0	5.3	1	10	6	2	13	10		15	5	4	19	9		5	9		10	1		2	11	1	18	9
S. 86	7.0	3.0	2	6	5	1	8	1	1	9	5	5	3	11		15	6		9	4		9	9	1	14	7
S. 71	25.0	7.0	1	12	6	6	0	8	1	6	3	8	19	5		4	8		17	3		3	9	1	5	3
S. 73	18.0	4.2	2	19	1	3	5	11	1	13	11	7	18	11		14	2		15	10		8	1	1	16	1
S. 74	13.5	2.3	3	17	10	3	3	7	1	3	0	8	4	5	1	13	4	1	7	3		8	10	3	10	6
S. 75a	17.0	10.6	15	10	9	4	15	11	2	2	0	22	8	8		9	4		9	1		4	0	2	2	5
S. 19	16.0	4.4	2	9	0	2	0	8	1	9	7	5	19	1		11	0		9	2		6	8	1	16	10
S. 20	36.0	4.2	2	1	7	3	14	3	1	0	4	6	16	2		10	0		17	10		4	11	1	12	8
S. 22	5.5	5.5	1	16	10	5	13	8	1	11	5	9	1	10		6	9	1	0	10		5	9	1	13	4
S. 24	13.0	4.9	2	8	3	2	4	11	1	3	11	5	17	1		9	10		9	1		4	10	1	13	9
S. 24a	11.0	2.7	3	19	10	2	13	0	1	10	7	8	3	6	1	9	3		19	5		11	2	2	19	11
S. 34a	13.0	3.4	2	15	3	2	1	5		12	11	5	9	5		15	4		12	3		3	10	1	12	4
S. 44	16.0	3.9	2	0	6	3	6	7	2	6	6	7	13	7		10	4		16	11		11	10	1	19	1
S. 37	8.0	3.7	3	1	0	4	12	0		17	1	8	10	1		15	3	1	4	6		4	7	2	5	4
S. 46	14.5	9.0	3	15	2	5	16	11	1	11	3	11	3	4		8	5		13	0		3	6	1	4	11
S. 89	20.0	4.7	1	16	9	3	3	3	1	8	4	6	8	4		7	9		13	4		6	0	1	7	1
S. 94	17.0	6.2	1	5	3	5	15	4	1	13	11	8	14	6		4	1		18	8		5	6	1	8	3

Total	723.75																									
Average		5.3	3	8	9	3	7	11	1	7	11	8	4	7		12	10		12	8		5	3	1	10	9

TABLE VII

Costs of Silage Production for Individual Crops(b) Arable

Code No.	No. of Acres	Yield Per Acre (tons)	Per Acre												Per Ton											
			Growing Cost			Making Cost			Misc.& Overheads			Total Cost			Growing Cost			Making Cost			Misc.& Overheads			Total Cost		
			£	s	d	£	s	d	£	s	d	£	s	d	£	s	d	£	s	d	£	s	d	£	s	d
S. 7	6.0	10.0	8	10	0	3	16	0	2	10	11	14	16	10	17	0	7	7	5	1	1	9	8			
S. 8	11.0	10.9	15	17	2	4	12	2	3	8	3	23	17	5	1	9	1	8	6	6	3	2	3	9		
S. 12	4.5	1.6	3	4	11	2	8	8		15	9	6	9	4	2	1	9	1	11	3	10	2	4	3	2	
S. 12b	5.0	8.8	16	18	5	4	5	2	4	8	9	25	12	4	1	18	6	9	8	10	1	2	18	3		
S. 12c	5.0	11.2	17	17	2	6	0	0	4	0	1	27	17	4	1	11	11	10	9	7	2	2	9	9		
S. 68a	11.0	5.4	8	3	4	6	3	6	2	15	11	17	2	9	1	10	5	1	3	0	10	5	3	3	11	
S. 71a	10.0	7.5	11	9	5	5	15	7	2	13	3	19	18	3	1	10	7	15	5	7	1	2	13	1		
S. 72	4.0	6.2	4	5	10	4	5	1	2	0	7	10	11	6		13	9	13	7	6	6	1	13	10		
S. 75	11.0	8.2	7	19	3	2	19	9	1	15	7	12	14	8		19	6	7	4	4	4	1	11	1		
S. 53a	8.5	7.4	9	17	8	2	2	0	1	10	9	13	10	5	1	6	8	5	8	4	2	1	16	6		
S. 86a	5.0	6.2	7	17	10	2	18	11	3	4	10	14	1	7	1	5	5	9	6	10	5	2	5	5		
S. 33	8.0	5.9	9	7	3	3	10	2	3	3	3	16	0	8	1	11	6	11	10	10	8	2	14	0		
S. 34	20.0	8.0	6	16	2	2	1	0	1	0	3	9	17	4		17	0	5	1	2	6	1	4	8		
Total Average	109.0	7.7	9	14	1	3	15	9	2	7	5	15	17	3	1	5	3	9	10	6	2	2	1	3		



