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*Cost of
Production*

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CROP COSTS

1942 — 1946

by

A. J. WYNNE, B.Sc. (Agric.), N.D.A.

The University of Nottingham, School of Agriculture.
Agricultural Economics Department.

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FOREWORD.

During recent years agricultural economists in the United Kingdom have used a considerable part of their resources in finding out the costs of producing different farm commodities. The exact connotation of the word "costs" has varied at different times and in different places. Sometimes the word has been limited to those expenses directly attributable to the product in question while at others an attempt has been made to allocate to the product a share of the general farm expenses. In some cases stock feed grown on the farm has been charged to the livestock at cost, in other cases at feeding value and in yet others at market price. A variety of methods has been used in debiting the costs of such items as tractor power and horse labour. Other examples of variability could be cited, all of them sounding a warning note about the uses to which commodity costs should be put.

Commodity costs have come into particular prominence with the adoption of the price review system of fixing agricultural prices and all kinds of erroneous ideas have gained currency about the way in which they are used. In some quarters they have been lauded as the only practicable basis for price fixing in a planned economy and in others they have been damned as a most dangerous and misleading guide. The real truth of the matter lies between these two extreme views. Commodity costs are essential for the price review system but, and it is most important to appreciate this, prices are not fixed on the basis of cost of production. The information is used to provide a rough indication of changes and variations in costs, but more important than this is the light it throws on the farming structure and on the importance of different items of cost in the production of the many farm commodities which have to be considered.

The costings data have a value, however, apart entirely from their use for price review purposes. The farmer's main objective is to maximise the net income from the farm as a whole. He usually realises, often instinctively rather than as a result of formal mathematical demonstration, that maximum over-all income is by no means necessarily co-incident with minimum unit commodity costs. As long as this is borne in mind a careful study of commodity costs can be of great value for farm management purposes. Average

figures have their value in indicating the general position in a particular area and so crystallising opinions which only too often are vague about what is or is not a reasonable expense to incur on a particular input item. But it is a study of the figures relating to single farms or to a series of farms all working in the same environment which is most useful to the farmer, particularly if he has figures of his own which he can use to relate his own experiences to those of other farmers.

It is with the object of enabling comparisons of this kind to be made that the costings data collected from farms in the East Midland Province during the years 1942 to 1946 have been gathered together in this report. Care has been taken to describe the areas from which the figures have been collected and to indicate the years to which the various costings relate. This will enable anyone using the figures for farm management purposes to make adequate allowances both for environmental conditions and for the rapid price changes that have occurred.

In reading the report it should be remembered that the data were collected as part of a national investigation. No attempt was made in any one Province to collect costs of all commodities produced in the Province or to cover all areas growing particular commodities.

The data are merely an indication of the position of some commodities, in some areas for some years. They are not exhaustive in any sense, but properly interpreted they have considerable value and they are presented in report form to facilitate such use as can be made of them.

WILLIAM E. HEATH,
Provincial Agricultural Economist.

A SUMMARY OF THE NUMBERS OF CROP COST RECORDS
OBTAINED FOR THE SEPARATE ENQUIRIES
INCLUDED IN THIS REPORT,

The East Midland Province served by the Agricultural Economics Department includes the counties of Leicestershire, Nottinghamshire, Derbyshire and Rutland, and the Kesteven and Lindsey divisions of Lincolnshire. In the table below the crop cost records are analysed for each crop year by year, together with a note of the counties from which the records for each enquiry were obtained.

Crop.	Year.	Number of Records.	Counties.
Wheat	1942	12	Lincolnshire Lincolnshire Lincolnshire and Leicestershire.
	1943	10	
	1946	35	
Barley	1942	36	} Lincolnshire.
	1943	32	
	1944	24	
Potatoes	1944	22	} Lincolnshire
	1946	35	
Sugar Beet	1945	23	Lincolnshire
Vegetable Crops			
Carrots	1943	20	} Nottinghamshire and Lincolnshire
Peas	1943	25	} Nottinghamshire Derbyshire Leicestershire and Lincolnshire
Savoys	1942-43	25	
	1943-44	12	
Spring Cabbage	1942-43	15	Nottinghamshire and Lincolnshire
TOTAL RECORDS	1942-46	326	—

INTRODUCTION.

The Department of Agricultural Economics is concerned with the varied economic problems affecting the farming industry, and investigation of many of these problems involves the separate study of the major farm enterprises. These enterprise studies, apart from their direct value to the farmer, have assumed considerable practical importance during the period in which price controls have operated. In fixing prices of farm products successive governments have been concerned to maintain a level of farm receipts which would enable farmers to pay the higher wages fixed by the Agricultural Wages Board and also to provide the necessary capital for investment in additional machinery and farm equipment. Enterprise costs do not, and are not intended, to provide data regarding the profits accruing to the whole farm which is an integrated total of the separate enterprises. Nor are they intended to provide evidence of costs for the purpose of fixing prices. They do, however, provide valuable information on the structure of costs, that is, on the relative importance of each of the cost items in the enterprise, which makes it possible to forecast how changes in costs will affect different types of farms. They can be used, and are in fact used to ensure that when price changes become necessary as a result of increased costs the changes are made in such a way as to give, as far as is possible and necessary, increased returns to meet the increased costs.

The purpose of this report is to present the data which have been collected by the Department for sale crops produced during the four crop years 1942—46. Brief reports of these enquiries were prepared and circulated to co-operating farmers but have not been made available to the wider public.

Most of the information has been drawn from a number of "farming type" areas. In each of these areas there is a considerable degree of uniformity of farming system which is based largely on the natural conditions of soil and climate. A description of the areas is given in the report and it will be seen that for most of the crops both good land and poor land are included although no conscious effort was made to secure an adequate representation of all types of soil. Most of the records were obtained in Lincolnshire largely because this county comprises the most important area of arable farming in the Province.

It will be noted the areas covered by the individual investigations represent only a relatively small part of the East Midland Province and the results do not represent conditions in the Province as a whole. In fact, generalisation about the Province would be very difficult because the range in soil type and fertility is extremely wide. Some of the best arable land in the country is to be found in the fens, and some of the worst on the Nottinghamshire sands, while the grassland ranges in quality from the first class fatting pastures of the Welland valley to the hill grazings of Derbyshire.

The most important cash crops grown in the province are all included in this report ; they are wheat, barley, potatoes and sugar beet. In addition reference is made to smaller investigations into the costs of growing savoys, spring cabbage, carrots and green peas.

In most cases the growing costs were based on actual records kept by the individual farmers of the time taken in performing the different operations. Manual labour was charged at cost on the individual farms but tractor and horse labour were charged at average costs based on the most recent information available at the time of analysis. Greater accuracy would have been possible if the charges for horses and tractors had been based on the actual costs on each farm but this would have required a considerable addition to the work. However, any errors arising from this cause are not serious as in most cases a large change in the charges for horse and tractor work would have been necessary to effect even a small change in the final total cost per unit of crop. For example, in 1942 a rise of 50% in the charges for horses and tractors would increase the final costs of production of wheat and barley by less than four per cent.

Certain conventions have been adopted in the case of other charges, which are detailed in the appendix. Standard charges have been used for the evaluation of the manurial residues and cultural residues which are chargeable to the costed and subsequent crops. It is impossible to measure the actual manurial residues left in the soil which will depend on the type of soil, rainfall, drainage and crop yields of the individual field. The calculation of cultural residues in each particular case would have involved considerably more work and would still have been to some extent estimates of the value of the benefits or charges to be made. The use of these standard charges is justified by the fact that without their use important items of cost would have had to be omitted. They are intended to represent average values, and should be treated with care when applied to particular cases.

LIMITATIONS OF THE COSTINGS.

All the information included in this enquiry is subject to a number of limitations. Overhead costs have been excluded throughout because of the lack of data on this subject. Similarly, no charge has been made for the use of implements other than the tractors themselves, and with the increase in mechanisation and in the cost of new implements this must now represent an important item. Both new and secondhand implements have been expensive, replacements have been difficult to obtain, and repairs have been costly. Some idea of the changes in costs of maintaining the farm equipment and increasing mechanisation can be gained from the figures given below for groups of farms in five different areas of the Province.

TABLE 1.
AVERAGE ANNUAL EXPENDITURE ON REPAIRS AND
NEW EQUIPMENT IN DIFFERENT AREAS IN 1936-40
and 1941-44.

AREA.	Expenditure in £ per 100 acres:			
	Repairs.		New Equipment.	
	1936-40	1941-44	1936-40	1941-44
Lincolnshire Wolds	£ 34	£ 72	£ 32	£ 73
Trent Warps	60	110	76	113
Lindsey Limestone	29	70	39	64
Kesteven Limestone	26	61	45	93
Nottinghamshire Sand	18	49	32	69

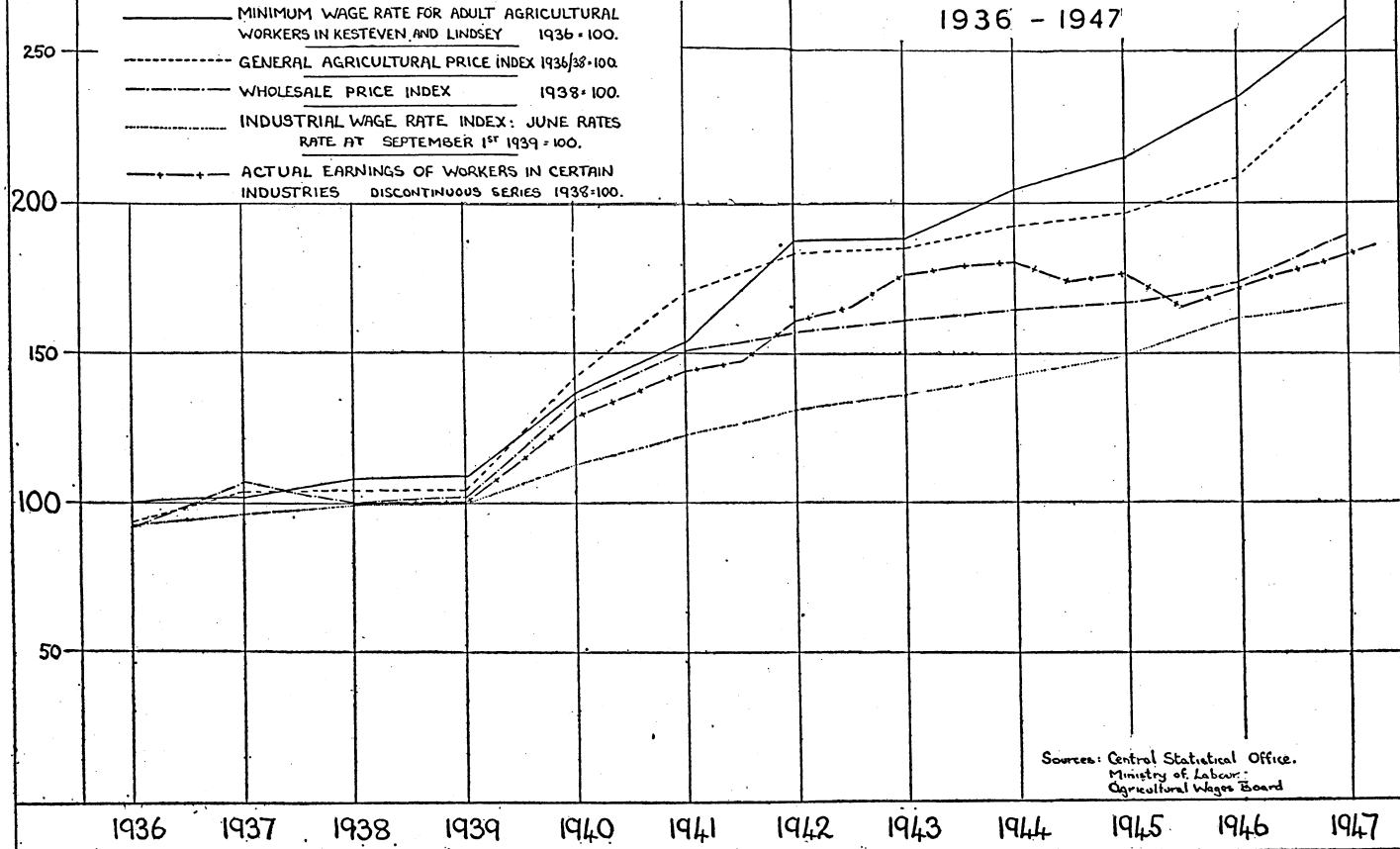
The figures for new equipment cover both replacements of worn out implements and expenditure on increased mechanisation. In view of the changing conditions that have existed since 1939, and bearing in mind the meagre data at present available on the actual life of implements it was considered inadvisable to include as costs wear and tear allowances permitted by H.M. Inspector of Taxes or to attempt to estimate the charges to be made against individual crops.

A word of warning on the interpretation of average cost may be made here. Generally speaking the average costs are representative of actual conditions when the methods of crop production are reasonably uniform throughout the sample. Where methods are variable the average may not correspond to any known case. For example, in a particular group of costings one or two cases may include heavy dressings of farmyard manure to a crop while the others include only artificials. The average will show a small charge for the manure corresponding to a small "average dressing" which does not occur in the sample and is probably rare in the universe.

CHANGING CONDITIONS AND INFLATION.

During the period covered by these statements wages and prices were rising and the value of money was falling. These changes are clearly shown in the charts. The wholesale price index probably gives a fair picture of the general increase in prices which has taken place since 1939, but it must be emphasised, and will be shown later, that changes for different commodities have been widely divergent. In general prices rose rapidly in 1940 and 1941 and since then have been rising slowly but steadily. Agricultural prices, as reflected in the agricultural price index, rose more than the average in the early part of the war and have remained at a high level since then. In contrast with the wholesale price index, the agricultural index showed a further sharp rise in 1947. The index will show a further rise in 1948 as a result of the increased guaranteed prices of the major items of agricultural output.

CHART I

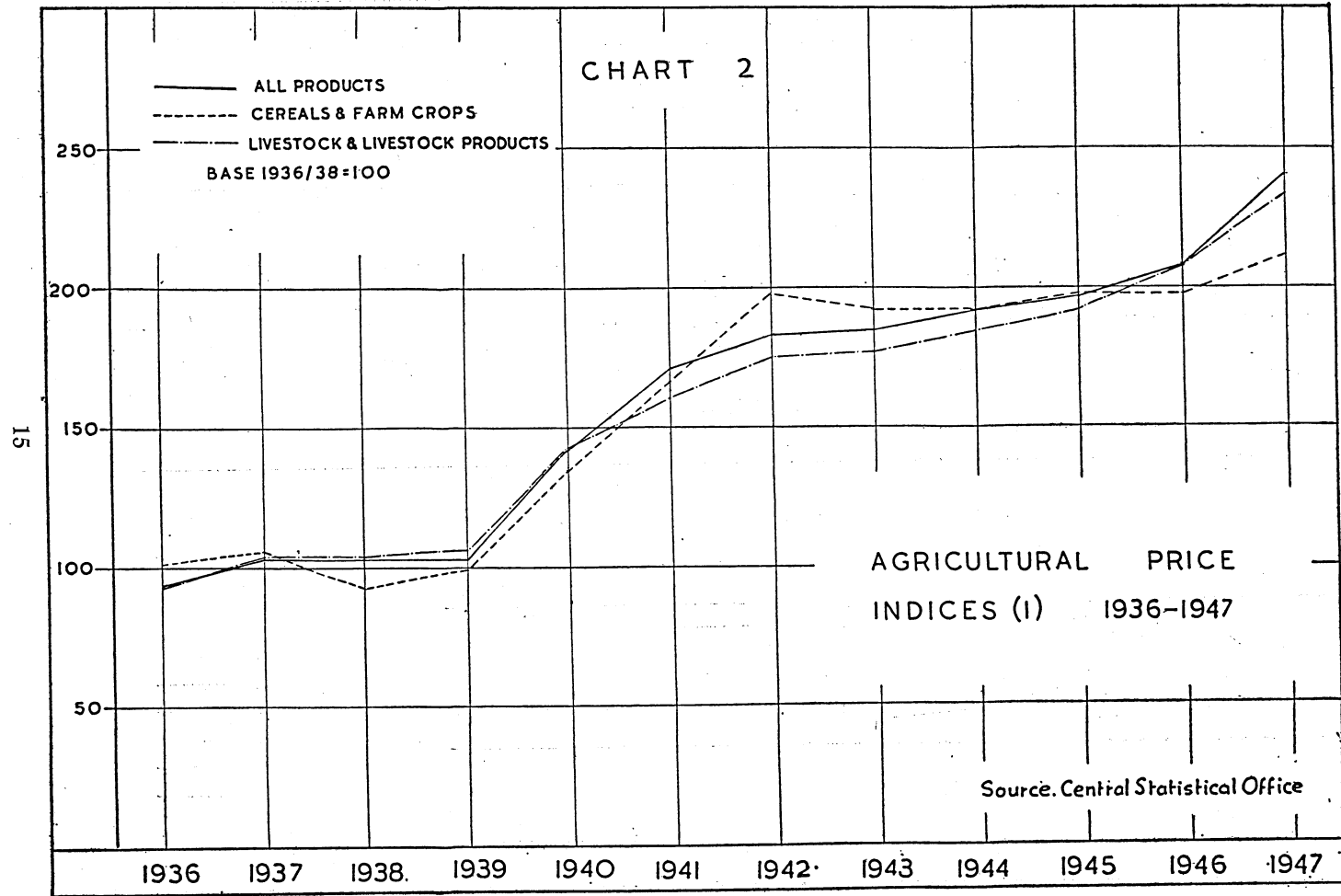
CERTAIN PRICE INDICES
1936 - 1947

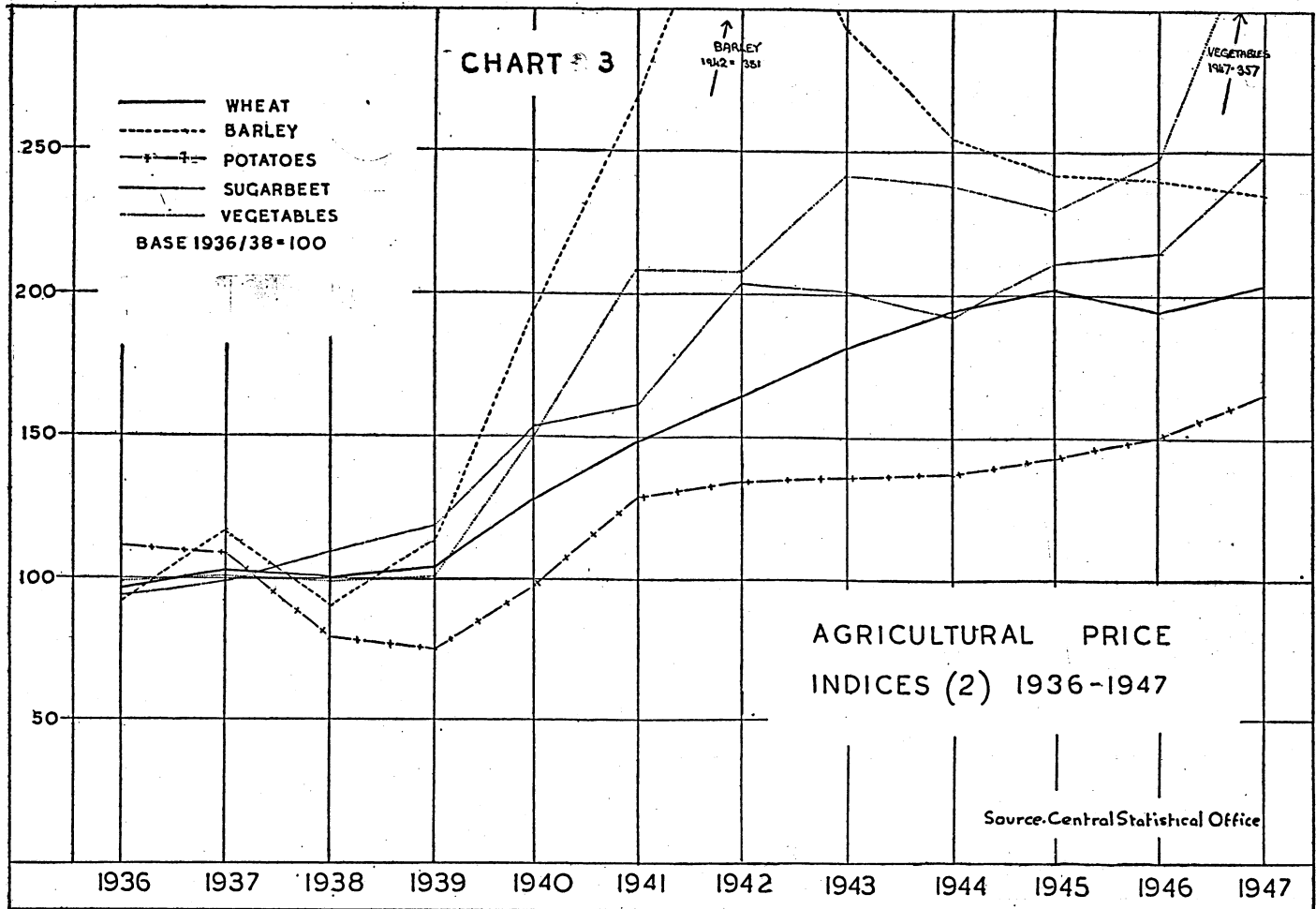
Cost of manual labour forms an important part of the expenses of farming and a particularly important part of the costs of growing crops. Information on the actual earnings of farm workers indicates a fairly close relationship between earnings and statutory minimum rates. Before the war wages were very low and it is not surprising that, under conditions which have compelled the succeeding governments to encourage agricultural production, the rates have risen even more than agricultural prices. The index of the agricultural wage rate as shown in Chart 1 for 1947 is based on a rate of 80s. 0d. per week for eight months and a rate of 90s. 0d. per week for the remainder of the year. Assuming that no further changes occur the index for 1948 will be 282. This does not give a measure of the cost of labour during the period covered by the chart. An index of labour costs would need to take account of changes not only in rates of earnings but changes in numbers and class of workers and of hours of work. The fact that wage rates have risen more than prices does not mean that profits have not risen. There has been relatively less increase in expenditure on items other than labour, increased mechanisation has resulted in a more efficient use of resources and grass land has been more effectively utilised. These factors together have resulted in a rise in profits which is probably greater in proportion than the rise in wage rates.

Chart 1 also shows indices of general wage rates and earnings based on information published by the Ministry of Labour and National Service. During the early years of the war improvements in wages rates lagged behind those of prices but in recent years the former have shown the greater increases. Apart from the middle-war years the movements of industrial earnings have been of the same order as those of wholesale prices.

Chart 2 shows the movement of prices of sale crops, of live-stock and livestock products, and of the general index of agricultural products (which includes fruit and vegetables). The trend of both crop and livestock prices followed the same general course, and since these items cover the greater part of the total agricultural produce the pattern of the general index is very similar. By 1939 some form of price guarantee or subsidy was in operation for the main cash crops wheat, barley, oats and sugar beet. Potato prices were maintained to some degree by the use of the restrictive powers of the Potato Marketing Board, but, although after the establishment of the Board prices improved, it was unable to prevent wide fluctuations from year to year.

In spite of the various aids the arable acreage continued to decline up to 1939, indicating that farmers were not receiving sufficient incentive to maintain crop production. The decline was not due to greater profits resulting from livestock at this time, but was an attempt to cut expenses, and was frequently a method of continuing in business when capital resources had fallen as a result of continued losses. It is true that dairy farmers were relatively well placed as a result of the operations of the Milk Marketing Board and although profits from milk were small, income was regular. Fat cattle, too,





were subsidised but in general livestock prices were low. After 1939 milk production had a high priority but, in order to conserve shipping space it was considered necessary to restrict imports of animal feeding stuffs, to grow the maximum of wheat, potatoes, sugar beet and vegetables at home, and to use the available ships for the import of essential supplies of meat, sugar, wheat and flour. As an incentive to increased production of crops for direct human consumption prices of livestock were not allowed to rise as fast as those of crop prices and the livestock price index remained at a lower level than the crop price index from 1941 to 1945. But subsequently the emphasis changed and in both 1946 and 1947 the price index for livestock was greater than the corresponding crop index.

Examination of the price indices of the individual crops in Chart 3, shows that these have varied in a rather erratic way. Barley prices were allowed to soar to phenomenal heights and they were only brought under control in 1943, with an annual reduction in each of the following years. Vegetable prices have never been more than partially controlled and the rise has been great. The movement of the vegetable index has been considerably affected by fluctuations in supply which is a normal feature of these crops. Prices of wheat and sugar beet have been allowed to increase steadily to more than double their pre-war level. The index of potato prices lags well behind. This is because potato prices, prior to 1939, fluctuated widely from season to season depending on the supply position, and the base years 1936-38 include two seasons in which prices were high. Had a longer base period have been chosen the graph would have indicated more clearly the average price increases compared with the period prior to 1939.

The effects of the inflationary trend are well known. Increasing prices normally result in increased profits, particularly in agriculture, because of the greater period of time which elapses between the incurring of expenses and the return through the sale of the product. Increasing prices also involve increased capital investments in the enterprise. With the evolution of the price review mechanism by which prices are fixed in advance there has been a tendency for the cost-profit relationship to become upset. A rise in costs may precede a rise in prices, since the prices have been fixed in relation to existing costs. Special price reviews are held under such circumstances and the special problems created by substantial cost changes have been recognised in the agreement of November 1946, between the government and the farmers' unions, " that so far as special reviews are concerned special consideration will be given to the consequences of the time-lag if the change in costs is so substantial as to prejudice materially the capacity of the industry to finance production . . . "

It is obvious that the capital requirements of all types of farms have risen very considerably since 1939. Not only has the cost of machinery increased but the wage bill has trebled. The shortage of labour, and its high price, have made necessary increased investment in tractors and other implements and machines. The government's

ploughing-up campaign and the successful drive for increased arable production were only possible because farmers were allowed to make considerable profits on their farms, out of which to pay the continually increasing prices for the different items which make up the total farm expenditure.

During this period, therefore, an estimate of a farmer's profit is widely different from an estimate of cash income. Only a part of the profit shown in the farm accounts has been available for personal expenditure, the balance being absorbed into the farming business as fixed and working capital. In addition, of course, the farmer's personal income has had to increase for it to be possible for him to maintain his previous standard of life at a time when the cost of the necessities and pleasures of life has increased. In practice many farmers have realised that much of the profit is to be found in the steadily increasing valuations of crops and livestock on the farm at the end of a year's working. They have found that in spite of the profits shown by their accounts year by year their bank balances have not shown a corresponding increase. On some farms the cash position is little better than it was a few years ago, although the quantity and quality of the tenant's capital resources may be greatly improved.

Government price control policy has in fact kept a close control on the farmers' incomes allowing high profits at the period when capital investment would absorb a considerable proportion of those profits, and cutting profits when costs were becoming more stable.

When we consider the actual distribution of farm income it becomes clear that it is not a simple matter to fix prices in such a way to secure the maximum benefit to the community and at the same time preserve a reasonable balance between different types of farming. The government's prime aim in the early 1940's was to secure the maximum output of certain priority products, particularly wheat, potatoes, sugar beet and milk. But, for the reasons outlined above, they could not neglect farms which were not suitable for the production of considerable quantities of these commodities. Poor land arable farmers and hill sheep farmers were in a particularly difficult position in 1939. Indeed the removal of price premiums on the sale of fat lambs greatly restricted the profits of the latter. They are not important in the farming economy of the East Midlands and it must suffice to say that their position has at no time been easy. Their output is mainly livestock which was not between 1935 and 1945 a priority product and increased prices would have upset the balance of other systems. The government therefore relied on direct subsidies to help them and to maintain their output. The mainstays of the poor land arable system found in the East Midlands are sheep and barley. Prices of fat sheep were not increased proportionately to increases in costs, but, having in mind no doubt the fact that the "sheep and barley" areas had been in deep economic depression for

many years, barley prices were allowed to rise without any attempt at control. Control of cropping prevented an excessive shift from the other crops to barley. In 1943 and subsequent years a maximum price has been imposed which provides a favourable return, although it is well below the peak of 1942. The result of the high barley prices can be seen in the greatly improved level of farming, and the increased investment in tractors and other equipment by the farmers in these areas. However, the disparity between wheat and barley prices caused considerable dissatisfaction among wheat growers and a swing towards barley growing even on land better suited to wheat production. This has been recognised and the gap between the fixed price of wheat and the maximum price for barley has been steadily reduced in succeeding years. At the same time competition between barley growers has had its effect and it is now more difficult to secure the maximum price and the effective price difference is no longer large.

Price policy has been successful in giving, as compared with pre-war years, a good return to the majority of farmers whatever the character of their farms and inevitably price levels have remained, during the whole emergency period, sufficiently high to provide profits for those producing under the most unfavourable conditions. This, of course, means that the efficient producers operating under favourable conditions have secured higher profits, a fact which is confirmed by the high prices now being paid for farms and the increasing investment of capital in agriculture by non-agriculturists. (The latter fact is, however, related to the fall in the interest rates of gilt-edged securities. The search for high yielding investment and the fear of continued inflation have undoubtedly increased the demand for farms.)

Stability of prices would justify a reduction in the profits of farming and in any case it will be difficult for any government to justify the high profits many producers are making to-day once world agricultural prices begin to fall. It is frequently argued that the present subsidies to farmers are in effect consumer subsidies which keep food prices below the level they would reach under free competition. This is true for many commodities and can be used effectively as an argument for maintaining farm prices above world prices when the situation is reversed. There will, however, be strong pressure to reduce prices of food when the world prices fall, and it is unlikely that any government will be able to keep the guaranteed prices at their present favourable level. The present supply position and exchange difficulties are such, however, that this is not likely to become a serious problem in the near future.

CROP COSTS IN RELATION TO THE FARM.

A farm is normally a single integrated business. There are many products which can be grown, either for sale or for consumption by the livestock and the different branches of the farm can be increased or decreased in size according to the prevailing circumstances. During the critical periods of the war the flexibility of the farming systems of different parts of the country has been demonstrated; and during periods of greater stability it was found that neighbouring farms, with similar soil, climate and so on were employing very different systems of production. Dairy farmers selling little apart from milk and surplus or worn out cows could be found in most districts, frequently adjoining farms producing no milk but obtaining their income from other sale products. The final test, to the farmer, of the success of his own system is in the farm profit. While it is good he is unlikely to worry about whether any part of his system is uneconomic. Nor is it always easy to determine whether a single enterprise is or is not economic. Its relation to the other enterprises and to the farm as a whole needs to be considered. A farming system, to be successful must fulfil a number of requirements.

Not only must profits be maintained over a long period but soil fertility must also be maintained. The disastrous effects of ignoring this factor have been shown in the dust bowls of the United States and to a lesser extent in other countries.

A satisfactory balance of labour requirements throughout the year is desirable. During the period in which "Committee labour," prisoners of war, and others, have been available this factor has been of less importance than it is likely to be in the future. A large force of workers dependent on casual employment is socially undesirable, and the success of the government's plans for maintaining full employment is likely to result in a large reduction in the amount of casual labour available in agriculture. There is no doubt that many farmers are at present far too dependent on casual labour for seasonal operations and it will be necessary for them to modify their farming systems in order to even out the peak periods in regard to labour requirements and to eliminate as far as possible the slack periods. Greater mechanisation is one modification that can be applied to the peak periods. The development of livestock enterprises which make a big demand for labour at relatively slack periods can be a useful method of ensuring greater regularity of employment on individual farms. The yarding of cattle on arable farms is an example of an enterprise which may be economically sound even when it is not showing any direct profit. It contributes to the maintenance

of soil fertility and provides the workers with an occupation at a period when they might otherwise be slack ; and in this way makes possible the carrying of a sufficient labour force on the farm to meet the requirements of the arable crops in spring cultivations and at harvest time.

Farm enterprises interlock in many other ways. Much farm produce is consumed by livestock on the farm. Many arable crops fulfil a dual purpose. Cereal crops produce grain and straw. Sugar beet tops can be fed to livestock and both sugar beet and potatoes provide a useful opportunity for cleaning the land. The rotation of crops is designed to maintain fertility but on the livestock farm it is largely subject to the requirements of the livestock and cash crops may only be a subsidiary source of income fitted into the rotation as opportunity occurs. On the arable farm the sale crops are the end point of production, In all cases the sale products must provide sufficient return to cover all costs incurred on the farm and should provide, at the least, a reasonable income for the farmer in relation to the work done and the capital employed.

The costing of individual crops provides useful data on expenses of production in relation to prices received for the product. From this information it may be possible to work out modifications in the system, which will develop the more profitable enterprises or eliminate weaknesses in the less profitable. They provide, too, a useful check on the productive efficiency of the enterprise. The cost of production of any given commodity varies very widely not only from farm to farm but between different fields and different seasons on the same farm. Farm conditions and requirements vary so much that it would be a great mistake to suppose that there should not be wide differences in the costs. Bad conditions in the preceding years may involve considerably increased costs in preparing the land or in eliminating weeds. Heavy investments in fertilisers may be wasted in a bad season. A sudden hailstorm may halve the crop in one field and leave the next field almost untouched. In consequence costs on individual fields always need to be handled with caution. Knowing the conditions it is possible to draw conclusions in a particular case, and to compare the results on different farms within the same group. This will often provide an indication of the relative efficiency of the method of production in the particular case, and, where the result is financially bad, a comparison with other farmers' results may suggest ways of improvement. A comparison with the practice in other areas may also lead to fruitful results and the main costs included in this report have been grouped by areas to facilitate comparisons both within the group and between groups.

A DESCRIPTION OF THE MAIN DISTRICTS FROM WHICH COSTS RECORDS WERE OBTAINED.

ANCHOLME VALLEY CARR LANDS.

The Ancholme Valley lies in the central region of north Lincolnshire between the limestone ridge and the northern wolds. It forms a low lying plain much of which is below the level reached by the high spring tides of the Humber, and in consequence there is serious risk of flooding and considerable difficulty is experienced in securing adequate drainage. The soil of the valley consists of peat and alluvial deposits often superimposed on low level clay and its associated gravels, but near the river mouth the surface soil consists mainly of strong intractable clay known locally as "bullock's liver." Where the peat layer is thin it is possible to plough the underlying clay to the surface to be mingled with the peat, and it is by this process that the best land in the area, the heavy carrs, has been formed.

This type of soil covers about two-thirds of the valley area, including most of the area to the north of Brigg. It is good wheat land yielding five or six quarters ($22\frac{1}{2}$ —27 cwts.) to the acre. South of Brigg the peat is usually deeper and may be overlain by beds of fine gravel. These black lands are easily worked spongy peat with no clay admixture. Shallow cultivation is the rule on this land and the farmers have a big problem with which to contend in the extraordinary growth of weeds which are liable to choke backward crops. A subsidiary difficulty is the danger of firing in a dry time. Once fired the peat may smoulder for weeks or months leaving an ashy denatured worthless patch which becomes a morass with the first rain. This light carr has a tendency towards acidity and yields of grain are relatively low. It is capable of yielding bulky crops of straw and fodder and will yield heavily under potatoes and sugar beet if well drained and well farmed.

Prior to the outbreak of war in 1939 the farming of the valley had reached a low level. Between half and two-thirds of the carrs were under permanent grass, the bulk of which was rough grazing and much was derelict. The arable land too, was in a badly neglected state; well over half the total area being in poor condition. The root cause of this state of affairs was the inadequate state of the drainage of the valley. Drainage works had been carried out over several centuries, and considerable work had been done in the middle of last century, but no drainage scheme had been satisfactorily completed. The efficiency of the older works had greatly deteriorated by 1931 when the Catchment Board was constituted, and between 1931 and 1939 considerable improvements were made. The outbreak of war delayed completion of the projected improvements and the position is still far from satisfactory.

Other factors affected farming in the valley prior to 1939. Roads were bad, many being mud tracks almost impassable in winter, and main services in gas, water and electricity were usually lacking.

Many of the carr farms are small, and dependent on arable cropping for a living. The combined effect of flood damage and the period of general agricultural depression had been to reduce their resources to a dangerously low level. Much of the remaining carr land was farmed as part of larger farms extending outside the valley. On such farms the carr land is frequently distant or not easily accessible from the farmstead which is usually on the higher ground above the valley. In consequence it received secondary consideration in cultivations and manuring and was often regarded more as a liability than an asset.

The outbreak of war in 1939 was followed by the restoration of economic prices. The combination of good prices and improved drainage has enabled the farmers of the valley to increase their arable acreage and concentrate on crops of national importance. The improvement in the whole area has been notable. Derelict land has been brought into cultivation, and mechanisation has increased but there still remains much land which could be contributing more to the national larder.

THE TRENT WARP LANDS.

In the north-west corner of Lincolnshire lies the Isle of Axholme, cut off from the rest of the county by the river Trent. In early times the low hills of the isle were surrounded by a wide expanse of fen extending over to the eastern side of the lower Trent. The history of the draining of these fens goes back to the reign of Charles I. but permanent drainage was not achieved until about the middle of the last century. Following closely on the drainage work the highly fertile soil of the warpland was actually created by the process of "warping." This is done by the controlled flooding of an area with the heavy silt laden tidal waters of the Humber. The land is rapidly flooded at high tide and the water held on the land for three or four hours and then allowed to drain off when the tide has fallen. This is continued twice daily, and as a rule, a thickness of soil of about four feet is thus laid down in three years. Normally a crop of seeds is grown following the warping as this does not require much working and provides an opportunity for the warp to dry out, after which the land is ready for arable cropping. Warping was actively continued up to the first world war but since then the high cost has prevented further development. Naturally the true warpland lies below high water level and the land has to be protected from flooding by extensive defence works and the maintenance of the drainage system and pumping stations. How devastating and expensive floods can be was proved in the spring of 1947 when the river Trent broke through its banks at Morton, near Gainsborough, and flooded something like 45 square miles of land. In fact, out of twelve farmers in this area co-operating in the 1946 potato cost enquiry four had serious loss by flood damage to their potatoes, in one case the whole crop being lost.

The soil in this area is similar to the marine silts found at the opposite end of the county and the main crop is potatoes, which forms the basis of the rotation. Wheat normally follows potatoes,

and these two crops provide the bulk of the farm income. Seeds or roots or occasionally peas follow wheat in the normal rotation which is not rigid, and particularly during the war, cross cropping has been a regular practice. Sugar beet is grown in much smaller quantities than potatoes and fodder crops are grown largely for fattening cattle in the winter, to provide manure for the potatoes. Sheep are almost unknown, but poultry and pigs are normally kept. Practically the whole area, apart from odd fields adjoining the homestead, was under arable cultivation before the war, and farming standards were, and still are high, with great emphasis placed on keeping the land clean. Farms are usually small as judged by standards on less fertile soils and rents and drainage rates are high. The detailed results of both wheat and potato costings however, show that farming in this area is a profitable business.

THE LIMESTONE CLIFF AND HEATH.

The limestone ridge, which runs north and south of the Witham gap at Lincoln is one of the poorer land regions of Lincolnshire. It forms a long narrow plain with a comparatively poor soil, with an abrupt western escarpment, but sloping gently to the east. Prior to enclosure at the end of the 18th century it was covered with bracken, gorse and heather, but was completely transformed by the early part of the 19th century into a region of arable farming. The bulk of the land was under the plough from that time onwards, the farming system being the four course rotation with arable sheep and barley providing the main revenue. The north half of the ridge, usually known as the "Cliff," is overlain by glacial drift, but the soil is hungry and sheep are kept to maintain soil fertility. With the agricultural depression of 1929, particularly on the better soils, potatoes were developed as a major cash crop and increasing quantities of wheat and sugar beet were grown. Sheep naturally declined in numbers, and this process continued throughout the war period of 1939-45 during which the maximum acreages of corn, potatoes and sugar beet were required. The southern half of the limestone ridge, the Lincoln Heath, is not in general so fertile as the Cliff. Here potatoes are less important but a considerable amount of sugar beet is grown. On the poorer soils farming is much more rigidly tied to the four-course with sheep and barley as the main sale crops, and before the war, one could find all the indications of the real farming depression which was apparent in the poor land arable areas.

THE LINCOLNSHIRE WOLDS.

The chalk upthrust of the Lincolnshire wold forms a raised tableland of rolling hills running parallel with the Lindsey coastline and covering an area of nearly a quarter of a million acres. The bulk of the area consists of thin hungry soils with little natural fertility, and some of the land slopes steeply making arable cultivation difficult. There are, however, considerable patches of better land, the most notable being the heavy wolds to the north-east, adjoining the "middle

marsh" where the clay runs on to the chalk, and the "good wold" area north of Caistor. This latter is lower and less hilly than that found further south, and the soil is a deeper fertile loam.

Farming on the wolds was transformed in the early part of last century. Sheep and corn prices were high and the sheep and barley system was firmly established on the enclosed farms. Prosperity did not last. The agricultural depression which set-in in the latter half of the century marked the beginning of a struggle against adverse conditions which was to last, with a brief respite during and after the 1914-18 war, right up to 1939. The Norfolk four-course rotation has remained the basis of farming on most of the wold area, with sheep and barley as the main sale products. It is a system particularly well suited to light land with low rainfall and it would be difficult to suggest an alternative system on the poorer soils. It was this lack of adaptability of the land itself which kept so many of the farmers to the established system, and by the later nineteen thirties many of the farms were in a bad state of neglect as a result of the depletion of farmers' capital resources. The continued depression of sheep and barley prices from 1929-1938 caused those farmers who had better land to experiment with alternative sources of income. The northern "good wold" was largely transformed during this period, sugar beet, potatoes and green vegetables being introduced into the rotation while sheep were drastically cut down, and in some cases given up completely. However, it is still true of this area that prior to 1939 much of it was underfarmed, and although the economic difficulties of the "good wold" farmer were less severe than those of the farmer on the poorer soils the outlook was still far from rosy. The heavy land to the north-east, capable of growing crops of wheat, peas, beans and vegetables, also includes the best grassland and dairy farming was already established on the wold fringe. The problems on this land have not been so acute as in the main wold area and there has always been the possibility of modification of system on this land to meet changing conditions.

War and rising prices have transformed the whole wold area. Most of the farms produce high quality barley. The income from this source has enabled the farmers to repair the neglect of the preceding years and to increase greatly the level of mechanisation; a change which was already an obvious need and which many of them realised although they had been without the capital necessary to carry it through. Sheep, although prices have been low, have been largely maintained on the poorer wold land as a necessary means of maintaining fertility. Small acreages of wheat, potatoes and sugar beet have been grown, but yields have not been high and the view that these crops are not suited to this type of land has been confirmed. On the other hand, peas, already an important crop before the war, have been grown on an increasing scale under the stimulus of good returns. On the good wold land the war has accelerated the process, already well developed, of switching over from the growing of folding crops to the growing of cash crops and there has been a further sharp decline in the sheep population in this area.

THE FENS.

The fen area extends to several counties around the Wash, the main fen area being in Holland. Most of the examples of potato growing on the fens included in this report were in the Witham Valley, but a few were further south near Billingham. The draining of the Witham fens appears to have had a less chequered history and to have aroused less local opposition than much of the drainage work done in Holland. The first big scheme to be carried out provided the Grand Sluice at Boston as outlet and defence against tidal water in 1766, and this was followed by considerable local works on the Witham fens. The scheme was largely unsuccessful and at the turn of the century bad floods were still a regular occurrence. The introduction of steam pumps in the early part of the nineteenth century provided some improvement but it was only just prior to 1882 when the Witham channel was deepened that permanent and effective drainage was achieved.

Following the successful drainage of the area, arable cropping became firmly established, and most of the farms have remained largely arable for the last sixty years. The soil varies from black peat soils with a high proportion of organic matter to fertile silty soils, with boulder clay of very mixed character on the fen margin. The whole fen area is highly fertile. Sheep are almost unknown, but cattle are fattened and before the war considerable numbers of pigs were kept. Potatoes and wheat were the main sale crops, but sugar beet was of considerable importance and peas, beans and mustard were widely grown. (One of the effects of the war has been a considerable increase in the acreage of peas). Rotations were not rigid and the whole region was already intensively cultivated with a high concentration of workers, and many smallholdings. Most of the fields are rectangular, bounded by ditches draining into dykes, but there are patches of higher land which were the "islands" of the pre-drainage times. The blacklands are not regarded as the best fen soils, and are not used for market garden crops to the same extent as the silts and skirt land, which are often of exceptional fertility and which grow potatoes of high quality, but all these soils produce heavy crops. King Edward potatoes are popular on the blacklands as the white varieties tend to be of poor quality and, before the war, were frequently difficult to market. Flooding has not been a serious feature in this area in recent years and even in the 1947 floods only a relatively small area was flooded, and none of the potatoes for which costings records are available suffered badly.

THE MIDDLE MARSH.

Lying between the Lincolnshire Wolds on the west and the Marshes on the east is a tract of undulating boulder clay stretching from the Humber down towards the Wash in the south. This area, lying between 20 and 100 feet above sea level, has been known as the "Middle Marsh" at least since the days of Arthur Young. The alternative name of "the Clays" indicated, clearly enough, the type of land ;

heavy land farmed on a rotation incorporating wheat and beans. This was a typical mixed farming area with a good clay loam soil which, although heavy to work, produced good crops. Much of the land was not naturally well drained and prior to the war there was a tendency, owing to economic conditions, for the land to be put down to grass and dairying had increased considerably in recent years. Sugar beet and potatoes are not important crops, but peas have grown in importance in recent years as a useful cash crop well suited to this type of soil, while the bare fallow was formerly regarded as an essential part of good husbandry, and some farmers still introduce it into their rotations.

The advent of war did not have a very serious effect on the economy of this district. Dairy herds were maintained on a more self-sufficient basis and arable cultivation was increased. Barley increased in importance as a sale crop, a not very surprising result of the price levels existing, and pea growing was further expanded. Most farms were well equipped with implements and skilled labour, and when labour became short it was supplemented by the Women's Land Army and prisoners of war, but the high priority given to other areas in the supply of implements has led to the position where considerable replacements of worn out equipment are needed in order to maintain and increase production.

MARKET HARBOROUGH DISTRICT.

This is a part of the famous cattle fattening area round the Welland Valley. Prior to 1940 cattle and sheep farming predominated throughout the east and south-eastern grasslands of Leicestershire, beef cattle for summer fattening being the major enterprise in the district. In general holdings were large and practically the whole of the cultivated area was under grass. Although there is much land in highbacked ridge and furrow indicating that at one time it had been under the plough, a considerable area had been down to grass for over a century and was of a high quality which in the opinion of local farmers would take generations to recover if the land were ploughed. Most of the land was valuable and the best fields would fatten more than one bullock per acre. No fields were out of cultivation (apart from the fox coverts) but as a result of the type of farming the labour requirements were low. In fact, in 1939, the whole county of Leicestershire only averaged 16 farmworkers (i.e. excluding the farmer and his wife) per 1,000 acres of farm land as against a national average for England of 26, and undoubtedly fewer in proportion were employed in the Market Harborough area than in the rest of the county. It may be noted too, that the number of occupiers, in an area where smallholdings were few, was also below average, thus accentuating the labour shortage which was to develop with the second world war.

The war made it necessary for the government to adopt an active policy for the utilisation of the nation's agricultural resources. Both beef and mutton were given a low priority in the plans for home

production while crops for direct human consumption or for conversion by cows into milk were given top priority. In this area there were considerable difficulties. Labour was in short supply and unskilled in arable cropping. Farms were not equipped with either implements or horses and tractors to pull them. Buildings were not available so that milk production could be expanded only with difficulty. Development of arable cropping would have been easier on lighter land, but this area lies over the lower Lias clays and the best pastures are found where the overlying boulder clay has been denuded. Despite these difficulties a remarkable transformation took place. A high priority for tractors and implements was given. Hostels were set up for members of the Women's Land Army and, later, camps for prisoners of war. The War Agricultural Executive Committee established its machinery depots and undertook a great deal of the heavier work of cultivation, and on some of the smaller farms carried out most of the arable cultivation. By 1943 many of the farms were already over half arable. The early difficulties were being overcome although labour has been consistently short. This is bound to remain so until an adequate supply of cottages can be built to attract the necessary permanent workers to take the place of members of the Women's Land Army and the prisoners of war. The contribution of Leicestershire to the ploughing up campaign and to the production of food for human consumption is so outstanding that it deserves special mention. The following figures show the changes for the county as a whole; the Harborough district has a proportionately greater increase in arable cultivation and still remains in 1948 a largely arable area, although the fattening of beef has been maintained on a reduced scale throughout the plough-up and strong beef cattle are the main livestock to be seen in the area.

TABLE 2.
LEICESTERSHIRE: COMPARISON OF 1939 AND 1944.

	1939	1944	Increase %	Decrease %
Land Utilisation (acres)				
Arable	67,618	238,006	252	—
Permanent grass	378,120	203,256	—	46
Wheat	21,379	83,630	292	—
Potatoes	1,921	16,207	742	—
Livestock (numbers)				
Dairy cows	49,600	52,208	5	—
Other cattle over 2 years	46,450	31,557	—	32
Sheep	266,649	102,047	—	62
Total Workers returned as employed at June 4th	6,865	10,664	55	—

Source: Ministry of Agriculture and Fisheries.

WHEAT COSTINGS IN 1942, 1943 and 1946.

Wheat throughout the period of national emergency has been one of the key crops which farmers have been required to grow. Even before 1939, bolstered up by wheat deficiency payments, more wheat was grown than any other crop except oats and by 1943, the peak year for wheat, the acreage had been increased by 95 % over 1939 to a total of 3,280,000 acres for England and Wales. Since 1944 the emphasis has changed and although wheat is still regarded as an important crop in the national economy the area grown has fallen to about two million acres. This fall is accounted for by two distinct factors: on the one hand the desire of farmers to reduce the tillage acreage once the danger to our food supplies appeared to be over has been acceded and on the other increased emphasis has been placed on the production of livestock and livestock products and although the acreage under tillage crops diminished, that of barley, oats and mixed corn increased to over four-and-a-half million acres in both 1945 and 1946 (about twice the 1939 acreage).

These changes naturally affected regions in different ways but unfortunately it is not possible to assess accurately the changes in particular areas as the published statistics relate only to county areas which do not correspond to farming type areas. Leicestershire which has already been mentioned in the description of the Market Harborough district provides an interesting example of how a predominantly grassland farming economy was adapted to wartime needs. Kesteven and Lindsey were both predominantly arable counties before the war and changes are far less striking.

The Lindsey division is a county with widely divergent farming systems and includes within its boundaries not only some very valuable marsh grazings and some of the best arable land in the country, but also the extensive areas of poor land on the wolds and the heath. Some interesting figures do, however, emerge from the county statistics. Although the better class of land in this division was already growing a good proportion of wheat the total acreage under this crop remained below the 1939 level throughout the war years except for 1943 and 1944, and fell considerably once the war was over; while the barley acreage showed a steady rise throughout the period encouraged by the prices offered for good quality malting samples. The same was largely true of Kesteven and in neither county was there any important change in the stock feed grown, the numbers of cattle were slightly increased but there were reductions in numbers of both sheep and pigs. The following table shows the absolute

changes in the acreages of wheat grown and the changes in the relative importance of wheat in the arable economy for Kesteven, Lindsey and Leicestershire.

TABLE 3.
WHEAT ACREAGE CHANGES, 1939-1947.

Year.	Wheat Acreage Index (1939 = 100)				Wheat Acreage as Percentage of Arable Acreage.			
	Kest- even.	Lind- sey.	Leic- ester- shire.	England and Wales.	Kest- even.	Lind- sey.	Leic- ester- shire.	England and Wales.
1939	100	100	100	100	27½	24½	31½	19
1940	84	95	110	101	22	22½	24½	17
1941	87	88	222	127	21½	20	27½	18
1942	89	86	306	142	21	19	34½	18½
1943	123	112	408	195	27½	24	39	23½
1944	113	103	391	182	24	22	35	21
1945	84	69	281	130	18	14½	25	15
1946	87	82	276	118	19	17	25	14
1947	85	91	267	123	18½	19½	24½	15

Source : Derived from figures obtained from the Ministry of Agriculture and Fisheries.

The recent decline in the wheat acreage in the predominantly arable counties is not really surprising when one considers not only the relative prices of wheat and barley but also that much of the lighter land was probably growing poor crops of wheat in preference to barley in the pre-war years when the price ratio was in the opposite direction. In Leicestershire on the other hand, wheat has been the most important cash crop throughout the war, much of the ploughed up grass being on strong land not capable of producing malting barley. It is doubtful whether the present high proportion of arable land under wheat will be maintained without considerable pressure from the County Agricultural Executive Committee.

The regions for which costs of wheat growing have been recorded were, in 1942 and 1943, the Ancholme Carrlands, and in 1946 mainly in three areas, Market Harborough, the Middle Marsh near Louth, and the lower Trent Warps. In the latter year in addition records were obtained from farmers of 150 acres upwards, mainly on the Wold and Limestone. The results of the costings enquiry are summarised in tables 4 and 5. But it is important to note in interpreting the figures the limitations referred to in the appendix on the method of compilation. Details of the costs on individual farms are given in the appendix.

TABLE 4.
COST OF GROWING WHEAT IN THE ANCHOLME VALLEY
IN 1942 AND 1943.

	1942	1943
No. of cost records	12	10
Acreage costed	102	95½
Average field size (acres)	8½	9½
Average farm size (acres)	205	99
Costs per acre : ...	£ s. d.	£ s. d.
Preliminary cultivations	12 11	11 5
Seeding and covering	8 11	7 4
Spring cultivations	5 7	4 11
Applying manures....	6 5	4 10
Weeding	4 4	2 9
Harvesting	1 10 1	1 5 7
Threshing	1 14 3	1 8 2
Seed....	1 13 2	1 12 0
Artificials	10 1	9 9
Farmyard manure....	10 0	14 7
Rent, etc.	1 6 0	1 4 10
Binder twine	3 10	2 10
Direct Costs	9 5 7	8 9 0
Net manurial residues	1 2 4	12 0
Net cultural residues	1 5 0	1 4 6
Total (see appendix)	£11 12 11	£10 5 6
Yield	21.5 cwts.	20.8 cwts.
Cost per cwt.	10s. 10d.	9s. 10d.

Both 1942 and 1943 were good years for wheat growing, and the national yield of wheat was above average for both years in spite of the great expansion of the wheat acreage. In both years the yield on the costed sample was above the national average and this supports the view expressed earlier of the potentialities of the Ancholme Valley soils.

The range of costs in both years was wide. Labour, including charges for tractors, horses and contract work, cost on average £5 2s. 6d. per acre in 1942 and £4 5s. 0d. in 1943, or just over half the direct costs of growing the crop. Undue significance should not be attached to the differences in costs between the two years. In the main they were due to fewer cultivations being carried out in 1943 when shortage of labour due to increased arable cropping was being felt by farmers.

The shortage of artificials is also reflected in the lower credits for manurial residues brought forward in 1943. (No residues were charged for nitrogenous fertilisers, and it was precisely the potash and phosphate which were short). In both years seven of the farms included in the samples were under 100 acres and the difference in average farm size in the two years is accounted for by the fact that in the earlier year four farms each over 250 acres were included. Generally yields were higher and the costs per acre lower on these larger farms.

By 1946 costs had increased considerably. Wage rates had risen from 60s. 0d. in 1942 and 1943 to 70s. 0d. in the early part of 1946 and 80s. 0d. from mid-July onwards: increases in overtime rates were proportionately greater. Weather conditions were not so propitious. Good weather in the autumn of 1945 was followed by a cold late spring, and by storms and rain in July and August, so that much of the wheat was still in the fields at the end of September. Harvesting costs were in consequence high. Yields, however, were not adversely affected by the weather.

The information for 1946 has been divided into four groups three of which relate to fairly homogeneous farming type areas: the Trent Warplands, the Middle Marsh and the Market Harborough region. The fourth "Miscellaneous" group includes mainly large farms (150 acres upwards) four of which were on the Lincolnshire Wolds, three on the Limestone and one in the Western Leicestershire dairying region. In general the cost figures follow the pattern that would be anticipated from the type of farming in the particular regions. Preliminary cultivations are lowest and cultural residues highest on the Warps, where all the wheat crops costed followed potatoes. Shortage of labour was not so acute here and the standard of high farming is reflected in the relatively high costs per acre. Although the crops followed potatoes more weeding was done than was the case in other areas where the land was much dirtier. If we add the net cultural residues to the total field labour (including tractors, horses and contract work) we arrive at labour figures for the four groups which are roughly comparable since the main component of the cultural residues is the operations carried out on the preceding crop which benefit the wheat. The 1946 figures are as follows:

TABLE 5.

COST OF GROWING WHEAT IN FOUR AREAS IN 1946.

	Market Harborough	The Middle Marsh	Trent Warpland	Miscellaneous Group
No. of cost records	9	10	8	8
Acreage costed	78½	103½	70½	151
Average field size (acres)	8½	10½	9	19
Average farm size (acres)	250	198	94	311
Costs per Acre :	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Preliminary cultivations	1 0 5	1 15 6	6 5	8 7
Seeding and covering	9 11	6 5	9 6	7 10
Spring cultivations	2 4	4 2	3 10	3 4
Applying manures	—	13 0	3	5 3
Weeding	1 6	4 8	5 7	5 0
Harvesting	2 7 5	2 3 8	2 13 10	2 4 1
Threshing	2 6 10	1 18 7	2 6 0	1 16 3
Seed	1 16 2	1 6 11	1 14 1	1 9 7
Artificial	13 2	6 0	1 4	12 9
Farmyard manure	—	1 18 0	—	15 0
Rent	1 14 2	1 15 2	2 18 0*	1 10 4
Binder twine	3 2	3 2	4 0	3 1
Direct Costs	10 15 1	12 15 3	11 2 10	10 1 1
Net manurial residues	3 7	8 1 +	2 4 5	1 7 1
Net cultural residues	1 3 10	18 4	2 18 9	2 12 9
Total (see appendix)	£12 2 6	£13 5 6	£16 6 0	£14 0 11
Yield	24.6 cwts.	30.2 cwts.	28.0 cwts.	25.4 cwts.
Cost per Cwt.	9 10	8 10	11 8	11 1

* Drainage Rate averaged 9/3 per acre.

+ Credit

The high figures for the Warp group and the low figures for the Market Harborough District were not unexpected but it is surprising to find costs of labour almost equal on the strong land of the Middle Marsh and the much lighter soils of the Miscellaneous group, although it will be noted that the composition of the labour in these groups is different, there being a heavy charge for cultural residues in the latter.

The position of wheat in the rotations practised in the different areas is interesting and indicates the extent to which they are adhered to in the different regions. The following analysis shows the crops which were grown in 1945 on the fields growing wheat in 1946 :

TABLE 6.

CROPS GROWN IN 1945 ON WHEAT FIELDS OF 1946.

	Warpland	Middle Marsh	Market Harborough	Miscell- aneous
Potatoes	8	—	2	5
Peas or Beans	—	5	1	—
Seeds (including clover)	—	3	2	2
Bare Fallow	—	2	—	—
Wheat	—	—	1	1
Oats	—	—	2	—
Roots	—	—	1	—

Good yields were obtained in all four districts, the highest being recorded on the strong land of the Middle Marsh and on the Warps. There were, however, a number of cases in which abnormal factors affected the results. In the Market Harborough district one crop was badly damaged by hail and the yield was reduced by about half, to 13 cwts. of grain per acre. In another case sparrows were estimated to have damaged the crop to the extent of reducing the yield by two quarters (9 cwts.) per acre. Undersown seeds caused trouble in two fields. In one a part of the field had to be cut for hay. In this case the haymaking costs and returns have been omitted from the costs which, together with yields have been averaged over the whole field. In the other case the corn was badly laid but the main damage was to the undersown seeds. No charge has been made against the wheat for this damage. There were, in addition, two crop failures. In one case spring wheat was successfully sown and all the costs were included in the summaries. In the other barley was sown, also successfully, but the record could not be used for this report.

Of the five cases of yields under one ton per acre four were accounted for by damaged crops. In general the better land and the better farmers produce the better crops, and the level of yields recorded indicates that both are included in our records. It is not possible to draw any conclusions about the profitability of any crop without consideration of the place of that crop in the whole economy of the particular farm. Other things being equal the highest profit will be achieved by combining a good yield with a reasonable margin between cost and selling price. In the samples the best yields were achieved at a cost per unit which was below average; and the indications are that greater attention to the crop is well repaid in yield. In addition a high proportion of the most profitable crops combined a high yield with a cost per acre which was above the average.

BARLEY GROWING ON THE POORER LAND IN LINDSEY.

Barley occupies a peculiar position in farming economy which results from the opportunity the grower may have of securing a high price for a good malting sample on the one hand and the demand for barley as stock feed at a much lower price on the other. Prior to 1939 the general depression of agricultural prices on the world market was associated with intense competition by producers and in Great Britain the Government had, from 1937 onwards, subsidised barley and oat growers. It is interesting to remember that the subsidy was only payable when the price of *oats* fell below 7s. 8d. per hundred-weight which gives a good indication of the level of prices at that time.

In the years 1935 to 1938 total supplies of barley in the United Kingdom amounted, on average, to about 1,675,000 tons per annum of which about half went to brewers and manufacturers and the balance was consumed on the farms. Home producers provided only 45% of supplies, the remainder being made up by imports. The impact of war gave a great impetus to home production. Imports in 1940 were less than half those in 1938 and in the three years 1942—1944 no barley at all was brought in. At the same time the demand for non-agricultural uses increased. barley was utilised in bread manufacture and the demand for beer rose so that supplies for this purpose had to be limited. Increased production in the early war years could not keep pace with demand. Prices rose rapidly as total supplies fell and in 1941 malting barley was fetching up to £10 per quarter. Thereafter prices were controlled and have been brought steadily downwards but it has been a sore point with wheat growers that they have been compelled to grow wheat at a lower price than could have been had for barley. Even with reduced prices barley growing has extended year by year until 1946 when over two million acres were grown in England and Wales, and production was well above double the pre-war average. The actual figures for the United Kingdom are given in table 7.

TABLE 7.
BARLEY SUPPLIES AND INDUSTRIAL CONSUMPTION.

Year	Home Production		Imports (.000 tons)	Used by Brewers, Distillers and for Food Manufacture ('000 tons).
	Acreage (.000 acres)	Estimated Yield (.000 tons)		
1935-38 +	915	757	918	822*
1942	1,528	1,446	—	816*
1943	1,786	1,645	—	1,196
1944	1,973	1,752	—	930
1945	2,215	2,108	102	1,080
1946	2,211	1,963	109	1,060
1947	2,060	1,619	113	998

Source: Central Statistical Office: figures for United Kingdom.
*These figures are for the years beginning July 1st and ending June 30th. It should be noted that production and consumption years do not correspond. The barley crop in any year will be consumed partly in that year but mainly in the following year.

+ Average of these 4 years.

Farms on the poorer soils which make up the typical "sheep and barley land" were in a very depressed state in 1939. Probably the worst crisis in their history occurred in 1932, when the Hull market price of fat sheep averaged 7½d. per lb., whilst malting barley at the same market averaged 25s. 10d. per quarter. Prices were poor in the following years and a further crisis occurred in 1938 with fat sheep making 8½d. per lb. and malting barley 27s. 4d. per quarter. There is no doubt that the productive technique in this branch of farming was a good deal less efficient than it should have been, largely as a result of the dwindling capital resources of the farmers who had been fighting to maintain their very existence. It seems reasonable to conclude, therefore, that the reason why barley prices remained uncontrolled in the early war years and were then fixed at such favourable levels was to provide these farmers with the necessary capital to re-equip their farms and to raise the general level of their farming so that they could contribute to the war-time needs of the nation. Whether or not this was deliberately planned there can be little doubt of the result. Labour was already scarce, a result of the years of depression. But this was attracted back and greater mechanisation and increased use of fertilisers followed naturally from the increased capital resources of these farmers.

Not all the farms from which costs of barley crops were obtained were on the poorer soils. About half the Wold Group were on medium or good land, where their difficulties had not been so acute during the years of depression of sheep and barley prices. Many had been able to change their farming system in a way that was not open to those on the poorer soils, but not unnaturally they did not hesitate to grow more barley when prices began to soar. The same is broadly true of the small sample of Limestone farms. The Carrland farms, as has been explained earlier, were in a depressed state for other reasons but they too were able to re-establish themselves to a large extent by developing barley production. In their case however, improved prices of potatoes, sugar beet and wheat were almost equally important.

In 1942 cross cropping does not appear to have been widely developed in any of the groups. On the poorer Wolds barley was generally grown after folded roots, and on the better Wold and Limestone soils after sugar beet, although even in this year in three cases barley followed a previous corn crop. On the Carrs, too, barley took its place in the rotation, usually after sugar beet or potatoes. On the Wolds and Limestone the four-course rotation was still generally followed in 1943 and 1944 but there was an increased tendency to extend it by the inclusion of an additional corn crop and on several farms barley had displaced part of the second corn crop in the rotation. On the Carrs on the other hand, by 1944 the most common sequence of crops was sugar beet, or potatoes, wheat, barley; and in only two cases was barley grown immediately following a root crop.

Barley growing in Lindsey did not increase to the same degree as was found in the country as a whole. But a relatively large acreage

of barley had previously been a feature of the large areas where there was no alternative crop which could be successfully grown when prices were low. This is borne out by the fact that in Lindsey in the pre-war years the proportion of the arable acreage occupied by barley was nearly double that of the country as a whole. The increase in the proportion of arable land under barley was actually very much the same as for the whole country and reached 17½% in 1940 and again in 1944, but the changes were not nearly so steady.

TABLE 8.
THE DEVELOPMENT OF BARLEY GROWING IN THE
UNITED KINGDOM AND IN LINDSEY.

Year	UNITED KINGDOM.			LINDSEY.		
	Barley Acreage ('000 acres)	Percentage of Arable under Barley	Average Yield per acre (cwts.)	Barley Acreage ('000 acres)	Percentage of Arable under Barley	Average Yield per acre (cwts.)
1935	871	6½	16.9	61	12	17.5
1936	894	6½	16.4	62	12½	15.4
1937	906	7	14.5	63	12½	13.9
1938	988	7½	18.3	70	14	18.3
1939	1,013	7½	17.6	70	14	16.7
1940	1,339	9½	16.5	90	17½	17.0
1941	1,475	9	15.5	90	16½	14.9
1942	1,528	8½	18.9	89	16	19.2
1943	1,786	9½	18.4	93	16½	20.7
1944	1,973	11½	17.8	100	17½	17.7
1945	2,215	11½	19.1	121	21	21.1
1946	2,211	11½	19.1	117	20½	18.7
1947	2,060	11	15.7	105	18½	16.0

Source : Agricultural Departments.

The outlook for the future is bright. The demand for malting barley exceeds supply and necessitates allocation of only limited quantities to the brewers. There is a strong demand for feeding stuffs of all kinds and in particular there is a large market awaiting the re-development of the pork and bacon trade. On the other hand the world supply of all cereals is limited and exchange difficulties are likely to hamper trade for some years to come, so that a firm demand for home-grown barley would appear to be assured for at least several years.

The results of the cost investigations are tabulated below. Additional tables of individual farm results are given in the appendix. It is unfortunate that the method of analysis was not uniform throughout, and care needs to be taken in comparing individual cost items over the time series. The 1942 figures also should be treated with some reserve as they were the result of a survey carried out in the summer of that year and some of the figures are dependent on the accuracy of the individual farmer's memory. Increasingly greater detail was obtained in the following two years. It will be appreciated that in the earlier years there has been a greater amalgamation of operations under the individual headings in the tables.

At first glance there is a surprising uniformity of average costs over three years. Actually these years cover the longest period of relative stability of wages since 1939. The minimum rate was fixed at 60s. 0d. at the end of 1941, was raised to 65s. 0d. in December 1943, and remained at that level until 1945. In the tables it will be noted that labour costs fell in 1943 and rose again in 1944, but it is probable that the 1942 costs were somewhat overestimated. The rise in labour costs in 1944 over 1943 appears to be due mainly to the increased wages, and although harvesting conditions were difficult in that year the actual time per acre taken in getting the crop, was, on average, not greatly above that taken in 1943. The cost of seed is the item showing greatest change, and the rapid fall in price is a reflection of the fall in prices received for the crop.

The years 1942 and 1943 were both favourable to barley growers and yields were good. Good harvest weather enabled most farmers in these areas to secure the crop in good condition and obtain good prices as a result. On the other hand 1944 was a difficult year, and bad weather at harvest not only further reduced yields but also affected the quality of the grain with consequent reduced value and return to the grower. In 1942 a good proportion of growers received the maximum price of 140s. 0d. per quarter and again in 1943 the majority received the reduced maximum of 110s. 0d. In 1944 when the price fell again to 100s. 0d. per quarter few growers in the sample received that price, their actual receipts being scattered round an average of about 90s. 0d. Even at this price the crop was reasonably profitable. If it is assumed that the value of the straw and tail corn balances out the overhead costs chargeable to the crop then the average profit of the Wold group in 1944 (the group with the lowest yield in that year) would be over 80s. 0d. per acre. On this basis the profit in the other groups in 1944 and in all groups in the two earlier years would be considerably greater.

Since 1942 wage rates have increased by 50%, from 60s. 0d. to 90s. 0d. for a shortened working week with a greater proportionate increase in overtime rates. Barley prices however, have remained fairly steady, rising only slightly to 106s. 0d. maximum for the 1947 crop (which however, was grown and harvested before the last rise in wages) and with the prospect of a maximum of 120s. 0d. for the 1948 crop. On the other hand it must be remembered that it is not so easy to secure the best prices now. Competition among growers is much keener and the brewers have less difficulty in securing, from the suppliers of good quality barley, all they are permitted to buy. At present (1948) prices and wages one can say that the probable direct cost of growing barley would be somewhere in the region of £14. 10s. 0d. per acre with a prospective yield between four and five quarters. Again assuming that the value of the straw and tail corn balance out overhead costs the average profit per acre would be between £10 and £15 per acre for a grower producing a good malting sample, or between £4 and £8. 10s. 0d. per acre if only the minimum price for milling barley was secured.

TABLE 9.
 COSTS OF GROWING BARLEY ON THE ANCHOLME CARRS,
 THE LINCOLNSHIRE WOLDS AND THE LIMESTONE HEATH
 IN 1942.
 (Average costs per acre).

	Carrs	Wolds	Limestone
No. of cost records	12	17	5
Acreage costed	97	401	77½
Average field size(acres)	8	23½	15½
Costs per Acre :	£ s. d.	£ s. d.	£ s. d.
Total labour	3 18 2	3 6 4	3 12 10
Hire of threshing drum	15 11	19 2	1 1 1
Seed	4 2 8	3 12 9	3 15 3
Manures	1 3 0	14 0	17 6
Rent and drainage rates	1 4 2	1 2 5	1 6 6
Sundries	4 1	4 2	2 10
Direct Costs	11 8 0	9 18 10	10 16 0
Manurial residues	15 8	17 5	1 15 10
Cultural residues	1 4 2	1 17 5	1 4 1
Total	£13 7 10	£12 13 8	£13 15 11
Yield (in quarters)	5	5½	5½
Cost per Quarter	£2 15 5	£2 4 6	£2 7 2

TABLE 10.
 COSTS OF GROWING BARLEY ON THE ANCHOLME CARRS,
 THE LINCOLNSHIRE WOLDS AND THE LIMESTONE HEATH
 IN 1943.
 (Average Costs per Acre).

	Carrs.	Wolds	Limestone
No. of cost records	9	16	6
Acreage costed	66½	400½	73½
Average field size (acres)	7½	25	12
Costs per Acre :	£ s. d.	£ s. d.	£ s. d.
Seedbed preparation	15 10	16 11	1 5 4
Drilling and covering	5 7	4 11	4 11
Other cultivations	5 8	5 9	5 9
Harvesting	1 8 0	1 10 3	1 3 3
Total Field Labour	2 15 1	2 17 10	2 19 3
Seed	2 15 11	3 0 6	3 2 10
Manures	1 2 8	1 4 1	1 9 6
Rent and drainage rates	1 10 5	1 1 8	1 6 0
Sundries	4 0	2 8	2 9
Threshing	1 9 11	1 7 4	1 8 5
Direct Costs	9 18 0	9 14 1	10 8 9
Manurial residues	12 7	11 9	12 8
Cultural residues	1 4 3	1 19 6	19 3
Total	£11 14 10	£12 5 4	£12 0 8
Yield : (in quarters)	5½	6	5½
Cost per Quarter	£2 2 9	£2 1 0	£2 2 9

TABLE 11.
 COSTS OF GROWING BARLEY ON THE ANCHOLME CARRS
 THE LINCOLNSHIRE WOLDS AND THE LIMESTONE HEATH
 IN 1944.

(Average Costs per Acre).

	Carrs	Wolds	Limestone
No. of cost records	10	9	3
Acreage costed	72	220	43
Average field size (acres)	7	24½	14
Costs per Acre :	£ s. d.	£ s. d.	£ s. d.
Seedbed preparation	18 11	19 9	1 4 7
Drilling and covering	7 6	7 4	6 5
Applying manures	2 11	4 1	4 1
Other cultivations	6 10	2 1	4 3
Harvesting	1 12 11	1 12 8	1 18 8
Total Field Labour	3 9 1	3 5 11	3 18 0
Seed	2 6 11	2 5 10	2 6 8
Artificial	1 14 2	17 11	2 1 10
Farmyard manure	—	9 6	—
Rent and drainage rates	1 3 7	18 0	1 11 2
Sundries	3 7	2 8	2 10
Threshing	1 13 5	1 5 11	1 15 10
Direct Costs	10 10 9	9 5 9	11 16 4
Manurial residues	2 3*	7 2	2 10
Cultural residues	8 1	1 17 5	10 0
Total	£10 16 7	£11 10 4	£12 9 2
Yield : (quarters)	4½	3½	5
Cost per Quarter	£2 8 2	£3 6 4	£2 6 9

*—credit.

POTATO GROWING IN KESTEVEN AND LINDSEY.

An exhaustive investigation into the production and marketing of potatoes in the East Midlands was undertaken by S. M. Makings in the years 1932/34.¹ The present enquiry deals only with costs of production of potatoes during the years 1944 and 1946. Problems associated with marketing and consumption have been excluded and only three areas have been chosen for investigation: the Trent Warp, the Limestone and Good Wold Areas, and the Witham Fens. The latter area was not covered in the earlier report which however, included potato growing on similar soils elsewhere, particularly the Fen and Skirt soils of Lindsey and Holland.

Prior to the establishment of the Potato Marketing Board at the end of 1933 the position of potato growers was becoming very difficult. Prices fluctuated violently from year to year largely in response to changes in yields. The low yields of 1931 gave producers high prices but with good yields on a greater acreage prices slumped badly in 1932-3 and 1933-34.² Thereafter the producers' position steadily improved as a result of the actions of the Potato Marketing Board and improvement in economic conditions. Indeed, criticism suggested that the Board had looked after the growers' interests to the detriment of consumers. The Board's method of control was mainly by making orders as to the size of potatoes to be marketed. Growers were restricted to a "basic" acreage of potatoes which related to the acreage grown in the years 1931-33. A producer could, however, increase his "basic" acreage by an initial payment of a levy of £5 per acre as a contribution towards the costs of surplus disposal. This levy was not large enough to restrain an efficient grower from increasing his acreage, but acted as a check to sudden increases in acreage which are apt to occur after a season or two of highly profitable crops. The acreage under potatoes declined in 1934 and again slightly in 1935 and thereafter remained very steady until 1940. In no year during this period did the acreage actually planted reach the figure of the "basic" acreage.

1. Final Report on Potato Production and Marketing in the East Midlands in 1932-34. S. M. Makings, School of Agriculture, Sutton Bonington, 2s. 0d.
2. The Lucas Report gives the following figures which illustrate the price fluctuations.

POTATOES: PRODUCTION AND VALUE.

Year.	Gross Production.	Estimated Value of Output (England and Wales).
September-August	'000 Tons.	£ (Million).
1931-32	3,154	15.9
1932-33	4,450	9.1
1933-34	4,555	8.5

Following the outbreak of war in 1939 it was necessary to expand production and for the government to control supplies. The Potato Marketing Board was not a suitable organisation for these purposes and its operations were suspended. The Ministry of Agriculture organised the increase in output and the Ministry of Food took charge of the control of supplies. The increased production was required primarily to replace other foodstuffs which were in short supply as a result of the war but it is remarkable how far this expansion has gone and how far consumption has increased from the level of the middle '30's (Imports were relatively unimportant after 1932 and averaged less than 5% of home production during the period 1934-39).

Table 12 shows the growth of the potato acreage and the expansion of consumption up to 1947.

TABLE 12.
POTATO ACREAGES,
PRODUCTION AND CONSUMPTION IN GREAT BRITAIN

Year.	Acreage (‘000 acres).	Production (‘000 tons).	Consumption for Food (‘000 tons).
Average 1934-38	603	4,121	3,047
1939	589	4,354	?
1940	695	5,375	3,136
1941	966	6,783	3,614
1942	1,116	8,162	4,358
1943	1,193	8,537	5,060
1944	1,219	8,026	5,845
1945	1,207	8,702	5,533
1946	1,230	8,614	5,907
1947	1,149	6,742	5,970

Source : Central Statistical Office and Agricultural Departments.

The acreage of potatoes, the total yield and the actual consumption had all doubled or practically doubled between 1939 and 1944 and since then the acreage has been maintained although the relatively poor harvest of 1944 caused a setback in that year and this was sufficient to cause shortage in many parts of the country. It is interesting to notice that the 1944 harvest would have been considered at least average in the years prior to 1935. There is a long term tendency for yields of potatoes to rise and this has continued into the last decade despite the growing of potatoes on land which many farmers have declared to be unsuitable. This increasing yield is undoubtedly due in part to farmers switching over to high yielding varieties at a time when the market was assured (see section on Varieties Grown).

TABLE 13.
POTATO YIELDS IN GREAT BRITAIN.

Period.	1885-94	1895-04	1905-14	1915-24	1925-34	1935-44
Yield in tons (average for 10 years).	5.8	5.8	6.2	6.2	6.5	7.0

Source: Ministry of Agriculture & Fisheries.

Lincolnshire has for long been one of the main potato growing regions of the country and during the war years, encouraged by price incentives, or, where these have failed, under orders from the then County War Agricultural Committees the total production of the different parts of the county has increased very considerably.

TABLE 14.
POTATO ACREAGES AND YIELDS.

Year	Kesteven.			Lindsey			England & Wales
	Acres ('000)	Production tons ('000)	Yield per acre (tons)	Acres ('000)	Production tons ('000)	Yield per acre (tons)	Average yield per acre (tons)
1939	19	154	8.3	40	289	7.2	7.3
1940	22	190	8.7	44	382	8.6	7.7
1941	27	197	7.4	51	383	7.4	7.0
1942	29	245	8.4	57	465	8.2	7.4
1943	32	266	8.2	59	482	8.1	7.1
1944	35	281	8.1	60	408	6.8	6.6
1945	38	311	8.3	60	483	8.0	7.2
1946	40	314	7.4	63	476	7.6	6.8
1947	40	263	6.5	58	355	6.1	5.8

Source: Ministry of Agriculture and Fisheries.

In Lindsey the acreage had by 1945 increased by 50% and production in that year was 67% above the 1939 level: in Kesteven both acreage and production doubled in the same period. In both Divisions yields were well above the national average, the Kesteven yields being normally higher than those in Lindsey.

Neither 1944 nor 1946, when the investigations were made, were good potato years. The average yields in England and Wales were lower than in any other years since 1936, and it is important to bear this in mind when interpreting the figures.

In 1944 the weather conditions seriously affected yields, particularly the summer drought which delayed growth at the most critical period. The drought was followed by a dull wet period which delayed harvesting but the crop was got in fair condition.

The spring of 1946 was cold and wet and delayed preparations for planting. The summer was wet and a late corn harvest prevented an early start being made on lifting. However, weather conditions improved and the bulk of the crop was lifted in fair condition during October and early November. Crops still in the ground in mid November, however, were in much worse condition and were usually very dirty when lifted. Losses in the clamp varied, but more serious than losses due to disease were losses by flooding during April, 1947, which affected many farms including four on which costings records were kept. Frost damage also occurred in some clamps.

VARIETIES GROWN.

The favourite variety grown in all areas in 1946 was Majestics, and no less than thirty out of thirty-six records were for fields growing this variety, either alone or with other varieties. Even in the Wold and Limestone Group, which showed the greatest range of varieties, Majestics were grown on eight out of twelve costed fields. The following table summarises the position as it was in 1944 and 1946 in comparison with 1932 and 1933, and although the sample for the later years is small, the conclusion seems to be valid that there has been a considerable change, which would appear to be the result of the greatly increased demand for potatoes in the 1940's. Prior to the war King Edwards were favoured on the black fen soils which gave heavy yields of only moderate quality, and in years when total production of potatoes was in excess of requirements it was difficult to market other varieties grown on this land. King Edwards were also favoured on the Limestone and Wolds; the Limestone Edwards were particularly noted for quality and found a ready market.

With the increased war-time demand growers have switched over to Majestics which because of the higher yields gave them a greater return, and it is to be expected that the present position will continue unless either a considerably higher price is offered for King Edwards or the market conditions change to such an extent that there is no longer an assured market for all potatoes grown.

TABLE 15.
PROPORTION OF TWO CHIEF VARIETIES OF MAINCROP
COSTED IN 1932, 1933, 1944 AND 1946.

Year	Total Acres*			Percentage of Acreage.		
	Majestic	King Edwards	Others	Majestic	King Edwards	Others
1932	181½	484	434	16½	44	39½
1933	344	677½	216	28	54½	17½
1944*	109	20	75½	53½	9½	37
1946	341	55½	78½	72	11½	16½

*Data were not available for the whole sample in 1944.

On the Warp soils Majestics were the only variety grown on the majority of the farms in 1932/33 and there has been little change since but on the other soils the change has been very great. Four out of eight Limestone farmers grew some King Edwards, but even here Majestics were the most popular variety. In both 1944 and 1946 most of the potatoes were maincrop and in the latter year the only other maincrop varieties grown were Gladstone (30 acres), Arran Peak (20 acres) and Doon Star (18 acres) out of a total of 475 acres costed.

SOURCES OF SEED POTATOES.

Another factor which affects yields is the type of seed used. Unfortunately full details are not available for 1944 but in 1946 it was found that of the 46 crops Scotch seed was set in 27 cases, once grown in 18 cases and twice grown in one case only.

TABLE 16.
PROPORTION OF DIFFERENT CLASSES OF SEED
AND AVERAGE COSTS.

Year	Proportion of Different Classes of Seed Utilised.			Average Cost of Seed per acre (Cost on farm).
	Scotch	Once grown	Twice grown	
1932	25	37	38	143s. 0d.
1933	40	38	22	84s. 0d.
1946	59	39	2	231s. 0d.

The abnormally high cost of seed in 1932 was undoubtedly the reason for the low proportion of Scotch seed used in that year, but Makings (1) states that in 1933 the proportion was above normal. Although the 1946 sample is small the above figures indicate that farmers appreciate the economic value of good seed and are prepared to pay for it. It is particularly noteworthy that only one plot was planted with twice grown seed, and Scotch seed was being used simultaneously on this farm. Costs in 1946 ranged from £6. 15s. 0d. to £13. 12s. 0d. per ton for Scotch Arran Pilot (cost on the farm) and seed rates were normally between 20cwts. and 30cwts. per acre. The lowest cost per acre was on a farm where Scotch thirds were planted at the rate of 6½cwts. and a cost of only 81s. 3d. per acre, compared with an average cost of over £10 per acre.

Op. cit.

The increasing proportion of Scotch seed being used in England and Wales is illustrated by the following table :

TABLE 17.
POTATOES FOR SEED :
SCOTTISH EXPORTS COMPARED WITH ENGLISH POTATO ACREAGE

Year	Quantity of Scotch Seed used on farms in England and Wales ('000 tons).	Year	Acreage grown in England and Wales ('000 acres).
1938-39	75	1939	454
1939-40	121	1940	537
1940-41	192	1941	777
1941-42	341	1942	898
1942-43	405	1943	957
1943-44	443	1944	980
1944-45	376	1945	983
1945-46	354	1946	1,009
1946-47	348	1947	941

Source : Ministry of Agriculture and Fisheries.
Department of Agriculture for Scotland.

If we assume a level seed rate for Scotch seed planted of 20cwts. per acre throughout the period we find that sufficient seed was imported into England and Wales for only about 16% of the acreage grown in 1939, and that this proportion rose steadily to 25% in 1941, 38% in 1942 and 45% in 1944. Thereafter the proportion fell and ranged from 35% to 38% in the three years 1945 to 1947 inclusive. The peak in 1944 corresponds with the peak output of Scotch seed in the previous year and although the acreage under potatoes in England and Wales increased slightly in each of the two succeeding years the imports of Scotch seed declined. After 1943 the controlled price of Scotch seed potatoes failed to encourage seed growers to produce up to total requirements. From 1941 to 1943 there was an average output of seed in Scotland of over 3.4 tons for every acre of potatoes grown, compared with an output of about 2 tons in 1938. (In 1938 the total acreage was much lower). In 1944-46 the output remained at about 3 tons of seed per acre of potatoes grown, and in these years the total acreage and the total output were declining. Prices have been steadily rising since 1939, apart from a slight reduction for the 1941 crop. Riddle sizes for seed remained constant for most varieties from 1939 onwards with slight increases in the minimum size for a few varieties, and only in one year, 1945, was the sale of ware potatoes authorised for use as seed. The fact that Scotch seed production continued to fall after growers had had this evidence of the shortage of seed potatoes confirms the view that the price incentive for seed production was insufficient even to maintain supplies.

COSTS ON THE WARP IN 1944 AND 1946.

Detailed results on all farms in 1946 are given in the appendix. Table 18 gives the average costs of those cases in which the whole crop was sold in 1946-47. In addition four farmers lost the whole or part of their crops in the floods of 1947. The costs on these farms are not comparable since the potatoes which were washed away could not be dressed or handled. Their main items of cost did not, however, differ greatly from the average of the others in the group.

The costs on the Warp were above the average in both years, but yields were higher, bringing the cost per ton down to below those of other groups in both years. Preliminary and summer cultivations were high in this area, a result of the high level of farming: and harvesting and dressing costs were above average which would be expected from the high yields. As usual there was a considerable range of costs in the group, from £30 to nearly £55 in 1946, and a spread from 63s. 0d. to 97s. 0d. in the cost per ton, but most of the costs were near the average. Labour was the biggest single item of cost and it is interesting to note the big increase in ordinary wage rates. These operations normally involve casual labour, the cost of which has increased to a greater extent than that of regular labour.

TABLE 18.
POTATO COSTS ON THE TRENT WARPLANDS IN 1944 AND 1946.

No. of fields costed Acreage costed	1944	1946
	8 67½	8 111½
Costs per acre :		
Preliminary cultivations	£ 2 7 6	£ 2 6 10
Application of farmyard manure	1 2 5	18 10
Application of artificials	2 9	5 3
Setting and covering	1 4 1	1 15 3
Summer cultivations	2 3 2	2 2 6
Harvesting	6 7 3	8 11 5
Dressing and loading	3 9 9	5 7 6
Total Labour	16 16 11	21 7 7
Seed	12 7 2	12 15 2
Farmyard manure	4 15 4	5 0 0
Artificials	5 16 9	7 7 6
Straw	18 1	1 0 6
Rent and drainage rates	2 15 9	2 19 9
Direct Costs	43 10 0	50 10 6
Less Manurial residues	3 7 0	4 4 0
Cultural residues	2 2 0	1 14 3
Total	£38 1 0	£44 12 3
Yield	11 tons 1½ cwts.	10 tons 19½ cwts.
Cost per ton	£3 8 8	£4 1 4

COSTS ON THE FENS IN 1944 AND 1946.

In both years farms in this group have had to be excluded from the summary because the crops were sold direct from the fields, cutting out the expense of clamping. The average saving in cost was about 6s. 0d. per ton in 1944 and 14s. 0d. per ton in 1946 for labour and in addition the cost of straw averaging 1s. 6d. and 2s. 6d. per ton of potatoes. The range of costs per acre was not as wide as that of the Warp group and generally speaking was lower. The 1946 sample contained more farms on poorer Fen soils than did the 1944 sample and this is reflected in the rents paid, and in the considerably lower yield in the later year. Cheaper seed was used in both years than on the Warps and is one of the likely causes of the lower yields. Potatoes normally followed rotational grasses, the rotation in the major potato districts being based on spring corn, rotational grasses, potatoes, wheat, with heavy manuring of the potato crop. The main features of the costs are similar to the Warp group, but the lower yields in 1946 have increased the cost per ton in that year, and resulted in a wider gap between the costs per ton between the two years.

TABLE 19.
POTATO COSTS ON THE WITHAM FENS AND THE FEN
MARGIN IN 1944 AND 1946.

	1944	1946
No. of fields costed	7	9
Acreage costed	58	121½
Costs per acre :	£ s. d.	£ s. d.
Preliminary cultivations	2 4 3	1 16 3
Application of farmyard manure	1 11 7	1 3 5
Application of artificials	3 6	4 8
Setting and covering	1 5 11	1 13 4
Summer cultivations	1 11 9	1 17 1
Harvesting	7 10 6	9 16 5
Dressing and loading	3 14 11	4 13 7
Total Labour	18 2 5	21 4 9
Seed	10 8 7	10 8 0
Farmyard manure	2 8 6	6 11 8
Artificials	5 16 5	6 10 9
Straw	13 8	1 0 11
Rent and drainage rates	2 17 10	2 9 1
Direct Cost	40 7 5	48 5 2
Less Manurial residues	3 0 0	4 12 8
Cultural residues	2 2 3	1 5 10
Total	£35 5 2	42 6 8
Yield	9 tons 1 cwt.	8 tons 11 cwt.
Cost per ton	£3 18 0	£4 18 9

COSTS ON THE LIMESTONE AND WOLD IN 1944 AND 1946.

In this group too, part of the crop was sold direct from the field, with a saving in costs similar to that noted above. Of the rest the comparison is very instructive in that the 1944 and 1946 samples show considerable difference in the preparation and the treatment of the crop. The 1944 sample is remarkable for the low cost per acre, almost every every item being considerably below the 1946 level. Labour costs were just over three-fifths and seed cost under three-quarters of the corresponding items in 1946, and the final costs were £29 7s. 8d. and £44 12s. 4d. per acre respectively. Unlike the Fen and Warp groups the samples from the Limestone and Wolds show a higher yield in 1946 than in 1944. The yield however, is well below that obtained on the Warp soil at a similar cost and there can be no doubt that the increased cost in 1946 justified by the increased return. On the other hand, it is to be due to increased input was not noticed that the individual cases showing the lowest yields in both years were associated with low costs per acre and high costs per ton, and on these farms there is no doubt that a greater expenditure on the crop would have been repaid in greater yields and greater profits.

TABLE 20.
POTATO COSTS ON THE LIMESTONE AND WOLDS
IN 1944 AND 1946.

	1944	1946
No. of fields costed	7	12
Acreage costed	135	163
Costs per acre :	£ s. d.	£ s. d.
Preliminary cultivations	1 5 10	2 8 1
Application of farmyard manure	1 4 3	2 2 3
Application of artificials	3 8	4 8
Setting and covering	1 5 0	1 15 10
Summer cultivations	1 11 3	2 4 1
Harvesting	6 2 4	9 11 10
Dressing and loading	3 9 2	6 2 10
Total Labour	15 1 6	24 10 7
Seed.....	7 11 9	9 18 0
Farmyard manure.....	3 8 0	7 10 6
Artificials	5 11 8	7 6 10
Straw	11 6	17 6
Rent	1 4 0	1 5 11
Direct Cost	33 8 5	51 9 4
Less Manurial residues	2 17 6	5 5 2
Cultural residues	1 3 3	1 12 0
Total	£29 7 8	£44 12 2
Yield	7 tons 0 cwts.	7 tons 19 cwts.
Cost per ton	£4 4 0	£5 12 0

COSTS IN 1932, 1933, 1944 AND 1946.

A slight adjustment of the method of compilation in later years has been necessary to make them suitable for comparison with those for 1932/33, and the main value of the comparative tables is to indicate the changes which have occurred in the conditions under which potatoes were produced. For the earlier years five sets of figures are given. The Fen group of 1944 and 1946 corresponds in part to both the Fen Peat and the Skirt of the earlier enquiry. Similarly, the Limestone and the Wold of 1932 and 1933 correspond to the amalgamated group of the later years.

The changes in costs are largely what could be expected. Labour costs have more than doubled, any saving which has been made by increased mechanisation being offset by the higher relative costs of casual labour in the later period as well as by the increased wages paid to the regular workers. Seed costs and manuring were relatively high in 1932, the former as a result of the poor crop and high prices in 1931, the latter being the common reaction of most farmers who try to increase yields in a year following one in which prices are good thereby increasing the risks of a collapse in prices. The cost of seed and the lower expenditure on manuring in 1933 are both a reflection of the low prices received for the 1932 crop.

By 1946 seed costs were again high, partly due to increased prices and partly due to the increased use of Scotch seed which is more costly per ton than English seed and involved the payment of heavy transport charges. The cost had in fact more than doubled between 1933 and 1946, and the increased cost of manuring was proportionately greater than the increase in prices of fertilisers indicating that farmers were in the latter year manuring more heavily. The final costs for the different years are summarised in Table 21.

TABLE 21.
FOUR YEARS COSTS OF POTATOES.

Year	Average cost per acre	Average yield	Average cost per ton
	£ s. d.	tons	£ s. d.
1932	22 7 0	6.5	3 8 0
1933	20 2 0	7.7	2 13 0
1944	38 9 0	9.0	3 17 5
1946	43 17 0	8.7	5 1 0

These figures illustrate the trend of costs and the great influence of season and yield on the final cost per ton and the level of profit which the crop will return to the grower.

Tables 45, 46 and 47 in appendix give details by individual farms for 1946.

TABLE 22.
 POTATO COSTS ACCORDING TO SOIL TYPE IN 1932, 1933, 1944 AND 1946
 (EXCLUDING COSTS OF DRESSING AND MARKETING).

Costs per acre.

Soil Type	Preliminary Cultivations*	Setting and Covering	Summer Cultivations	Lifting and Clamping	Total Labour	Manures and Artificial (adjusted for residues)	Seed	Land Charges	Total Direct Field Costs
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1932									
Warp	2 9 0	11 0	1 6 0	2 9 0	6 15 0	4 6 0	9 5 0	2 7 0	22 13 0
Skirt	2 1 0	13 0	1 6 0	3 4 0	7 4 0	4 0 0	7 9 0	2 14 0	21 7 0
Fen Peat	1 16 0	11 0	1 7 0	3 5 0	6 19 0	3 2 0	6 14 0	2 15 0	19 10 0
Limestone	2 4 0	11 0	1 5 0	2 11 0	6 11 0	4 15 0	5 15 0	1 6 0	18 7 0
Wold	1 19 0	9 0	1 0 0	2 19 0	6 7 0	4 2 0	5 12 0	1 4 0	17 5 0
1933									
Warp	2 9 0	11 0	1 4 0	2 9 0	6 13 0	3 7 0	5 2 0	2 5 0	17 7 0
Skirt	2 0 0	12 0	1 3 0	3 4 0	6 19 0	3 3 0	4 4 0	2 14 0	17 0 0
Fen Peat	1 17 0	10 0	1 8 0	2 16 0	6 11 0	2 3 0	3 19 0	2 14 0	15 7 0
Limestone	2 0 0	10 0	1 2 0	2 13 0	6 5 0	3 19 0	3 10 0	1 5 0	14 19 0
Wold	2 9 0	10 0	1 2 0	2 14 0	6 15 0	3 7 0	3 11 0	1 3 0	14 16 0
1944									
Warp	3 12 8	1 4 1	2 3 2	6 7 3	13 7 2	5 3 1	12 7 2	2 15 9	33 13 2
Fen	3 19 4	1 5 11	1 11 9	7 10 6	14 7 6	3 2 8	10 8 7	2 17 10	30 16 7
Limestone & Wold	2 13 9	1 5 0	1 11 3	6 2 4	11 12 4	4 18 11	7 11 9	1 4 0	25 7 0
1946									
Warp	3 10 11	1 15 3	2 2 6	8 11 5	16 0 1	6 9 3	12 15 2	2 19 9	38 4 3
Fen	3 4 4	1 13 4	1 17 1	9 16 5	16 11 2	7 3 11	10 8 0	2 9 1	36 12 2
Limestone & Wold	4 14 10	1 16 5	2 4 1	9 14 6	18 9 10	7 17 7	9 19 6	1 5 9	37 12 8

* Including the application of manures.

SUGAR BEET GROWING IN KESTEVEN AND LINDSEY.

Sugar beet growing is comparatively new to this country. Early attempts at introduction failed and it was only in 1912 that the first modern factory was built. The acreage grown was about 4,000 acres in 1912 and 1913, mainly in Norfolk and Suffolk. The crop was temporarily eclipsed during the first world war, but, supported by subsidy, rapidly grew in favour after 1920, and in 1930 nearly 350,000 acres were grown in England and Wales. The crop suffered a set-back in 1931 and 1932 but thereafter until the outbreak of war in 1939 the acreage was consistently above 300,000 acres. The crop spread rapidly over the eastern arable counties and over 46,000 acres were grown in Kesteven and Lindsey in 1930.

TABLE 23.
SUGAR BEET ACREAGES 1919-1946

Period	Seven Year Average in '000 acres		
	England and Wales	Kesteven	Linsdey
1919-25	16	1.6	0.9
1926-32	227	13.0	15.5
1933-39	349	20.2	25.7
1940-46	390	20.9	29.8

After 1939 sugar beet became a priority crop next in importance to potatoes and fodder crops used for milk production. Expansion of output was limited to the capacity of the sugar beet factories and it is not surprising that there was no such phenomenal rise in acreage as has been noted with potatoes. The rise was steady up to 1944 when the acreage in England and Wales was 418,000, some five per cent above the pre-war maximum of ten years earlier. A slight fall was recorded in 1945 but in 1946 a new high level was reached of 424,000 acres. In 1947, largely influenced by difficult weather conditions, the area fell below 400,000 acres for the first time since 1941. The crop still has a high priority and it is expected that in 1948 the acreage will be comparable with that of 1946. The changes in Lindsey followed very closely the national pattern but in Kesteven conditions were rather different. The acreage there fell steadily from 1935 to 1940, and although after that year there was a relatively greater increase than was found elsewhere, the pre-war maximum was never reached. Part of the explanation for this is no doubt the greater concentration on potatoes in Kesteven and the greater increase in this crop already noted.

Prices for sugar beet have moved fairly closely with the general price index for agricultural produce. In 1935-37 the average price for clean beet was about 40s. 0d. per ton. By 1942 it was 86s. 0d. and although prices fell in 1943 and 1944 there were further rises in 1945 and 1946, and in the latter year the price was nearly 91s. 0d. per ton.

Yields on the other hand have varied very considerably. Over the twelve years 1935-46 inclusive, the national average was once below 7 tons, once below 8 tons, once below 9 tons and twice above 10 tons. In the other seven years it fell between 9 tons and 10 tons.

In 1945 when the cost of growing sugar beet was investigated the yield was moderately good, coming after a poor harvest in 1944 and before the excellent crop of 1946. Costs were collected in four areas, the Warps and Fens on the one hand, and the Wolds and Limestone on the other. In all groups yields were good although they were lowest on the thin wold soils. The group averages of the other areas are above the national average. The samples from the Warp include one case of virtual failure and this had a considerable influence on the average yield. The cost figures are not remarkable: on all farms the level of cultivation has been high and on practically all a high level of manuring, mainly artificials, has been practised. The most variable item (the cost of freightage) does illustrate clearly, however, the advantage of close proximity to the factories.

SUGAR BEET GROWING IN 1928 AND 1945.

Table 24 gives a summary of an investigation made by this Department in 1928 together with a comparable summary of the four 1945 groups. In 1928 sugar beet was a new crop to many growers and it is not surprising that the four groups show very different features. It cannot therefore be assumed that their costs were typical of the period. The relatively high labour costs, however, are striking, and the costs per ton came very much closer to the corresponding figures for 1945 than would have been expected.

The table analyses the costs and returns in the two years but it must be emphasised that overheads (including hedging and ditching) have been excluded from the costs together with managerial labour, interest on capital, etc. After making allowances for this, two of the four cases in 1928 showed a good margin of profit for that period while in 1945 there was a reasonable average profit for all groups. It will be seen from the detailed tables in the appendix that only in one case, the only failure recorded, was the crop grown at a loss and that in general sugar beet growers can be satisfied with their results.

TABLE 24.

SUGAR BEET GROWING COSTS IN 1928 AND 1945.

(a) FOUR FARMS IN 1928.

Farms.	A.	B.	C.	D.
Soil Type :	Sand	Heavy Loam	Black Fen	Loam over chalk
Labour to Harvesting	£ s. d. 4 18 2	£ s. d. 5 19 9	£ s. d. 8 9 6	£ s. d. 4 17 5
Harvesting cost	1 15 8	4 9 11	5 10 3	2 17 0
Total Labour	6 13 10	10 9 8	13 19 9	7 14 5
Seed	9 0	14 2	6 2	7 11
Manuring	5 9 5	3 14 0	6 18 0	3 19 4
Rent and Rates	1 0 2	1 14 9	3 6 9	2 3 8
Freightage	2 16 1	2 11 4	4 9 6	3 11 8
Gross Cost	16 8 6	19 3 11	29 0 2	17 17 0
Residual Credit	4 12 0	3 17 0	6 0 0	3 8 0
Net Cost	11 16 6	15 6 11	23 0 2	14 9 0
Yield	5tons 10cwts.	9tons. 1cwts.	12tons 4cwts.	6tons 10cwts.
Sugar Content	17.2%	17.6%	17.7%	17.2%
Cost per ton	43s. 0d.	34s. 0d.	38s. 0d.	44s. 6d.

(b) AVERAGE OF FOUR GROUPS IN 1945.

Group.	Warp	Fen	Wold	Limestone
Labour to Harvesting	£ s. d. 7 11 3	£ s. d. 8 7 2	£ s. d. 8 7 3	£ s. d. 8 14 4
Harvesting Cost	7 7 6	9 9 9	8 10 6	8 18 10
Total Labour	14 18 9	17 16 11	16 17 9	17 13 2
Seed	17 1	19 6	16 10	16 6
Manuring	5 19 7	6 7 0	7 12 1	6 16 2
Rent and Rates	1 18 0	2 7 4	1 5 5	1 1 10
Freightage	3 14 1	4 5 0	3 16 3	3 18 0
Gross Cost	27 7 6	31 15 9	30 8 4	30 5 8
Residual Credit	4 8 6	6 9 11	6 3 1	6 7 8
Net Cost	22 19 0	25 5 10	24 5 3	23 18 0
Yield	9tons 11cwts.	11tons 18cwts.	8tons 10cwts.	11tons 9cwts.
Sugar Content	17.1%	16.3%	16.6%	17.0%
Cost per ton	48s. 0d.	42s. 6d.	57s. 0d.	41s. 6d.

VEGETABLE CROP PRODUCTION COSTS.

THE IMPORTANCE OF THE VEGETABLE CROP.

Vegetables are not common farm crops although their introduction into the rotations of arable and mixed farms has been progressing steadily for the last twenty years or so. Because of their perishable nature most market garden crops were, up to about 1930, grown near the large centres of population or, in suitable areas near railways serving these centres. Depression of agricultural prices provided the incentive, and increased mechanisation and rapid road transport the means, for farmers to invade the market with vegetable crops. The mixed or arable farm had many advantages which made vegetable production an attractive proposition. Farm tractors, with suitable equipment, were used to reduce costs. Farmyard manure was available. Better rotations were practised than on the specialist market garden holdings. The less perishable crops had already become localised on suitable land: carrots on sandy and silty soils and celery on peaty soils. The production of green vegetables on general farms increased greatly between 1930 and 1939 usually on well drained land of low altitude. Because earliness is important light loamy soils were favoured and where these conditions were found vegetable production provided farmers with an important source of income at a time when the prices of their main arable sale crops were low.

The acreage of vegetable crops for human consumption other than potatoes was not large in 1939. In that year occupiers of land of one acre and upwards returned on June 4th only about 250,000 acres under the main vegetable crops. Even allowing for double cropping and for crops not separately returned, the total acreage of commercially grown vegetable crops was probably under 300,000 acres. There was also a considerable acreage on allotments and gardens, grown for direct consumption. An area of 300,000 acres is only a small fraction of the arable acreage of England and Wales, which was nearly 9,000,000 acres in 1939; but the value of the vegetable output was proportionately much greater and averaged over £15 million per annum between 1930/31 and 1938/39 out of a total average agricultural output¹ of £205 million per annum.

Vegetable crops, with the exception of onions, dried peas and tomatoes have always been almost entirely home produced. Since 1939 there has been a general increase in the acreage under all the main vegetable crops except beans but the acreage of asparagus has fallen, and that of celery has fluctuated. The greatest proportionate increases have naturally been in peas, onions and tomatoes, owing to restrictions in imported supplies. The acreage increase of the other vegetables for which data are available has been about 50% which gives an approximate measure of the increased output and increased consumption which had been reached by 1947. It should be noted

¹.—The output represents the estimated value of sales by farmers for the use of the non-farming community, together with the estimated quantity of home-grown produce consumed in farm households.

that this increase in commercial production has been accompanied by a very considerable increase in domestic production.

The marketing of vegetables has always been a haphazard affair. Since British growers have a virtual monopoly of the market and since yields vary between very wide limits, good seasons have resulted in gluts and low prices, while in bad seasons there has been scarcity and high prices. In addition marketing has been badly organised. Market intelligence is undeveloped with the consequence that local gluts and shortages with wide price fluctuations are constantly occurring. The perishable nature of the crops makes organised marketing more necessary, because growers must harvest when the crops are ready, and, with some vegetables at least, cannot afford to wait because of the risk of deterioration of the whole crop.

TABLE 25.
ACREAGE OF VEGETABLES FOR HUMAN CONSUMPTION
1935-1947 IN ENGLAND AND WALES.

Crop.	Total Acreage of each Crop ('000 acres) at June 4th.				
	Average of years 1935-1939	Average of years 1940-1942	Average of years 1943-1945	1946	1947
Brussels Sprouts	36.2	32.7	37.8	46.2	50.7
Cabbage, Savoys, etc.	41.3	47.8	59.2	66.9	77.7
Cauliflower & Broccoli	19.5	17.3	24.5	33.6	32.4
Carrots	15.6	28.8	33.5	39.9	33.2
Parsnips	(a)	5.5	6.5	6.0	5.3
Turnips and Swedes	(a)	10.4(b)	11.7	11.1	12.7
Beetroot	(a)	10.6(b)	11.1	13.7	10.9
Onions....	1.7	8.7	13.0	13.2	11.3
Beans	16.4	14.8	17.4	19.0	16.3
Peas	87.0	126.7	180.4	239.6	241.6
Asparagus	2.5	2.1	1.5	1.7	1.7
Celery	6.4	4.3	6.0	7.3	6.4
Lettuce	4.9	5.0	6.8	8.8	8.4
Rhubarb	7.4	6.2	6.4	7.6	8.0
Tomatoes (in open)	0.3	1.6	4.5	3.8	2.8

(a)—figures not available.

(b)—average of two years 1941 and 1942.

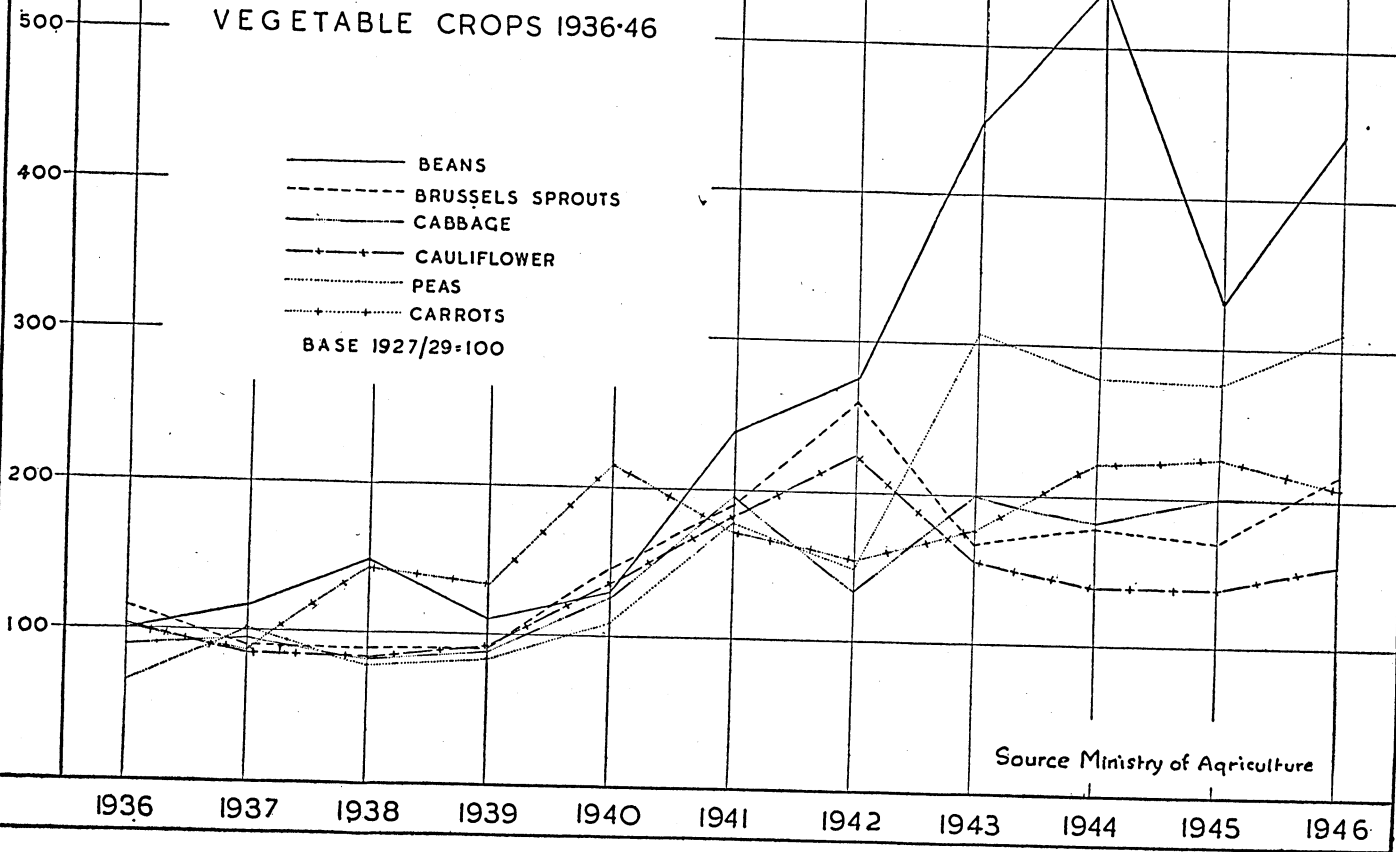
Source : Ministry of Agriculture & Fisheries.

The increasing demand, coupled with the falling value of money after 1939, is responsible for the general upward trend of prices for the main vegetables shown in chart 4. The effects of good and bad yields are clearly shown in the violent fluctuations from year to year in the prices for the different crops. There were, of course, fluctuations within the year; the chart shows the price indices calculated from the average prices for the particular years. These fluctuations in price re-act on the growers, a fall in price normally resulting in a reduced acreage under a given crop in the following year and vice versa. These fluctuations are a marked feature of vegetable production. They have been masked in the table of vegetable acreages by the taking of period averages in order to show the general trend for each crop.

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CHART 4

PRICE INDICES OF CERTAIN
VEGETABLE CROPS 1936-46



Source Ministry of Agriculture

THE HORTICULTURAL FOUR YEAR PROGRAMME.

The Minister of Agriculture in January 1948 announced his plan for the development of horticultural output over the next four years. According to the plan no further increase in the vegetable acreage is required but emphasis is laid on an increased production of early vegetables and on improvement in the quality of the product. Increased output is to be achieved by increasing yields by improved cultural methods and better control of pests and diseases. Increased output per acre should also go some way towards providing more of the better quality products since high quality and high yields normally go together. It will be necessary, however, to improve marketing and to standardise grading if quality produce is to secure a premium price. A committee¹ has already been appointed to consider the problem of the grading and packing of horticultural crops. This should secure the support of growers as experience shows that proper grading results in increased returns to growers and provides a price differential which will pay for the higher quality produced.

VEGETABLE GROWING IN THE EAST MIDLANDS.

During the period 1942-43 small scale investigations were made into the cost of growing Savoys, Spring Cabbages, Carrots and Green Peas. It is recognised that these studies are inadequate as a basis for generalisation about the economics of vegetable crops, but as data on this subject are relatively scarce it has been considered worth while to present the results as a section of this report. In these studies the samples include both farmers and market gardeners. It is a feature of the development of arable farming in recent years that market garden crops have been grown to an increasing extent on arable and mixed farms in competition with the specialist market gardeners. It is not possible from the published statistics to estimate the extent of this development but the position clearly varies greatly from crop to crop.

Since 1939 there has been a great expansion in the production of vegetable crops. It has already been mentioned that the potato crop has been doubled and the same is true for the other vegetables for human consumption (based on the June 4th acreages). Progress has been uneven and subject to considerable fluctuations according to the season and the expected demand.

In the period 1935-39 no less than 10% of the acreage under carrots in England and Wales was concentrated in Lindsey, a further 4% in Nottinghamshire and about 2% in Kesteven, while practically

1. In September, 1947 a Committee fully representative of producers, the wholesale and retail trade, Agricultural Research Stations, the Trades' Unions and the Departments concerned, was set up by the Ministry. The tasks of this Committee are :—

- (i) to define national grades for selected fruits and vegetables, starting with apples and pears, root vegetables, tomatoes and lettuce;
- (ii) to consider methods for facilitating the effective use of grades and standards.

Technical sub-committees are already at work on defining grades for apples and pears and root vegetables.

no carrots were grown in either Derbyshire or Leicestershire. The carrot crop is, in general, grown on the general farm. If practically none are grown in Derbyshire or Leicestershire then it follows that practically none are grown by the market gardeners in these counties. (These and subsequent figures refer to holdings over one acre only and to that extent the acreages are below the true figures).

The carrot acreage in 1941 which was more than double the highest of the period 1935-39, suffered a set-back in the two succeeding years and then rose to a maximum in 1945 and 1946 of over 250% of the 1935-39 average. In 1947 there was a further set-back and the acreage in that year was only twice the pre 1940 figure but this fall was probably due to the difficult weather conditions prevailing during 1947.

With green peas the position was quite different. Green peas are only a small proportion of the total pea crop, the bulk of which is grown for harvesting dry, mainly for human consumption but also for stock feed. Even so the area of green peas in England and Wales averaged nearly 60,000 acres in 1935-39 against 16,000 acres of carrots. Lindsey again was an important growing area with over 5% of the national acreage. Nottinghamshire was also important with nearly 3½% but Kesteven grew only 1% and Leicestershire and Derbyshire each grew between ½% and 1%.

Prior to 1941 statistics of peas grown were analysed under three headings: "stock-feed", "green for market" and "for canning or packing green or dried", but from 1941 onwards growers were asked to distinguish two categories in place of the third category of the previous schedule: "green for canning" and "harvested dry".

It is probable that prior to the revision some of the peas grown for sale to canners were included under the heading "green for market" and it would be unwise to treat figures under this heading as a continuous series. Some of the published figures are summarised below. The most surprising features are the great development of the market for dry peas, and the apparent stability of the market both for green peas and for canning peas at a time when the demand for most other vegetables was expanding. No doubt availability of tin supplies affected the expansion of the canning trade.

TABLE 26.
PEA GROWING IN ENGLAND AND WALES, 1935-1947.
(Average acreage in '000 acres).

Period.	For Stock Feed	For Canning or Packaging Green or Dried		Green for Market
1935-37	41.5	26.7		59.0
1938-40	37.8	32.5		57.1
	For Stock Feed	Green for Canning	Harvested Dry	Green for Market
1941-43	65.2	16.8	80.1	47.6
1944-46	46.1	16.6	132.5	62.2
1947	35.8	20.1	170.3	51.5

In the East Midlands the acreage of green peas has remained fairly static during the 1940's and the same is true of the acreage of canning peas: In the case of green peas for the market, Lindsey had the greatest acreage followed by Nottinghamshire and Kesteven. The importance of these counties as producers of green peas for canning was in the order Lindsey, Kesteven, Nottinghamshire. Leicestershire and Derbyshire were both less important. The growing of peas for harvesting dry developed greatly during the 1940's however, in all the counties mentioned except Derbyshire. The acreage in Lindsey reached 38,000 in 1946 and it was nearly 22,000 in Kesteven in 1947, both of which figures are greatly above the pre-war level. Nottinghamshire and Leicestershire showed equally great proportional increases to reach nearly 4,000 and 3,000 acres respectively in 1947, but in Derbyshire the acreage had only once exceeded 25 acres, in 1946, and fell to 11 acres in 1947. Rutland, the smallest county, was not an important vegetable growing area prior to 1939. Peas for harvesting dry have been developed since then and in 1947 the relatively high acreage of over 3,000 acres was grown. Other peas for human consumption grown on a very small scale have not increased in importance.

Cabbage growing is far more difficult to analyse. Prior to 1940 information was only collected at June 4th of each year and at that date much of the land destined to be planted with winter and spring greens would be under some other crop. The June acreages, however, give a fair indication of the extent of cabbage growing in different counties, if it is borne in mind that a considerable acreage will be added each year for winter and spring greens. The average for 1935-39 amounted to a little over 40,000 acres in England and Wales of which only $1\frac{1}{2}\%$ was in Lindsey, about 1% in Nottinghamshire, Derbyshire and Leicestershire and only 0.3% in Kesteven (an average of only 120 acres in that county). This much wider spread over the different counties is consistent with the suggestion that the production of cabbages and allied crops for the vegetable market was still primarily a job for the market gardener and had been taken up by farmers in this province to a less extent than was the case with carrots or peas.

Cabbage growing has developed steadily, but unevenly, up to 1947 when the June 4th acreage was about 80% above the 1935-39 average and almost double the acreage in 1935. In Lindsey, where as we have seen, carrot growing was well developed, the acreage had doubled by 1943 and in the period 1944-47 averaged over three times the 1935-39 acreage. In the neighbouring division of Kesteven the acreage rose from an average of only 120 acres to 480 in 1944 and 914 in 1947. Derbyshire, Leicestershire and Nottinghamshire all show fairly steady increases and the acreages of cabbages in all cases about doubled during the period under review, so that they retained their previous relative importance as contributors to the national acreages.

The June 4th figures for cabbages include savoys, green kale and sprouting broccoli for human consumption. During the period beginning in 1940 additional returns were made by growers at September 4th, December 4th and March 4th. At the first two of these dates

questions were asked which throw some light on the acreages of cabbages, savoy and spring cabbage actually grown. Under the circumstances prevailing changes and improvements were made in the collection of the data, so that considerably greater detail is available for the later years. The crop is grown all the year round, and the June, 1947 figures reveal that about 17% of the acreage returned at the date was for spring cabbages planted the previous year. A comparison of acreages under cabbages in December 1946 and June 1947 shows that 60% of the spring cabbage crop had been marketed by the latter date. When account is taken of the acreages of cabbages returned by farmers at each of the quarterly census dates it appears that the overall annual acreage planted is from 25% to 30% greater than the acreage returned in June. It would be unsafe to attempt to try to approximate more closely than this as there is a considerable variation between the June, September and December returns which suggests that the growers have been inconsistent in returning their acreages under the different headings such as summer, autumn, winter and spring cabbages, each of which figures in the returns. The distinction is, in any case, somewhat arbitrary.

A further improvement made in June 1947 was the separation of green kale and sprouting broccoli from the cabbages and these, in 1947, occupied about 3½% of the cabbage acreage as returned in June of the earlier years.

TABLE 27.
ANALYSIS OF THE CABBAGE AND SAVOY ACREAGE GROWN
IN 1947.

Crop.	Proportion of acreage of each crop returned at at 4th June, 1947	Estimated Proportion of acreage of each crop grown for harvesting in 1947
	%	%
Spring Cabbage(planted 1946)	17	34
Summer Cabbage	14	12
Autumn Cabbage	11	8
Winter Cabbage	21	17
Autumn Savoy	9	7
Winter Savoy	28	22
	100	100

The large proportion of winter, and particularly spring greens is not surprising in view of the lack of competition from other vegetables.

The information relating to costs only covers a part of this field, namely savoy in 1942-3 and 1943-4 and Spring Cabbages in 1943, and it is recognised that a large section of the cabbage growing industry was left untouched by these small enquiries.

CARROT GROWING COSTS IN 1943.

Twenty records were completed in this enquiry, nineteen by occupiers of mixed arable farms and one by a market gardener (No. 18). In addition two complete failures were recorded, and in these cases catch crops were taken. (The direct loss, in these cases, due to the cost of operations carried out for the carrot crop and the cost of the seed, would have been about £6 per acre). All growers except two were experienced in carrot growing and all were farming light soils suitable for the crop. Most of the farms were on the Nottinghamshire sandlands, overlying the Bunter Sandstone, but the sample was extended to include two farms on the Lindsey Limestone (Nos. 14 and 15) and two farms where the soil was predominantly peat (Nos. 7 and 20).

The year 1943 was not in general a good year for carrots although two growers returned yields of 20 tons. The average yield was 13 tons, *including* second grade carrots which would amount to something like ten per cent of the crop in such a season. The wide variation in costs per ton is in part the result of the season. The actual cultivations carried out are normally governed by the growers expectation of yield and in a bad season the specialist may well discover that the extra attention given to the crop is poorly repaid. In a normal season he will generally secure an above average crop. No. 19 is a case in point, with the highest cost per acre and only an average crop, and it is known that he normally secured a yield well above the average. Even in those cases where costs per ton were highest there was opportunity for a reasonable profit. Records of cash returns were not obtained, but in 1943 there was a ready market for the crop. Growers prices were limited up to the end of October, to a maximum of £7 and a minimum of £6 10s. 0d. per ton. Prices would normally fall during November and December and rise again in the new year. About half the crop had been sold off the recorded farms by the end of December and it is likely that the average returns would not be less than £5 per ton. After paying clamping costs, haulage and overheads (none of which are included in the costs) there would be a margin of profit on all farms and a high rate of return on most.

TABLE 28.

COSTS OF CARROT GROWING IN 1943 (Costs per acre).

No.	Acres Costed	Preliminary Cultivations and Drilling			Cleaning			Application of F.Y.M. & Artificials			Rent			Seed			F.Y.M.			Artificials			Total Growing Cost		
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1	6	4	8	10	2	13	2	1	0	8	1	5	0	3	0	0	3	4	0	3	0	0	18	11	8
2	3	1	15	2	4	3	10		2	6	1	0	0	1	5	6				3	3	0	11	10	0
3	6	6	1	1	7	2	6	1	1	3	1	0	0	2	14	0				4	15	0	22	13	10
4	10	4	13	5	8	0	0		12	4	1	0	0	3	4	0	10	0	0	5	7	6	32	17	3
5	8	1	2	11	6	9	11		10	6	1	0	0	3	8	5	2	10	0	1	14	6	16	16	3
6	3	1	14	4	7	15	10	1	7	5	2	0	0	1	17	2	2	10	0	2	17	0	20	1	9
7	2	1	8	3	2	1	8		4	11	2	0	0	1	18	9				2	11	7	10	5	2
8	4	3	17	9	2	12	8	1	6	8	2	0	0	3	10	0	5	0	0	1	6	0	19	13	1
9	7	1	13	1	6	14	7		7	2	1	0	0	1	16	0				6	17	10	18	8	8
10	10	2	0	0	11	4	4		8	8	1	0	0	1	7	0				4	10	0	20	10	0
11	3	2	0	4	4	3	4	1	10	4	1	0	0	2	3	4	3	4	0	3	0	0	17	1	4
12	5	2	10	5	8	0	0	1	6	2	2	0	0	3	12	0	5	0	0	5	1	0	27	9	7
13	4½	3	19	11	14	18	4	4	9	4	1	0	0	4	8	11	8	0	0	6	11	7	43	8	1
14	4	1	9	3	7	18	7		5	1	1	10	0	4	0	0				9	8	6	24	11	5
15	10	1	15	2	8	17	1		2	9	1	2	6	3	0	0				6	11	9	21	9	3
16	1½	2	16	4	5	8	3	1	9	11	1	0	0	2	17	4	2	0	0	1	13	4	17	5	2
17	5	1	18	0	8	15	10	1	2	7	2	0	0	3	10	0	15	0	0	4	6	0	36	12	5
18	8	1	14	9	3	3	11		13	10	2	0	0	2	14	0				2	8	0	12	14	6
19	20	4	18	0	23	15	0		13	6	1	5	0	2	12	6				5	4	6	38	8	6
20	17½	4	3	1	8	1	2		1	4	2	0	0	5	8	0				1	11	0	21	4	7
Average	7	2	16	0	7	12	0		18	10	1	8	1	2	18	4	2	16	5	4	1	11	22	11	7

TABLE 28—continued

No.	Total Growing Cost b/f.			Net Cultural Residues*			Net Manurial Residues*			Lifting and Bagging			Total Cost			Yield tons	Cost per ton				
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.		£	s.	d.		
1	18	11	8	-	2	13	1	-	1	16	0	16	0	0	30	2	7	20	1	10	2
2	11	10	0	-	15	5	-	1	1	0	9	0	0	18	13	7	10	10	1	17	4
3	22	13	10	-	4	7	8	-	1	11	7	19	0	7	35	15	2	17	2	2	1
4	32	17	3	-	4	3	0	-	4	5	10	21	0	0	45	8	5	21	2	3	3
5	16	16	3	-	3	10	8	-	17	4	13	2	11	25	11	2	12	2	2	7	
6	20	1	9	-	3	2	2	-	1	1	6	13	8	5	29	6	6	13	2	5	1
7	10	5	2	+	18	4		+	2	1	0	14	0	0	27	4	6	12	2	5	5
8	19	13	1	-	2	3	1	-	1	10	0	19	2	10	35	2	10	15	2	6	10
9	18	8	8	-	2	15	5	-	1	4	3	12	10	0	26	19	0	11	2	9	0
10	20	10	0	-	4	8	4	-	1	0	0	13	15	9	28	17	5	11	2	12	6
11	17	1	4	-	1	19	0	-	1	16	0	13	3	6	26	9	10	10	2	13	0
12	27	9	7	-	3	7	10	-	2	9	6	16	0	0	37	12	3	14	2	13	8
13	43	8	1	-	6	6	4	-	4	17	9	17	10	0	49	14	0	18½	2	13	9
14	24	11	5	-	3	2	1	-	2	15	4	20	1	5	38	15	5	14	2	15	5
15	21	9	3	-	3	9	5	-	1	8	9	20	19	9	37	10	10	13	2	17	8
16	17	5	2	-	1	16	10	-	10	0	20	0	0	34	18	4	11	3	3	6	
17	36	12	5	-	3	10	10	-	4	4	4	13	0	0	41	17	3	12	3	9	0
18	12	14	6	+	8	4		+	5	4	0	10	0	0	23	6	10	8	3	10	10
19	38	8	6	-	9	10	0	-	1	8	0	24	10	0	52	0	6	14	3	14	3
20	21	4	7	-	4	0	6	-	8	8	10	0	0	26	15	5	6½	4	2	4	
Average	22	11	7	-	3	3	9	-	1	7	0	15	16	3	33	17	1	13	2	11	6

*Note : + = Debit. - = Net credit.

TABLE 29.
COSTS OF GROWING GREEN PEAS IN 1943 (Costs per acre).

No.	Acres Costed	Preliminary Cultivations	Drilling	Covering	Cleaning	Cultural Residues		Total Cultural Cost	Seed	Rate
						Credit	Debit			
1	16	£ s. d. 1 1 1	s. d. 1 3	s. d. 3 10	£ s. d. —	£ s. d. 9 6	£ s. d. —	£ s. d. 16 8	£ s. d. 4 1 3	cwts. 1½
2	25	12 0	3 6	3 0	9 2	9 8	—	18 0	7 2 6	1½
3	20	19 3	3 6	3 1	1 0 7	18 0	—	1 8 5	6 17 6	1½
4	3	1 3 2	5 4x	12 11+	1 14 3	1 6 3	—	2 9 5	5 15 0	¾
5	1½	2 2 8	6 0	—	2 5 8	1 17 6	—	2 16 10	5 5 0	¾
6	4	1 5 2	2 10	4 0	1 2 3	1 6 4	—	1 7 11	7 16 0	1½
7	12	1 12 10	5 0x	4 3+	1 12 0	1 5 6	—	2 8 7	6 5 0	1½
8	6	1 5 0	3 0	5 1	1 5 7	1 2 11	—	1 15 9	7 10 0	1½
9	13	1 15 2	4 4	—	3 15 0	1 19 1	—	3 15 5	4 12 4	¾
10	5½	1 10 4	2 4x	3 10	1 8 3	—	1 2 7	3 7 4	5 0 0	¾
11	5	1 15 0	4 7	3 5	13 10	—	8 0	3 4 10	6 15 0	1
12	2½	3 5 3	3 0	9 3+	1 9 3	2 2 2	—	3 4 7	6 10 0	1
13	1½	1 17 6	5 1	6 5	16 7	—	5 0	3 10 7	6 15 0	1
14	1	1 15 4	7 6x	10 0+	11 11	—	10 7	3 15 4	6 10 0	1
15	3	1 3 9	6 3	7 9+	1 11 9	1 4 11	—	2 4 7	9 7 6	1½
16	6	1 1 2	2 6	9 0+	13 0	15 6	—	1 10 2	9 0 0	1½
17	16	1 2 3	5 0	11 1	15 10	17 2	—	1 17 0	9 0 0	1½
18	6	1 12 6	4 2	5 1	14 4	—	9 0	3 5 1	6 15 0	1
19	6	1 5 0	3 10	—	2 17 8	—	2 9	4 9 3	10 6 3	1½
20	3	1 14 5	3 9	11 2+	3 4	—	13 6	3 6 2	9 0 0	1½
21	10	2 13 5	4 6	10 10+	—	—	16 0	4 4 9	8 8 0	1½
22	16	13 9	5 8	6 8	19 5	—	1 15 0	4 0 6	9 15 0	1½
23	15	1 5 0	3 10	9	2 9 7	—	3 6	4 2 8	8 12 6	1½
24	2	1 8 2	3 9	1 0	2 12 11	2 0	—	4 3 10	8 12 6	1½
25	12	17 1	3 2	—	1 2 5	—	12 2	2 14 10	15 0 0	2
Average	8½	1 8 8	4 2	5 3	1 5 10	12 6	5 6	2 16 9	7 12 6	1½

x Hand sown.
+ Ridges split.

TABLE 29—continued

No.	Total Brought Forward	Rent	Manures net	Growing Cost *	Pulling	Total Cost *	Yield (40lb. bags)	Cost per 40-lb. bag	NET SALES †	
									Per acre.	Per bag.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		s. d.	£ s. d.	s. d.
1	4 17 11	1 5 0	—	6 2 11	12 16 3	18 19 2	60	6 4	37 10 0	12 6
2	8 0 6	1 0 0	—	9 0 6	20 4 0	29 4 6	200	2 11	not known	
3	8 5 11	1 0 0	—	9 5 11	19 5 0	28 10 11	150	3 10		
4	8 4 5	1 14 6	—	9 18 11	14 10 0	24 8 11	145	3 4	94 6 8	13 0
5	8 1 10	2 0 0	—	10 1 10	12 0 0	22 1 10	120	3 8	81 0 0	13 6
6	9 3 11	1 0 0	—	10 3 11	25 0 0	35 3 11	200	3 6	100 0 0	10 0
7	8 13 7	2 4 6	—	10 18 1	20 18 0	31 16 1	200	3 2	64 7 0	6 5
8	9 5 9	1 0 0	15 0	11 0 9	19 3 4	30 4 1	135	4 6	126 6 8	18 9
9	8 7 -9	1 10 0	1 15 1	11 12 10	16 2 4	27 15 2	120	4 8	54 15 0	9 1
10	8 7 4	1 0 0	3 4 3	12 11 7	26 5 0	38 16 7	175	4 5	171 0 0	19 8
11	9 19 10	1 10 0	1 6 3	12 16 1	10 1 3	22 17 4	100	4 7	57 10 0	11 6
12	9 14 7	2 12 0	10 2	12 16 9	Sold by the Piece				28 0 0	—
13	10 5 7	1 10 0	1 1 6	12 17 1	15 5 0	28 2 1	150	3 9	90 0 0	12 0
14	10 5 4	2 0 0	1 5 0	13 10 4	9 0 0	22 10 4	140	3 3	136 10 0	19 6
15	11 12 1	2 0 0	—	13 12 1	Sold by the Piece				38 6 8	—
16	10 10 2	3 4 0	—	13 14 2	11 6 8	25 0 10	110	4 7	96 16 3	17 7
17	10 17 0	3 4 0	—	14 1 0	Sold by the Piece				50 0 0	—
18	10 0 1	2 10 0	1 11 0	14 1 1	20 5 0	34 6 1	200	3 5	120 0 0	12 5
19	14 15 6	1 0 0	7 1	16 2 7	8 10 5	24 13 0	65	7 7	44 7 8	13 8
20	12 6 2	2 4 0	1 15 0	16 5 2	17 9 8	33 14 10	170	4 0	81 17 3	9 7
21	12 12 9	1 2 6	3 0 1	16 15 4	13 3 0	29 18 4	90	6 10	102 14 10	22 10
22	13 15 6	1 0 0	3 5 4	18 0 10	15 17 0	33 17 10	100	6 9	55 16 8	11 2
23	12 15 2	3 0 0	3 3 10	18 19 0	11 11 0	30 10 0	115	5 4	81 8 8	14 2
24	12 16 4	3 0 0	3 4 7	19 0 11	23 18 1	42 19 0	190	4 6	127 0 0	13 4
25	17 14 10	2 0 0	1 0 0	20 14 10	10 0 0	30 14 10	90	6 10	67 10 0	15 0
Average	10 9 3	1 16 5	1 1 9	13 7 5	16 0 6 (a)	29 7 6 (a)	138 (a)	4 3 (a)	89 10 10 (b)	13 5 (b)

* Excluding overheads.

† After deducting marketing expenses (haulage, commission, etc).

(a) Excluding Nos. 12, 15 & 17.

(b) Excluding Nos. 2, 3, 12, 15 & 17.

COSTS AND RETURNS FROM GREEN PEAS IN 1943.

Most of the records completed for green peas in 1943 were from mixed arable farms on widely different soils, ranging over Nottinghamshire sand and the limestone, the warp and the clay soils of Lindsey. All except two of the growers were experienced in vegetable production but only five could be properly termed market gardeners, and only one of those, No. 8, operated on a large scale. The acreage costed totalled 210 acres and fields varied in size from 1 acre up to 25 acres.

The year 1943 was not a favourable one for peas and yields were below normal with an average of 140 40-lb. bags per acre. A crop of 200 bags to the acre would be expected in a normal season, and with the increasing demand for peas marketing is not difficult. Prices received varied between fairly wide limits depending on the quality of the crop, the state of the market, and the cost of transport to the market. The margin between costs and returns was wide in practically all cases and in two cases reached over £100 per acre. If these figures are typical growers had every reason to be satisfied with this crop.

Methods of growing the crop varied considerably. Nine crops were grown on the ridge, of which three were hand sown and costs for these operations were slightly higher than for the more normal drilling on the flat. None of the fields received farmyard manure and only nine had applications of artificials or lime. The biggest variation was found in the cost of seed which ranged from £4 to £15 per acre. This is largely due to differences in the rate of seeding which ranged from $\frac{3}{4}$ to 2 cwts. per acre; the actual price of the seed was steady between £6 and £7 per cwt. and accounted for over half the average costs up to the point of pulling. Pulling, too, was expensive and in most cases cost more than the sum of all other cost items. Most of it was done by casual labour on piece rates, and the cost ranged between 2s. 0d. and 3s. 6d. per 40-lb. bag depending on the condition of the crop and the cost of transporting the workers.

SAVOYS AND SPRING CABBAGES IN 1942-43 AND 1943-44.

(a) SAVOYS.

Records were kept for the 1942-43 savoy crop by fourteen farmers and eleven market gardeners. The majority of the farmers were experienced vegetable growers on the good wold land of northern Lindsey. In addition two Nottinghamshire farmers and two farmers on the warpland co-operated. The market gardeners, on the other hand, were, with one exception, concentrated in south Nottinghamshire south Derbyshire and north Leicestershire. The exception was on the warp. In the following year six records were kept in each group, the market gardeners being again in the same area but the farmers were more widely scattered.

The 1942-43 season was very good for the growing of savoy and yields were uniformly high. Many growers experienced difficulty in selling their crops. For this reason the figures of yields in the tables are very scanty and need to be treated with reserve. It is the common practice, when the market is good, to go over the field twice or three times and in this way the maximum yield is secured. In such a season as 1942-43, however, it is doubtful whether any of the fields were cut over more than once. In the case of the fourteen farmers it is known that four cut none of their crop and more than half the total acreage grown never reached the market. The market gardeners fared better and about 90% of their acreage was cut and sold, but it is probable that something less than 90% of the actual crop was marketed.

The year 1943-44 on the other hand, was an exceedingly difficult period from the growing as opposed to the marketing point of view. Among the growers who had undertaken to keep records four had complete failures, and three could not get their plants in owing to the dry weather. It is against these facts that the results obtained from the more fortunate growers, tabulated below, must be judged. In addition to the difficulties of establishing the plants there was a tendency for the savoy to "blow" in the late autumn and some growers had to market their crop early for this reason. Where the yields were good very few savoy were unmarketable but among the poorer crops a considerable proportion, ranging up to about $\frac{1}{2}$ -ton per acre, were not fit for sale. Prices in 1943-44 were naturally high and it is unfortunate that more information about returns was not collected as part of that enquiry. In only two cases is this information available and in both the returns averaged £11 per ton, which gives some indication of the strong demand in that season.

Savoys are an expensive crop to grow and the sample illustrates the difficulties which may be met in both good and bad seasons. The market gardeners, near the markets and with well establishing contacts with wholesalers and retailers, made good profits during the 1942-43 glut, when many farmers could not find a market. It has sometimes been suggested that the farmer growing vegetable crops has an advantage in that he may use the unmarketable part of his crop for stock feed. This is clearly true but it is important not to over-estimate the value of this advantage. Comparison with the cost of growing folded crops for sheep in the same season shows that the savoys cost on average between two and three times as much per acre to produce a similar weight of roots for feed, therefore even if the whole of the savoy crop could be economically fed to sheep the direct loss incurred by growing savoys instead of folded roots would be between half and two-thirds of the growing cost. In addition farmers may often be unable to utilise surplus crops by folding livestock.

It is interesting to compare the different methods of growing the savoys employed in the two years. Normally a small plot is prepared as a seed bed and the savoys are later transplanted. In 1942-43 however, three farmers drilled the crop and thinned out as for other root crops. They secured good crops but the cost appears to be higher than would have been the case had they adopted the more normal practice. Others in both years purchased savoy plants. This proved considerably more expensive, particularly in the 1943-44 season, and did not result in any saving in the cost of planting. A comparison of the methods adopted by farmers and market gardeners does not reveal any great differences. Rents and cleaning costs were higher on the latter but costs varied much more between individual cases than between groups, and the final average costs per acre are remarkably close in both years.

(b) SPRING CABBAGES.

The samples of spring cabbage costs were collected from different areas than the savoys. Farms Nos. 1 and 2 were on the Nottinghamshire sand, No. 4 was in North Lincolnshire, and the others were divided about equally between the fen lands around Boston and the mixed farming area around Sleaford. Most of the farmers were specialist growers, but the two cases on the sand are exceptions. In these cases the practice was, when conditions appear to be favourable to drill a small area of the root break with spring cabbages as a speculation. Costs in these cases were kept low and only a small acreage was involved so that any unsaleable crop could be fed off to the sheep with little if any financial loss.

The season was favourable and yields were good. Coming on to the market at a period when there is little competition from other vegetables, the crop sold better than the savoys grown for marketing earlier in the same season. Statements of yields given in the table are however, yields of cabbage sold as we have no information about the total production. Prices varied very considerably but the crop proved profitable to most growers.

As with savoys most growers transplanted from the seed-bed but four drilled the crop, and grew it very cheaply. Of these, two were on the sand and had low returns, one ploughed in his crop and the fourth only sold half his crop. It would appear therefore that in this season at any rate this method of growing had little to recommend it.

TABLE 30.
COSTS AND RETURNS FROM SAVOYS IN 1942-43 (Costs per acre).

No.	Acres Costed	Preliminary Cultivations	Seedbed Preparation	Application of F.Y.M. & Artificials	Pulling and Planting	Drilling and Chopping	Cleaning	Rent	Seed	F.Y.M.	Artificials	Growing Cost
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
(a)	Farmers.											
1	1½	1 18 7	4 11	—	1 2 3	—	1 9 9	1 10 0	10 0	—	—	6 15 6
2	5	1 5 5	3 10	5 0	1 12 6	—	4 0 3	1 5 0	12 6	—	2 7 6	11 12 0
3	15	1 1 11	1 2	1 10 7	1 8 4	—	1 5 7	1 0 0	4 3	4 0 0	3 17 7	14 9 5
4	46	7 10	—	1 6 2	—	3 3 8	5 4	1 15 0	1 6 3	4 0 0	4 0 0	16 4 3
5	8	1 11 1	3 9	2 3 5	2 8 3	—	18 9	1 5 6	1 5 0	3 12 0	1 15 0	15 2 9
6	7½	2 10 0	3 4	2 8 11	2 0 0	—	2 2 11	1 7 0	9 7	3 4 0	8 0 8	22 6 5
7	4	1 9 1	—	7 4	—	3 7 9	17 4	1 2 0	13 9	—	15 1 6	22 18 9
8	3	3 4 6	—	4 5	3 0 0	—	1 16 5	1 4 0	3 6 8c	—	8 6 8	21 2 8
9	8	2 5 1	8 7	1 5 4	2 17 9	—	1 6 1	1 16 6	12 6	5 0 0	4 17 6	20 9 4
10	10	16 6	8 7	2 2	2 7 7	—	1 8 4	1 10 0	12 6	—	15 0 0	22 5 8
11	18½	2 2 9	1 19 0	7 2	2 18 0	—	1 17 2	1 5 0	18 6	—	13 17 0	25 4 7
12	2	1 2 6	—	2 0 4	—	3 8 11	13 4	1 4 0	11 0	3 4 0	15 2 6	27 6 7
13	1	3 2 4	15 0	2 2 2	3 3 6	—	1 11 0	4 0 0	12 6	8 0 0	4 7 6	27 14 0
14	4	2 18 10	—	3 1 1	2 11 6	—	2 12 3	1 0 0	4 2 6c	8 7 6	11 10 0	36 3 10
Average	9½	1 16 11	(9 9)x	1 4 7	(2 6 4)x	(3 6 9)x	1 11 9	1 10 3	(10 7)v	2 16 3	7 14 6	20 14 0
(b)	Market Gardeners.											
1	2	3 0 0	4 5	5 0	2 12 6	—	1 9 8	2 10 0	8 0	—	2 11 3	13 0 10
2	1½	1 8 7	4 1	4 5	3 6 8	—	2 14 8	3 0 0	6 8	—	1 4 0	12 9 1
3	5	1 1 7	9 6	—	2 8 0	—	3 1 4	4 0 0	1 1 0	—	—	12 1 5
4	1½	2 14 0	6 3	9 9	1 16 5	—	2 4 5	2 0 0	17 4	—	3 11 3	13 19 5
5	8	1 3 4	8 7	6 4	2 7 5	—	2 16 6	2 10 0	12 6	—	3 3 0	13 7 8
6	1	1 15 0	12 6	12 4	3 4 4	—	1 14 8	5 0 0	12 6	—	3 0 0	16 11 4
7	1½	1 8 3	2 11	11 5	1 0 0	—	2 18 3	4 0 0	14 0	—	4 13 4	15 8 2
8	3	2 2 4	2 2	2 8 6	2 1 8	—	2 3 2	1 0 0	12 6	4 0 0	3 12 0	18 2 4
9	4	3 9 2	8 7	1 3 0	3 3 2	—	1 10 5	2 0 0	12 6	3 10 0	7 7 6	23 4 4
10	4	1 11 10	11 4	3 9	4 0 4	—	7 11 6	4 0 0	9 0	—	18 0	19 5 9
11	1	18 1	8 7	3 0 0	1 0 0	—	15 6	4 0 0	6 3	22 10 0	—	32 18 5
Average	3	1 17 6	7 2	16 9	2 9 2	—	2 12 9	3 1 10	12 0	2 14 6	2 14 7	17 6 3

c Cost of plants purchased.

x Average of cases performing these operations.

v Average cost of seed only.

TABLE 30—continued

No.	Growing Cost b/f.	Net Cultural Residues	Net Manurial Residues	Net Growing Cost	Cutting and Clearing	Total Cost	Yield	Net Sale Price
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£
(a)	Farmers.							
1	6 15 6	+ 9 5	—	7 4 11	4 13 9	11 18 8	500 dozen	63
2	11 12 0	- 17 8	- 17 6	9 16 10	none sold, crop ploughed in	—	—	—
3	14 9 5	- 1 1 5	- 2 5 4	11 2 8	sold by the piece, buyer to cut	—	—	38
4	16 4 3	- 1 12 11	- 2 6 8	12 4 8	no details available	—	—	—
5	15 2 9	- 15 0	- 18 0	13 9 9	sold by the piece, none actually cut	—	—	70
6	22 6 5	- 2 1 11	- 4 19 5	15 5 1	no details available	—	11 tons (under 40% cut and sold)	—
7	22 18 9	- 1 9 1	- 4 13 4	16 16 4	sold by the piece, buyer to cut	—	—	75
8	21 2 8	- 1 5 6	- 2 15 7	17 1 7	8 18 0	25 19 7	10 tons	220
9	20 9 4	- 6 11	- 2 17 6	17 4 11	none sold, crop sheeped	—	—	—
10	22 5 8	+ 9 9	- 5 0 0	17 15 5	none cut or sold	—	—	—
11	25 4 7	- 6 0	- 4 12 4	20 6 3	5 16 10	26 3 1	no details available	—
12	27 6 7	+ 5 11	- 3 0 10	24 11 8	sold by the piece, buyer to cut	—	—	75
13	27 14 0	- 1 11	- 1 13 2	25 18 11	5 5 0	31 3 11	820 dozen	143
14	36 3 10	- 2 9 6	- 5 18 6	27 15 10	none sold, crop sheeped	—	—	—
Average	20 14 0	- 15 11	- 2 19 11	16 18 2	—	—	—	—
(b)	Market Gardeners.							£ s. d.
1	13 0 10	- 6	- 1 5 0	11 15 4	7 7 0	19 2 4	600 dozen	82 10 0
2	12 9 1	- 7 4	—	12 1 9	11 0 9	23 2 6	666 dozen	66 13 4
3	12 1 5	+ 2 8	—	12 4 1	8 1 1	20 5 2	800 dozen	120 0 0
4	13 19 5	- 14 1	+ 8 3	13 13 7	4 3 2	17 16 9	500 dozen	56 5 0
5	13 7 8	- 6 0	+ 19 0	14 0 8	11 18 5	25 19 1	8 tons	52 0 0
6	16 11 4	- 1 6	—	16 9 10	2 7 3	18 17 1	667 dozen	75 0 0
7	15 8 2	- 8 10	+ 2 9 4	17 8 8	4 9 4	21 18 0	611 dozen	91 14 0
8	18 2 4	- 8 6	—	17 13 10	4 14 10	22 8 8	500 dozen	62 10 0
9	23 4 4	- 1 0 0	- 3 6 10	18 17 6	2 3 7	21 1 1	600 dozen	90 0 0
10	19 5 9	- 2 12 4	+ 4 15 3	21 8 8	4 11 3	25 19 11	not available	—
11	32 18 5	+ 9 8	- 1 0 10	32 7 3	5 17 4	38 4 7	1083 dozen	not known
Average	17 6 3	- 9 8	+ 5 4	17 1 11	6 1 3	23 3 2	—	—

TABLE 31.
COSTS AND RETURNS FROM SAVOYS IN 1943-44. (Costs per acre).

No.	Acres Costed	Preliminary Cultivations	Seedbed Preparation	Application of F.Y.M. & Artificials	Pulling and Planting	Cleaning	Rent	Plants	Seed	F.Y.M.	Artificials	Growing Cost
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
(a) Farmers.												
1	12	3 5 8	7 0	1 6 5	2 9 6	1 14 11	1 0 0	—	3 7	2 10 0	3 1 0	15 18 1
2	7	4 16 1	6 8	19 9	2 12 11	2 0 4	1 16 0	—	18 6	—	1 15 9	15 6 0
3	5	3 5 0	—	4 0	1 5 0	18 7	3 0 0	5 0 0	—	—	3 7 6	17 0 1
4	19	3 5 10	3 0	1 2 7	3 8 7	14 5	2 0 0	—	11 7	4 4 3	3 13 6	19 3 9
5	3	3 6 8	—	5 3	3 5 0	2 5 8	1 4 0	3 15 0	—	—	8 0 6	22 2 1
6	1	4 13 5	—	1 0 0	4 16 0	2 19 0	4 0 0	9 5 0	—	—	3 18 0	30 11 5
Average	8	3 15 5	(5 7) ^c	16 4	2 19 6	1 15 6	2 3 4	(6 0 0) ^c	(11 3) ^c	1 2 4	3 19 5	20 0 3
(b) Market Gardeners.												
1	6	1 15 4	10 1	9 4	2 5 0	3 6 0	3 0 0	—	1 0 8	—	6 0 0	18 6 5
2	8	4 0 2	2 7	10 2	2 12 1	3 11 8	2 0 0	—	1 0 0	—	3 3 0	16 19 8
3	3	1 0 7	14 4	16 1	2 3 0	2 0 0	2 0 0	—	1 0 0	6 0 0	3 0 0	18 14 0
4	1	3 15 3	—	15 2	1 15 8	3 9 6	1 0 0	3 18 0	—	—	2 10 0	17 3 7
5	1	1 11 8	7 8	1 0 6	3 0 0	14 2	4 0 0	—	15 0	8 0 0	5 0	19 14 0
6	1	1 19 6	—	19 10	2 14 5	5 11 2	2 10 0	6 10 0	—	—	4 13 4	24 18 3
Average	3½	2 7 1	(8 8) ^c	15 2	2 8 4	3 2 1	2 8 4	(5 4 0) ^c	(18 11) ^c	2 6 8	3 5 3	19 6 0

^c Average of cases performing these operations only.

TABLE 31—continued.

No.	Growing Cost b/f.	Net Cultural Residues	Net Manurial Residues	Net Growing Cost	Cutting and Clearing	Total Cost	Yield	Cost per ton
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	tons	£ s. d.
(a) Farmers.								
1	15 18 1	- 2 5 3	- 1 12 9	12 0 1	2 7 7	14 7 8	2	7 4 0
2	15 6 0	- 1 11 5	—	13 14 7	7 11 4	21 5 11	6	3 11 0
3	17 0 1	- 1 17 8	- 3 9	14 18 8	5 13 4	20 12 0	5	4 2 0
4	19 3 9	- 1 16 1	- 1 1 1	16 6 7	4 0 0	20 6 7	4	5 2 0
5	22 2 1	- 1 0 7	- 2 0 0	19 1 6	8 0 0	27 1 6	6	4 10 0
6	30 11 5	- 1 8 7	- 6 0	28 16 10	Sold by the piece.			—
Average	20 0 3	- 1 13 3	- 17 3	17 9 9	—	—	—	—
(b) Market Gardeners.								
1	18 6 5	- 2 5 7	- 2 0 0	14 0 10	3 4 2	17 5 0	2	8 13 0
2	16 9 8	- 1 18 4	+ 1 8	15 3 0	22 10 0	37 13 0	15	2 10 0
3	18 14 0	+ 2 9	- 2 7 9	16 9 0	15 0 0	31 9 0	12	2 12 0
4	17 3 7	- 1 5 2	+ 1 8 4	17 6 9	5 18 8	23 5 5	4	5 16 0
5	19 14 0	+ 9 4	- 1 7 6	18 15 10	5 0 0	23 15 10	5	4 15 0
6	24 18 3	- 2 7 10	- 1 7 6	21 2 11	4 10 0	25 12 11	3	8 11 0
Average	19 6 0	- 1 4 2	- 18 10	17 3 0	9 7 2	26 10 0	7	3 18 0

TABLE 32.
COSTS AND RETURNS FROM SPRING CABBAGE IN 1942-43 (Costs per acre).

No.	Acres Costed	Preliminary Cultivations	Seedbed Preparation	Application of F.Y.M. & Artificials			Pulling and Planting			Cleaning			Rent			Seed			F.Y.M.			Lime and Artificials			Growing Cost		
				£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1	4	18 9	—	1 10	1 10 ^b	9 10	8 6	13 6	—	3 12 0	6 6 3																
2	2	19 2	—	1 10	1 10 ^b	11 1	8 6	12 0	—	3 12 0	6 6 5																
3	10	1 17 3	19 5	2 0	1 5 5	2 5 10	2 10 0	1 1 0	—	1 1 0	11 1 11																
4	1	1 2 6	—	—	9 10 ^b	6 1 4	2 2 6	12 0	—	10 0	10 18 2																
5	1½	1 13 6	—	10	2 18 8 ^x	2 1 10	1 10 0	16 0	—	2 6 0	11 6 10																
6	1	1 1 2	—	7 4	4 17 0	3 8	4 0 0	15 0 ^a	—	1 2 0	12 6 2																
7	1¼	2 1 8	11 4	1 6 10	1 8 8	2 18 4	2 0 0	9 7	3 16 9	16 0	15 9 2																
8	12	12 6	15 9	3 4	3 4 6	2 5 4	3 0 0	1 0 0	—	2 2 0	13 3 5																
9	4½	12 2	—	1 12 11	5 11 0	—	2 0 0	3 3 4 ^c	—	3 9 5	16 8 10																
10	2	1 0 7	7 4	10 7	4 1 1	10 0	7 0 0	1 0 0	—	3 3 0	17 12 7																
11	20	1 8 7	7 5	1 0 2	8 14 7	14 6	1 5 0	16 10	—	4 10 6	18 17 7																
12	5	1 15 9	1 6 3	6 5	10 10 0	6 0 0	2 10 0	1 0 0	—	1 0 0	24 8 5																
13	2	14 6	17 4	1 15 5	8 0 0	1 0 0	2 0 0	2 10 0	4 0 0	2 0 0	22 17 3																
14	1	2 13 0	1 2 6	16 9	10 10 0	6 0 0	2 10 0	1 10 0	—	2 10 0	27 12 3																
15	10	1 2 8	1 12 6	16 11	6 0 0	2 0 0	5 0 0	5 0 ^a	3 15 0	4 2 0	24 14 1																
Average	5	1 6 3	10 8	12 2	4 10 4	2 4 1	2 11 0	1 1 7	15 5	2 7 9	15 19 3																

^x Drilled and chopped out.

^c Cost of purchased plants.

^b Drilled.

^a Carriage on plants only, cost nil.

TABLE 32—continued

No.	Growing Cost b/f.	Net Cultural Residues	Net Manurial Residues	Net Growing Cost	Cutting	Clearing where done	Total Cost	Yield per Acre	Receipts.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.
1	6 6 3	+ 12 10	- 11	6 18 2	—	—	6 18 2	10 doz. sold, 5 tons sheeped	1 5 0
2	6 6 5	+ 16 5	+ 6 10	7 9 8	Sold by the piece		7 9 8	—	20 0 0
3	11 1 11	- 6 2	+ 8 0	11 3 9	11 3 4	—	22 7 1	12 tons	204 0 0
4	10 18 2	- 11 4	+ 1 3 4	11 10 2	—	—	11 10 2	crop ploughed in	—
5	11 6 10	- 3 11	+ 11 4	11 14 3	7 0 0	—	18 14 3	560 doz. sold, approximately half crop sheeped	54 10 0
6	12 6 2	+ 13 10	—	13 0 0	4 0 0	—	17 0 0	6½ tons	50 0 0
7	15 9 2	- 10 1	+ 4 10	15 3 11	9 18 0	1 0 0	26 1 11	7½ tons	111 0 0
8	13 3 5	+ 6 11	+ 4 0 0	17 10 4	2 16 3 ^o	3 9	20 10 4	10 tons	not known
9	16 8 10	+ 1 4 6	- 1 0	17 12 4	6 9 0	—	24 1 4	8 tons	not known
10	17 12 7	+ 12 11	—	18 5 6	6 9 0	3 9	24 18 3	10 tons	57 0 0
11	18 17 7	+ 4 0	+ 2 6 3	21 7 10	10 0 0	—	31 7 10	10 tons	137 0 0
12	24 8 5	- 2 1 11	- 6 4	22 0 2	5 0 0	1 2 6	28 2 8	12 tons	72 0 0
13	22 17 3	- 3 4	- 10 0	22 3 11	7 16 3	—	30 0 2	11 tons	194 8 0
14	27 12 3	- 2 18 0	- 1 13 8	23 0 7	5 0 0	1 2 6	29 3 1	10 tons	60 0 0
15	24 14 1	- 14 0	+ 16 8	24 16 9	6 9 0	1 5 0	32 10 9	12 tons	204 0 0
Average	15 19 3	- 3 9	+ 9 8	16 5 2	—	—	—	—	—

^o Crop sold by the piece, the cutting cost is the contribution of the farm staff to the cutting; the buyer would find most of the labour for this operation.

CONCLUSION.

Although the acreage under vegetable crops is relatively small these crops are of considerable importance not only because they form an important part of the national diet, but also because they contribute a not inconsiderable part of the national farm income. Vegetable growers have a virtual monopoly of the home market for most of these crops. Supplies fluctuate between very wide limits from good to bad seasons and these studies illustrate some of the difficulties with which growers have to contend under different conditions. The numbers of records are not sufficiently large or representative of different areas to enable conclusions to be drawn as to the state of the vegetable growing industry in its various branches, and care needs to be taken in the interpretation of these records. The steady expansion of the acreage under these crops in recent years indicates that in general, taking the good years with bad, growers have found these enterprises profitable enough to make the necessary changes in farm organisation and the increased capital investment in these crops worth while.

It is highly desirable, from the growers point of view, that the increased consumption of vegetables which has occurred since 1939 should be maintained as any reduction would mean inevitable loss to growers. The important steps which need to be taken for this purpose are largely in the field of marketing, namely, the development of more orderly marketing and of market intelligence to eliminate local gluts and shortages, the establishment of recognised grades with the aim both of increasing the output of quality produce and of consolidating the demand for vegetables, and the development of all possible means for the adjustment as far as is possible, of supply to demand. These steps would put producers in a strong position to face the changing conditions of the next few years and are strongly recommended to the attention of all vegetable growers.

APPENDIX A.

DETAILED TABLES FOR
WHEAT, BARLEY, POTATOES AND SUGAR BEET
SHOWING INDIVIDUAL FARM COSTS.

TABLE 33	WHEAT COSTS	1946	(a) Market Harborough District
„ 34	„	„	(b) Louth (Middle Marsh).
„ 35	„	„	(c) Trent Warp Land District
„ 36	„	„	(d) Miscellaneous Group.
„ 37	BARLEY COSTS	1942	(a) Carr Farms and
			(b) Limestone Heath Farms.
„ 38	„	„	(c) Wold Farms.
„ 39	„	1943	(a) Carr Farms.
„ 40	„	„	(b) Wold Farms.
„ 41	„	„	(c) Limestone Heath Farms.
„ 42	„	1944	(a) Carr Farms.
„ 43	„	„	(b) Wold Farms.
„ 44	„	„	(c) Limestone Heath Farms.
„ 45	POTATO COSTS	1946	Warp Group.
„ 46	„	„	Fen Group.
„ 47	„	„	Limestone and Wold Group.
„ 48	SUGAR BEET COSTS	1945	Warp and Fen Groups.
„ 49	„	„	Wold and Limestone Groups.

TABLE 33.

WHEAT COSTS 1946 (Costs per acre).

(a) MARKET HARBOROUGH DISTRICT.

Farm No.	Acres Costed	Autumn Cultivations	Seeding and Covering	Spring Cultivations	Applying F.Y.M. and Artificials	Weeding	Harvesting	Total Field Labour
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	4	19 6	5 5	2 4	—	1 7	16 5	2 5 3
2	2	19 6	5 5	2 4	—	—	18 4	3 5 7
3	8	16 0	6 2	1 9	c	—	3 6 5	4 10 4
4	8	18 4	1 0 11 ^x	—	c	—	1 13 3	3 12 6
5	11	18 5	16 6	5 4	c	2 4	3 3 1	5 5 8
6	5	1 0 2	9 6	—	—	1 3	2 17 7	4 8 6
7	30	1 17 10	9 0	4 7	—	—	2 1 11	4 13 4
8	5½	1 12 0	11 6	5 0	c	8 1	1 10 6	4 7 1
9	5	2 5	5 0	—	—	—	3 19 0	4 6 5
Average	8½	1 0 5	9 11	2 4	—	1 6	2 7 5	4 1 7

Farm	Field Labour b/f	Seed	Artificials	F.Y.M.	Rent, etc.	Twine	Net Manurial Residues	Net Cultural Residues	Threshing Labour & Machine Hire	Total	Yield
	£ s. d.	£ s. d.	£ s. d.	£	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	cwts.
1	2 5 3	1 5 0	10 9	—	1 14 0	3 0	— 2 6	+ 1 0 0	1 7 4	8 2 10	13.2
2	3 5 7	1 5 0	—	—	1 14 0	3 0	+ 6 0	—	2 12 6	9 6 1	27.5
3	4 10 4	1 13 9	1 3 9	—	1 0 0	3 0	+ 2 7	—	2 19 4	11 12 9	29.2
4	3 12 6	3 10 7 ^x	1 3 9	—	1 0 0	3 0	— 1 6	—	2 16 11	12 5 3	27.0
5	5 5 8	1 10 11	16 5	—	1 5 0	2 7	— 5 1	+ 2 0 0	3 0 1	13 15 7	33.5
6	4 8 6	1 13 0	—	—	2 0 0	3 0	+ 1 4 0	+ 1 12 0	2 6 8	13 7 2	25.2
7	4 13 4	1 11 3	1 3 0	—	2 10 0	3 0	+ 4 6	+ 1 10 0	1 4 8	13 10 9	13.3
8	4 7 1	2 6 4	19 9	—	2 4 0	2 11	— 5 9	+ 1 12 9	2 5 6	13 13 4	20.2
9	4 6 5	1 10 0	—	—	2 0 0	5 4	+ 18 4	+ 3 0 0	2 8 4	14 8 5	32.4
Average	4 1 7	1 16 2	13 2	—	1 14 2	3 2	+ 3 7	+ 1 3 10	2 6 10	12 2 6	24.6

^x Autumn sown wheat failed—re-sown with spring wheat.

c Combined seed and artificial drill.

TABLE 34.
WHEAT COSTS 1946 (Costs per acre).
(b) LOUTH (MIDDLE MARSH) DISTRICT.

Farm No.	Acres Costed	Autumn Cultivations	Seeding and Covering	Spring Cultivations	Applying F.Y.M. & Artificials	Weeding	Harvesting	Total Field Labour
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
10	7	18 4	5 6	2 1	—	—	1 14 11	3 0 10
11	9	1 0 0	10 4	6 6	—	10 6	1 18 6	4 5 10
12	13	19 9	5 9	4 0	—	—	2 6 11	3 16 5
13	15	1 2 0	7 2	3 10	11	—	2 1 9	3 15 8
14	12	1 3 4	4 11	3 5	1 9	9 6	2 7 3	4 10 2
15	14	3 0 3f	6 3	3 9	1 2 0	—	1 17 0	6 9 3
16	10	1 2 11	6 5	3 11	—	—	2 17 4	4 10 7
17	9	2 4 5	6 4	5 9	2 1	8 4	2 4 6	5 11 5
18	4½	4 18 8f	5 4	4 4	1 2 10	2 10	2 13 7	9 7 7
19	10	1 3 8	5 8	3 8	4 0 2	15 10	1 14 10	8 5 10
Average	10½	1 15 6	6 5	4 2	13 0	4 8	2 3 8	5 7 5

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Farm No.	Field Labour b/f	Seed	Artificials	FYM	Rent, etc.	Twine	Net Manurial Residues	Net Cultural Residues	Threshing Labour & Machine Hire	Total	Yield
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	cwts.
10	3 0 10	1 0 0	—	—	1 9 9	3 6	+ 14 1	+ 1 0 0	1 19 5	9 7 7	24.7
11	4 5 10	1 2 4	—	—	1 6 8	3 4	+ 6 3	+ 1 0 0	1 13 4	9 17 9	33.7
12	3 16 5	1 2 11	—	—	1 18 0	3 5	+ 9 0	+ 1 0 0	2 0 7	10 10 4	31.5
13	3 15 8	1 13 4	7 10	—	1 0 0	1 10	+ 8 11	+ 1 16 8	1 13 6	10 17 9	25.6
14	4 10 2	1 3 4	13 0	—	1 5 0	3 6	+ 1 5 11	+ 1 0 0	2 2 0	12 2 11	23.6
15	6 9 3	1 0 0	—	5 2 10	2 10 0	3 0	- 2 4 3	- 1 10 1	1 9 2	12 19 11	33.5
16	4 10 7	1 4 0	—	—	2 4 0	3 6	+ 18 7	+ 3 0 0	2 5 10	14 6 6	28.3
17	5 11 5	1 5 9	1 9 9	—	2 0 0	2 3	+ 19 4	+ 1 10 0	1 12 11	14 11 5	23.2
18	9 7 7	1 8 4	9 8	6 13 4	2 8 0	5 7	- 3 6 8	- 2 9 4	2 12 10	17 9 4	41.8
19	8 5 10	2 8 9	—	7 4 0	1 10 0	3 6	- 3 12 0	+ 2 16 0	1 15 9	20 11 10	36.0
Average	5 7 5	1 6 11	6 0	1 18 0	1 15 2	3 2	- 8 1	+ 18 4	1 18 7	13 5 6	30.2

f Bare fallow.

TABLE 35.

WHEAT COSTS 1946. (Costs per acre).

(c) TRENT WARP LAND DISTRICT.

Farm No.	Acres Costed	Autumn Cultivations			Seeding and Covering			Spring Cultivations			Applying F.Y.M. & Artificials			Weeding			Harvesting			Total Field Labour				
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.		
20	18		2	0		5	9		2	8		—		—		3	13	0		4	3	5		
21	7		5	3		10	9		3	10		—		3	7		1	16	5		2	19	10	
22	7½		7	11		6	2		1	10		—		2	1		2	13	4		3	11	4	
23	6		4	4		6	11		2	2		—		4	3		2	14	4		3	12	0	
24	5½		—			12	10		2	4		—		4	7		1	9	2		2	8	11	
25	12	1	0	8		6	11		6	10		—		9	6		2	19	4		5	3	3	
26	6		11	0		14	4		10	11		2	3		12	8		1	19	10		4	10	11
27	8½		—			13	0		—			—		7	8		4	5	4		5	6	0	
Average	9		6	5		9	6		3	10		3		5	7		2	13	10		3	19	5	

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Farm No.	Field Labour b/f.			Seed			Artificials			F.Y.M.	Rent, etc.		Twine	Net Manurial Residues		Net Cultural Residues		Threshing Labour & Machine Hire			Total	Yield										
	£	s.	d.	£	s.	d.	£	s.	d.	s. d.	£	s.	d.	s. d.	£	s.	d.	£	s.	d.	£	s.	d.	cwts.								
20		4	3	5		1	17	0		—		1	5	6	3	6	+ 1	12	3	+ 3	0	0		£	13	11	8	20.2				
21		2	19	10		1	18	1		—		3	10	0	2	8	+ 15	0	+ 3	0	0		2	4	0		14	9	7	35.5		
22		3	11	4		1	2	5		—		2	4	0	5	7	+ 1	18	0	+ 3	0	0		2	13	2		14	14	6	29.3	
23		3	12	0		1	7	9		—		3	10	0	2	8	+ 15	0	+ 3	0	0		2	13	4		15	0	9	30.0		
24		2	8	11		2	3	0		—		3	0	0	7	6	+ 1	11	9	+ 3	0	0		2	10	7		15	1	9	31.5	
25		5	3	3		1	7	3		—		2	11	3	3	6	+ 3	6	6	+ 2	10	0		2	11	1		17	12	10	36.0	
26		4	10	11		1	12	10		10	6		4	11	1	3	0	+ 2	2	6	+ 3	0	0		1	19	10		18	10	8	22.2
27		5	6	0		2	4	7		—		2	12	0	3	6	+ 5	14	1	+ 3	0	0		2	5	8		21	5	10	19.0	
Average		3	19	5		1	14	1		—		2	18	0	4	0	+ 2	4	5	+ 2	18	9		2	6	0		16	6	0	28.0	

TABLE 36.

WHEAT COSTS 1946. (Costs per acre).

(d) MISCELLANEOUS GROUP.

Farm No.	Acres Costed	Autumn Cultivations			Seeding and Covering			Spring Cultivations			Applying F.Y.M. & Artificials			Weeding		Harvesting		Total Field Labour			
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.		
28	24	16	3		7	8		2	2		3	0		—		1	18	4	3	7	5
29	32½	19	4		2	6		3	11		1	2		2	4	2	6	3	3	15	6
30	18	3	1		10	0		1	3		1	11		5	2	1	6	7	2	8	0
31	15	—			5	9		4	3		—			12	11	2	8	8	3	11	7
32	15	—			14	1		4	4		1	6		4	3	1	17	0	3	1	2
33	13	15	6		4	1		2	10		—			—		2	13	5	3	15	10
34	13	—			16	4		6	0		1	9		4	10	2	10	10	3	19	9
35	20	14	3		2	7		1	6		1	12	6		10	2	11	11	5	13	6
Average	19	8	7		7	10		3	4		5	3		5	0	2	4	1	3	14	1

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Farm No.	Field Labour b/f.			Seed			Artificials			F.Y.M.	Rent, etc.		Twine	Net Manurial Residues		Net Cultural Residues		Threshing Labour & Machine Hire		Total			Yield cwts.								
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	s.	£	s.	d.	£	s.	d.	£	s.	d.									
28	3	7	5	1	13	10	1	5	7	—	2	0	0	2	0	—	3	7	+	10	0	1	9	10	10	5	1	11.2			
29	3	15	6	1	11	3	—	10	9	—	1	0	0	3	0	+	2	17	2	+	3	0	0	1	14	0	11	11	9	23.6	
30	2	8	0	1	7	3	—	1	1	0	—	1	7	6	3	0	+	2	17	2	+	3	0	0	1	2	1	13	6	0	15.8
31	3	11	7	1	9	0	—	—	—	—	1	4	9	3	6	+	2	14	0	+	3	0	0	2	4	6	14	7	4	28.0	
32	3	1	2	1	7	3	—	10	6	—	1	8	0	2	9	+	3	2	4	+	3	0	0	1	15	6	14	7	6	27.0	
33	3	15	10	1	18	9	—	—	—	—	2	0	0	3	6	+	1	14	5	+	3	0	0	2	8	7	15	1	1	31.5	
34	3	19	9	1	3	4	—	10	5	—	1	17	6	3	6	+	3	10	8	+	3	0	0	1	13	5	15	18	7	33.7	
35	5	13	6	1	6	3	—	1	4	0	6	0	0	3	6	—	3	0	0	+	2	16	0	2	2	0	17	10	3	32.8	
Average	3	14	1	1	9	7	—	12	9	15	0	1	10	4	3	1	+	1	7	1	+	2	12	9	1	16	3	14	0	11	25.4

TABLE 37.
BARLEY COSTS 1942 (Costs per acre).

(a) CARR FARMS.

Farm No.	Total Labour	Hire of Threshing Drum	Seed	Manures	Rent, etc.	Sundries	Net Manurial Residues	Net Cultural Residues	Total	Yield	Cost per Quarter
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Qrs.	£ s. d.
1	4 0 9	1 2 8	1 17 6	2 0 0	1 0 0	7 9	- 10 0	1 0 0	10 18 8	4	2 14 8
2	2 14 3	8 1	4 2 6	—	14 0	3 0	+ 1 13 4	2 0 0	11 15 2	1½	6 14 4
3	4 5 0	1 1 0	4 9 5	1 12 0	1 0 0	4 0	- 10 8	—	12 0 9	6	2 0 2
4	5 2 0	14 0	2 6 8	4 9 0	13 0	2 7	- 1 4 2	—	12 3 1	4	3 0 9
5	5 2 6	1 9 6	4 10 0	—	1 0 0	8 3	—	—	12 10 3	5½	2 5 6
6	2 19 3	8 5	3 15 0	—	2 3 2	1 7	+ 1 1 4	2 10 0	12 18 9	4¼	3 0 10
7	3 13 6	17 0	3 15 0	11 0	1 3 0	3 0	+ 1 15 0	1 10 0	13 7 6	6	2 4 7
8	5 6 10	15 9	4 4 0	2 4 0	1 10 0	3 0	- 9 2	—	13 14 5	4½	3 1 0
9	3 2 8	10 4	5 1 3	1 14 6	19 0	3 1	+ 14 2	1 10 0	13 15 0	7½	1 16 8
10	3 4 9	17 6	4 13 9	—	1 4 6	3 0	+ 1 15 0	2 0 0	13 18 6	5	2 15 8
11	1 13 7	17 0	5 13 9	1 5 6	1 10 0	6 0	+ 1 16 6	2 0 0	15 2 4	6½	2 6 6
12	5 13 3	10 6	5 0 0	—	1 15 0	4 0	+ 3 6 8	2 0 0	18 9 5	3	6. 3 2
Average	3 18 2	15 11	4 2 8	1 3 0	1 4 2	4 1	+ 15 8	1 4 2	13 7 10	5	2 15 5

(b) LIMESTONE HEATH FARMS.

Farm No.	Total Labour	Hire of Threshing Drum	Seed	Manures	Rent, etc.	Sundries	Net Manurial Residues	Net Cultural Residues	Total	Yield	Cost per Quarter
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Qrs.	£ s. d.
1	3 6 11	17 6	4 1 0	1 2 6	1 5 0	2 4	- 7 6	—	10 7 9	5¼	2 3 0
2	2 18 1	17 9	3 15 0	—	1 0 0	2 5	+ 1 12 0	1 10 0	11 15 3	5	2 7 1
3	3 4 11	1 4 6	3 9 2	2 8 9	2 0 0	3 5	+ 17 10	1 0 5	14 9 0	7	2 1 3
4	3 18 9	1 1 0	3 10 0	—	1 2 6	2 7	+ 3 10 0	1 10 0	14 14 10	6	2 9 2
5	4 15 8	1 4 6	4 1 3	16 6	1 5 0	3 5	+ 3 6 8	2 0 0	17 13 0	6	2 18 10
Average	3 12 10	1 1 1	3 15 3	17 6	1 6 6	2 10	+ 1 15 10	1 4 1	13 15 11	5¾	2 7 2

TABLE 38.
BARLEY COSTS 1942 (Costs per acre).

(c) WOLD FARMS.

Farm No.	Total Labour	Hire of Threshing Drum	Seed	Manures	Rent, etc.	Sundries	Net Manurial Residues	Net Cultural Residues	Total	Yield	Cost per Quarter
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Qrs.	£ s. d.
1	3 5 8	16 2	1 13 7	—	17 6	3 0	+ 9 6	1 10 0	8 15 5	5	1 15 1
2	17 0	(c)	4 10 0	—	1 0 0	5 7	+ 17 6	1 10 0	10 0 1	5	1 19 4
3	2 6 1	17 4	3 15 0	1 7 3	1 5 0	2 0	+ 10 11	—	10 3 7	6½	1 11 3
4	3 5 1	(c)	3 16 0	2 4 0	1 10 0	—	- 9 4	—	10 5 9	6	1 14 2
5	3 14 0	18 11	3 10 0	1 5 0	1 5 6	3 5	- 8 4	—	10 8 6	7	1 9 9
6	2 8 8	15 0	3 9 6	—	10 0	2 2	+ 5 6	3 10 0	11 0 10	4¼	2 11 11
7	3 16 5	17 6	4 17 6	—	10 0	2 1	+ 7 10	1 5 5	11 16 9	5	2 7 4
8	3 17 10	1 2 9	3 17 2	2 2 0	1 8 0	9 7	- 14 0	—	12 3 4	6½	1 17 5
9	3 7 3	15 0	3 1 6	2 9 2	1 10 0	1 9	- 12 4	2 0 0	12 12 4	4¼	2 19 3
10	3 0 10	13 9	3 9 3	—	1 0 0	4 5	+ 14 6	3 10 0	12 12 9	5	2 10 7
11	2 16 9	15 10	3 1 6	1 17 6	1 0 0	3 0	- 7 0	3 10 0	12 17 7	4¼	2 17 3
12	3 4 2	1 5 7	3 2 6	11 7	1 5 0	3 5	+ 1 16 0	1 10 0	12 18 3	7¼	1 15 8
13	3 18 4	19 4	3 5 5	—	18 0	6 0	+ 3 7	3 10 0	13 0 8	5½	2 7 5
14	3 7 0	19 3	3 15 0	—	1 7 3	3 4	+ 2 2 4	1 10 0	13 4 2	5½	2 8 0
15	2 8 6	11 9	4 17 6	—	1 10 0	5 6	+ 1 4 3	2 10 0	13 7 6	5	2 13 6
16	4 1 4	1 4 9	3 15 0	11 0	1 10 0	3 3	+ 14 1	1 10 0	13 9 5	5¼	2 11 9
17	3 17 7	1 1 0	3 15 0	1 4 0	1 0 0	7 9	+ 1 18 9	1 10 0	14 14 1	6	2 9 0
18	3 17 7	1 2 9	4 2 3	—	1 5 0	2 8	+ 3 10 0	2 0 0	16 0 3	6½	2 9 3
19	3 0 2	1 9 0	4 10 0	11 0	1 0 0	6 0	+ 3 1 4	2 10 0	16 7 6	8	2 0 11
Average*	3 6 4	19 2	3 12 9	14 0	1 2 5	4 2	+ 17 5	1 17 5	12 13 8	5½	2 4 6

* Excluding Nos. 2 and 4. (c) Combine Harvested.

TABLE 39.
 (a) CARR FARMS BARLEY COSTS 1943 (Costs per Acre).

Farm No.	Acres Costed	Seedbed Preparation	Drilling and Covering	Other Cultivations	Harvesting	Total Field Labour
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	8	11 3	4 10	8 10	17 8	2 2 7
2	13	14 6	3 8	5 5	1 3 4	2 6 11
3	5	18 0	4 7	2 0	18 5	2 3 0
4	12½	15 9	6 0	13 1	1 14 9	3 9 7
5	6	10 0	4 3	8 5	1 2 8	2 5 4
6	5	1 6 0	6 2	3 0	1 6 9	3 1 11
7	7	13 6	6 7	—	1 15 6	2 15 7
8	6	14 0	6 6	2 7	1 14 1	2 17 2
9	4	19 8	7 7	7 10	1 18 6	3 13 7
Average	7½	15 10	5 7	5 8	1 8 0	2 15 1

TABLE 39—continued.

Farm No.	Field Labour b/f.	Seed	Manures	Rent	Twine	Net Manurial Residues	Net Cultural Residues	Threshing Labour & Machine Hire	Total	Yield	Cost per Quarter
1	£ s. d. 2 2 7	£ s. d. 3 0 0	£ s. d. 11 0	£ s. d. 1 2 4	s. d. 2 9	£ s. d. —	£ s. d. —	£ s. d. 1 1 10	£ s. d. 8 0 6	Qrs. 5	£ s. d. 1 12 1
2	2 6 11	3 0 0	1 2 6	1 0 0	4 2	+ 11 8	—	1 9 2	9 14 5	7½	1 5 11
3	2 3 0	1 17 6	3 0 0	2 2 6	3 7	- 1 0 0	—	1 9 0	9 15 7	5	1 19 1
4	3 9 7	2 12 9	1 10 7	1 0 6	8 0	- 10 2	—	2 0 0	10 11 3	5½	1 18 4
5	2 5 4	2 16 3	—	1 5 0	4 0	+ 1 10 0	2 10 0	1 8 0	11 18 7	5½	2 3 5
6	3 1 11	2 2 3	—	1 5 0	2 7	+ 1 6 8	2 10 0	1 12 9	12 1 2	5½	2 3 10
7	2 15 7	3 5 0	—	3 5 0	3 5	+ 1 4 0	2 0 0	1 8 8	14 1 8	6	2 6 11
8	2 17 2	3 10 0	4 0 0	1 1 0	5 3	- 9 2	1 17 6	1 6 8	14 8 5	5	2 17 8
9	3 13 7	3 0 0	—	1 13 0	2 7	+ 3 0 0	2 0 0	1 13 4	15 2 6	4½	3 7 2
Average	2 15 1	2 15 11	1 2 8	1 10 5	4 0	+ 12 7	1 4 3	1 9 11	11 14 10	5½	2 2 9

TABLE 40.
BARLEY COSTS 1943. (Costs per acre).

(b) WOLD FARMS.

Farm No.	Acres Costed	Seedbed Preparation			Drilling and Covering			Other Cultivations			Harvesting			Total Field Labour			
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	
1	65		6	4		2	4		—		7	2 ^(c)			15	10	
2	40		17	5		6	1		2	11		9	3		1	15	8
3	26		14	5		3	4		3	3		14	0		1	15	0
4	38		13	10		3	3		1	6		1	12	11	2	11	6
5	26		17	9		3	7		19	0		2	2	6	4	2	10
6	24		13	9		4	3		5	4		2	10	0	3	13	4
7	42		10	4		5	1		1	5		1	3	9	2	0	7
8	32		7	11		5	8		3	2		19	8		1	16	5
9	22		16	5		4	11		12	6		2	12	8	4	6	6
10	17		1	7	7		7	4	2	8		1	2	3	2	19	10
11	6 $\frac{1}{2}$		1	10	10		8	6	1	11		1	5	7	3	6	10
12	8		13	3		4	2		5	0		1	13	3	2	15	8
13	37		12	1		3	3		2	4		1	18	7	2	16	3
14	20		1	0	8		3	0	4	9		1	10	10	2	19	3
15	31		17	5		3	2			7		1	3	0	2	4	2
16	13		1	7	11		5	0	1	0	5	1	11	5	4	4	9
17	18		9	11		7	0		6	6		1	14	7	2	18	0
Average*	25		16	11		4	11		5	9		1	10	3	2	17	10

TABLE 40—continued.

Farm No.	Field Labour b/f.			Seed			Manures			Rent			Twine	Net Manurial Residues			Net Cultural Residues			Threshing Labour & Machine Hire			Total			Yield Qrs.	Cost per Quarter										
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.		s.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.		d.	£	s.	d.							
1																																					
2		15	10	2	19	1				1	0	0																									
3		1	15	8	1	17	6	3	0	0																											
4		1	15	0	2	9	0																														
5		2	11	6	2	11	4		18	11																											
6		4	2	10	3	0	0		10	0																											
7		3	13	4	2	14	5	1	1	0																											
8		2	0	7	2	15	4	1	12	2																											
9		1	16	5	2	15	0		16	6																											
10		4	6	6	2	16	8																														
11		2	19	10	3	0	0	1	13	1																											
12		3	6	10	3	8	0																														
13		2	15	8	3	1	3																														
14		2	16	3	3	4	4	2	10	0																											
15		2	19	3	3	18	0																														
16		2	4	2	3	17	5		4	2																											
17		4	4	9	3	0	0	4	15	1																											
17		2	18	0	3	19	9	2	3	9																											
Average *		2	17	10	3	0	6	1	4	1																											

* No. 1 has been excluded from the average.
(c) Combine harvested.

TABLE 41.

BARLEY COSTS 1943. (Costs per acre).

(c) LIMESTONE HEATH FARMS.

Farm No.	Acres Costed	Seedbed Preparation	Drilling and Covering	Other Cultivations	Harvesting	Total Field Labour
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	27	11 11	4 6	3 4	1 0 7	2 0 4
2	9	18 10	6 9	1 6	1 4 4	2 11 5
3	10	1 11 0	3 0	11 10	1 3 2	3 9 0
4	13	1 11 11	6 3	6 11	1 7 7	3 12 8
5	9	12 11	4 9	3 2	17 8	1 18 6
6	5½	2 5 5	4 2	7 8	1 6 4	4 3 7
Average	12	1 5 4	4 11	5 9	1 3 3	2 19 3

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Farm No.	Field Labour b/f.	Seed	Artificial	Rent	Twine	Net Manurial Residues	Net Cultural Residues	Threshing Labour & Machine Hire	Total	Yield	Cost per Quarter
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Qrs.	£ s. d.
1	2 0 4	2 19 3	8 4	1 0 0	2 9	+ 1 4 0	1 10 0	19 6	10 4 2	6½	1 11 5
2	2 11 5	2 16 11	15 7	1 2 6	3 2	+ 1 8 0	1 5 0	1 4 4	11 6 11	6	1 17 10
3	3 9 0	3 10 0	2 12 0	1 0 0	3 0	- 10 0	—	1 3 2	11 7 2	2	5 13 7
4	3 12 8	3 13 10	2 10 0	1 5 0	2 9	- 16 8	—	1 9 9	11 17 4	5¾	2 1 3
5	1 18 6	2 13 4	1 10 0	2 0 0	2 6	+ 1 4 2	1 10 0	1 8 8	12 7 2	7	1 15 3
6	4 3 7	3 3 8	1 1 0	1 8 6	2 5	+ 1 6 8	1 10 0	2 5 2	15 1 0	6½	2 6 3
Average	2 19 3	3 2 10	1 9 6	1 6 0	2 9	+ 12 8	19 3	1 8 5	12 0 8	5½	2 2 9

TABLE 42.

BARLEY COSTS 1944. (Costs per Acre).

(a) CARR FARMS.

Farm No.	Acres Costed	Preliminary Cultivations			Seeding and Covering			Applying Artificials			Other Cultivations			Harvesting			Total Field Labour					
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.			
1	5		15	8		10	4		—		8	6		1	4	4		2	18	10		
2	7½		18	9		6	1		—		6	1		1	4	1		2	15	0		
3	14		1	5	2		7	1		2	6		6	1	1	13	9		3	14	7	
4	9		16	1		6	9		1	10		3	2		1	9	0		2	16	10	
5	6		17	6		5	10			9		8	11		1	19	1		3	12	1	
6	11		10	8		4	11		1	6		—			1	11	9		2	8	10	
7	8½		1	2	3		6	10		9	2		10	8		1	17	9		4	6	8
8	3			9	1		6	5		—			5	1		1	11	4		2	11	11
9	7		1	0	5		7	10		11	2		14	7		1	3	5		3	17	5
10	1		1	13	3		13	2		2	10		5	8		2	14	3		5	9	2
Average	7		18	11		7	6		2	11		6	10		1	12	11		3	9	1	

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Farm No.	Field Labour b/f.			Seed			Artificials			Rent			Twine	Net Manurial Residues			Net Cultural Residues			Threshing Labour & Machine Hire			Total			Yield Qrs.	Cost per Quarter									
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.		s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£		s.	d.	£	s.	d.					
1		2	18	10		2	5	0		—		1	0	0	3	0				1	1	0		7	7	10	3		2	9	3					
2		2	15	0		2	13	4		—		1	3	6	4	5				1	6	6		8	2	9	7		1	3	3					
3		3	14	7		1	19	4		1	11	10		1	3	0	5	5	—	7	7		1	10	5	9	17	0	4		2	9	3			
4		2	16	10		2	16	3		16	6		1	0	0	4	9			—			2	4	0	9	18	4	6		1	13	1			
5		3	12	1		1	18	11		11	0		1	6	0	3	4				1	6	8		1	18	0	10	16	0	3½		3	1	8	
6		2	8	10		2	14	7		3	8	0		1	5	0	3	5	—	10	0		1	10	0	10	19	10	4		2	14	11			
7		4	6	8		2	11	3		2	9	7		12	3	2	6			10	10		1	11	0	11	2	5	4		2	15	7			
8		2	11	11		1	7	6		—			1	6	0	3	2		+	2	0	4		1	10	0	2	9	4	11		8	3			
9		3	17	5		1	12	10		3	5	2		1	5	0	2	8	—	1	5		1	3	2	12	9	1	3½		3	11	2			
10		5	9	2		3	10	0		5	0	0		1	15	0	3	0	—	1	13	4		2	1	0	16	4	10	5½		2	19	1		
Average		3	9	1		2	6	11		1	14	2		1	3	7	3	7	—	2	3		8	1		1	13	5	10	16	7	4½		2	8	2

TABLE 43.
BARLEY COSTS 1944. (Costs per Acre).

(b) WOLD FARMS.

Farm No.	Acres Costed	Preliminary Cultivations			Seeding and Covering			Applying F.Y.M. and Artificials			Other Cultivations			Harvesting			Total Field Labour			
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	
1	36		11	4		3	9		—		10	0		18	7	(c)		2	3	8
2	30		1	3	3		2	5		1	4			1	4	1		2	14	7
3	9			18	6		13	6		—					13	2		2	5	2
4	16		1	4	6		9	0		1	11			1	12	1		3	13	2
5	30			7	0		6	7		2	0			2	15	0	(c)	3	10	7
6	38		1	11	11		5	7		5	0			1	1	1		3	3	7
7	13			12	1		7	10		—				2	6	0		3	5	11
8	37			12	9		6	4		1	9			1	11	11		2	12	9
9	46			16	1		7	6		1	7			2	8	2		3	19	1
10	8½		1	0	3		4	10		—				1	4	10		2	14	0
11	22½			18	10		9	3		1	5	4		2	12	2		5	5	7
Average*	24½		19	9		7	4		4	1		2	1	1	12	8		3	5	11

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Farm No.	Field Labour b/f.	Seed	Artificials	F.Y.M.	Rent	Twine	Net Manurial Residues	Net Cultural Residues	Threshing Machine & Labour Hire	Total	Yield	Cost per Quarter
1	£ s. d. 2 3 8	£ s. d. 2 5 0	£ s. d. —	£ s. d. —	£ s. d. 1 0 0	s. d. (c)	£ s. d. —	£ s. d. 2 0 0	£ s. d. (c)	£ s. d. 7 8 8	Qrs. 5½	£ s. d. 1 7 0
2	2 14 7	2 5 1	14 2	—	15 0	2 0	+ 6 8	18 8	1 10 11	9 7 1	4	2 6 9
3	2 5 2	3 14 10	—	—	1 8 6	1 7	—	1 0 0	19 0	9 9 1	2½	3 15 9
4	3 13 2	2 1 3	1 1 0	—	1 5 6	2 4	—	—	1 6 6	9 9 9	3½	2 14 3
5	3 10 7	2 1 8	1 8 1	—	1 6 0	(c)	- 9 4	2 10 0	(c)	10 7 0	5	2 1 5
6	3 3 7	2 4 1	2 13 11	—	1 10 0	2 11	—	—	1 3 11	10 18 5	3	3 12 9
7	3 5 11	2 2 4	—	—	10 0	3 0	+ 16 8	3 10 0	17 11	11 5 10	2	5 12 11
8	2 12 9	2 7 9	1 0 0	—	10 0	3 0	+ 1 0 4	2 7 7	1 10 11	11 12 4	3½	3 6 4
9	3 19 1	1 18 3	1 2 7	—	15 0	2 6	+ 2 3	3 10 0	1 4 0	12 13 8	3½	3 12 6
10	2 14 0	1 17 1	—	—	18 0	3 0	+ 2 11 9	3 10 0	1 8 6	13 2 6	4½	3 1 9
11	5 5 7	2 1 8	1 9 5	4 5 4	10 0	3 0	- 1 11 0	2 0 0	1 10 8	15 14 8	5	3 2 11
Average*	3 5 11	2 5 10	17 11	9 6	18 0	2 8	+ 7 2	1 17 5	1 5 11	11 10 4	3½	3 6 4

* Excluding Nos. 1 and 5.

(c) Combine harvested.

TABLE 44.
BARLEY COSTS 1944. (Costs per acre).
(c) LIMESTONE HEATH FARMS.

Farm No.	Acres Costed	Preliminary Cultivations	Seeding and Covering	Applying Artificials	Other Cultivations	Harvesting	Total Field Labour
1	6	£ s. d. 1 12 0	£ s. d. 7 4	£ s. d. 1 8	£ s. d. 7 6	£ s. d. 1 18 7	£ s. d. 4 7 1
2	9	1 9 3	7 6	8 9	3 9	1 14 1	4 3 4
3	28	12 7	4 7	1 11	1 6	2 3 1	3 3 8
Average	14	1 4 7	6 5	4 1	4 3	1 18 8	3 18 0

Farm No.	Field Labour b/f.	Seed	Artificials	Rent	Twine	Net Manurial Residues	Net Cultural Residues	Threshing Labour & Machine Hire	Total	Yield	Cost per Quarter
1	£ s. d. 4 7 1	£ s. d. 1 17 11	£ s. d. 1 6 8	£ s. d. 1 5 0	s. d. 3 2	£ s. d. - 9 0	—	£ s. d. 1 14 6	£ s. d. 10 5 4	Qrs. 5	£ s. d. 2 1 1
2	4 3 4	2 7 10	2 18 9	1 8 6	2 10	- 8 6	—	1 15 0	12 7 9	6	2 1 3
3	3 3 8	2 14 3	2 0 0	2 0 0	2 8	+ 1 6 0	1 10 0	1 18 0	14 14 7	5	2 18 11
Average	3 18 0	2 6 8	2 1 10	1 11 2	2 10	+ 2 10	10 0	1 15 10	12 9 2	5	2 6 9

TABLE 45.
POTATO COSTS, 1946—WARP GROUP—ALL CLAMPED. (Costs per acre).

Farm No.	Preliminary Cultivations	Application of F.Y.M.	Application of Artificials	Setting and Covering	Summer Cultivations	Harvest	Dressing and Loading	Total Labour
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
8 CROPS	UNDAMAGED.							
1	2 11 11	—	4 3	1 3 0	2 14 10	6 8 3	3 9 6	16 11 9
2	2 7 4	2 9 6	3 3	1 15 6	1 13 1	7 5 0	4 1 10	19 15 6
3	2 19 0	—	5 11	2 11 0	1 8 4	9 5 2	5 12 6	22 1 11
4	2 11 2	—	3 7	1 13 5	2 13 1	9 19 5	5 8 8	22 9 4
5	1 1 3	—	6 0	1 12 0	1 19 7	9 19 2	2 18 0	17 16 0
6	1 5 9	1 1 9	6 1	1 9 8	1 18 9	8 15 6	11 8 7	26 6 1
7	2 5 1	1 15 9	7 9	1 15 2	1 19 5	8 2 10	4 8 1	20 14 1
8	3 13 5	2 3 6	5 3	2 1 11	2 12 11	8 15 8	5 13 1	25 5 9
Average	2 6 10	18 10	5 3	1 15 3	2 2 6	8 11 5	5 7 6	21 7 7
4 CROPS	DAMAGED	BY FLOODS.						
9	1 7 11	—	4 0	1 1 6	1 17 9	9 17 6	4 2 7	18 11 3
10	1 17 4	2 5 5	4 0	1 3 10	1 14 3	11 2 1	2 1 7	20 8 6
11	1 16 8	2 5 11	2 5	1 7 1	2 11 3	8 0 4	1 0 6	17 4 2
12	1 15 7	—	5 0	1 7 2	1 6 0	8 14 4	—	13 8 1
Average	1 14 5	1 2 10	3 10	1 4 10	1 17 4	9 8 7	1 16 2	17 8 0

TABLE 45—continued.

Farm No.	Total Labour	F.Y.M.	Artificial	Seed	Rent	Straw	Gross Cost	Net Residual Credit		Net Cost	Total Yield	Yield for disposal	Cost per ton sold.
								Manurial	Cultural				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	T. Cts.	T. Cts.	£ s. d.
8 CROPS UNDAMAGED.													
1	16 11 9	—	5 15 6	7 16 3	1 17 1	1 5 0	33 5 7	1 8 6	1 10 4	30 6 9	9 14	9 14	3 2 6
2	19 15 6	10 0 0	7 6 8	11 13 4	4 0 0	17 9	53 13 3	6 18 0	17 2	45 18 1	13 14	13 14	3 7 0
3	22 1 11	—	8 0 2	14 3 9	2 1 6	1 5 8	47 13 0	1 13 0	2 3 10	43 16 2	11 4	11 4	3 16 6
4	22 9 4	—	8 14 9	17 12 6	3 5 6	18 9	53 0 10	2 3 0	1 9 1	49 8 9	12 7	12 7	4 0 0
5	17 16 0	—	7 10 0	11 5 0	3 0 0	1 6 3	40 17 3	1 18 8	2 9 1	36 9 6	8 9	8 9	4 6 6
6	26 6 1	8 0 0	7 6 1	13 19 10	3 18 0	18 9	60 8 9	5 1 8	9 4	54 17 9	12 5	12 5	4 9 6
7	20 14 1	12 0 0	7 0 0	16 16 0	2 1 6	16 8	59 8 3	7 15 0	19 3	50 14 0	10 15	10 15	4 14 6
8	25 5 9	10 0 0	7 6 9	8 15 0	3 14 3	15 3	55 17 0	6 14 0	3 15 8	45 7 4	9 7	9 7	4 17 0
Average	21 7 7	5 0 0	7 7 6	12 15 2	2 19 9	1 0 6	50 10 6	4 4 0	1 14 3	44 12 3	10 19½	10 19½	4 1 4
4 CROPS DAMAGED BY FLOODS.													
9	18 11 3	—	5 5 1	14 6 0	2 0 7	7 6	40 10 5	1 5 8	1 2 10	38 1 11	12 2	9 8	4 1 6
10	20 8 6	12 0 0	6 11 5	14 10 4	3 3 0	17 10	57 11 1	7 9 8	2 7 2	47 14 3	9 14	5 3	9 5 0
11	17 4 2	12 0 0	5 16 11	16 7 10	2 19 0	1 15 0	56 2 11	7 5 8	3 3 11	45 13 4	14 0	3 16	12 0 0
12	13 8 1	—	6 3 6	12 10 8	2 3 0	10 0	34 15 3	5 4	2 10 10	31 19 1	6 0	—	—
Average	17 8 0	6 0 0	5 19 3	14 8 8	2 11 5	17 7	47 4 11	4 1 7	2 6 2	40 17 2	10 9	4 12	8 18 1

TABLE 46.
POTATO COSTS, 1946—FEN GROUP. (Costs per acre).

Farm No.	Preliminary Cultivations	Application of F.Y.M.	Application of Artificials	Setting and Covering	Summer Cultivations	Harvest	Dressing and Loading	Total Labour
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
9 CROPS	CLAMPED.							
13	2 6 5	1 10 11	4 4	2 2 8	1 3 5	10 15 2	5 0 1	23 3 0
14	1 8 9	12 6	4 0	16 5	1 10 4	10 19 11	2 16 11	18 8 10
15	2 2 8	—	2 8	1 2 10	2 5 11	11 3 6	5 13 9	22 11 4
16	1 3 6	1 10 3	5 5	2 2 6	3 0 4	8 11 5	3 17 4	20 10 9
17	1 13 9	8 8	3 6	1 0 8	1 18 4	7 3 0	7 12 0	19 19 11
18	1 6 4	—	6 6	2 1 3	1 8 7	9 12 7	4 6 0	19 1 3
19	1 13 0	2 1 9	3 10	2 3 0	17 8	8 17 9	3 3 4	19 0 4
20	3 0 10	2 19 4	5 5	2 10 5	2 0 1	12 18 9	4 6 2	28 1 0
21	1 11 2	1 7 8	6 5	19 10	2 9 1	8 5 7	5 6 9	20 6 6
Average	1 16 3	1 3 5	4 8	1 13 4	1 17 1	9 16 5	4 13 7	21 4 9
2 CROPS	SOLD FROM FIELD.							
22	1 18 5	1 13 2	1 9	1 3 5	2 18 2	9 7 9*	—	17 2 8
23	1 14 9	17 11	4 7	1 16 9	2 3 0	15 13 2*	—	22 10 2
Average	1 16 7	1 5 6	3 2	1 10 1	2 10 7	12 10 6*	—	19 16 5

TABLE 46—continued.

Farm No.	Total Labour	F.Y.M.	Artificial	Seed	Rent	Straw	Gross Cost	Net Residual Credit		Net Cost	Total Yield	Cost per ton sold
								Manurial	Cultural			
9 CROPS CLAMPED.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	T. Cts.	£ s. d.
13	23 3 0	12 0 0	7 11 6	13 7 6	3 2 0	1 0 0	60 4 0	7 14 2	11 11	51 17 11	12 18	4 0 6
14	18 8 10	12 0 0	6 13 4	8 6 8	2 15 6	19 0	49 3 4	7 14 2	1 7 6	40 1 8	9 9	4 5 0
15	22 11 4	—	6 8 8	10 1 2	3 18 0	2 7 0	45 6 2	—	—	45 6 2	9 17	4 12 0
16	20 10 9	6 5 3	8 2 9	12 8 7	2 0 0	1 6 1	50 13 5	4 11 9	3 1 11	42 19 9	8 18	4 16 6
17	19 19 11	5 0 0	6 19 8	7 13 11	15 6	11 11	41 0 11	4 0 0	12 1	36 8 10	7 9	4 18 0
18	19 1 3	—	6 4 0	10 12 1	2 5 0	4 2	38 6 6	1 8 6	2 7 6	34 10 6	6 13	5 4 0
19	19 0 4	10 0 0	5 19 1	11 16 3	2 8 0	2 1 2	51 4 10	6 8 6	2 4	44 14 0	8 11	5 4 6
20	28 1 0	10 0 0	6 0 0	11 3 3	2 10 0	13 8	58 7 11	6 8 5	2 0 6	49 19 0	8 5	6 1 0
21	20 6 6	4 0 0	4 17 6	8 2 7	2 8 0	5 0	39 19 7	3 8 6	1 8 8	35 2 5	5 3	6 16 6
Average	21 4 9	6 11 8	6 10 9	10 8 0	2 9 1	1 0 11	48 5 2	4 12 8	1 5 10	42 6 8	8 11	4 18 9
2 CROPS SOLD FROM FIELD.												
22	17 2 8	14 0 0	6 11 1	13 2 3	3 18 0	—	54 14 0	8 0 0	2 0 2	44 13 10	13 16	3 5 0
23	22 10 2	3 10 0	8 3 0	14 15 7	2 0 0	—	50 18 9	3 6 11	1 9 10	46 2 0	10 5	4 10 0
Average	19 16 5	8 15 0	7 7 0	13 18 11	2 19 0	—	52 16 4	5 13 5	1 15 0	45 7 11	12 0	3 15 6

* Including Dressing and Loading.

TABLE 47.
 POTATO COSTS, 1946—LIMESTONE & WOLD GROUP (Costs per acre).

Farm No.	Preliminary Cultivations	Application of F.Y.M.	Application of Artificials	Setting and Covering	Summer Cultivations	Harvest	Dressing and Loading	Total Labour
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 CROPS CLAMPED.								
24	2 6 9	1 11 7	5 7	1 7 6	6 0 0	8 17 3	6 15 3	27 3 11
25	1 13 0	4 18 11	3 0	1 10 1	1 5 10	7 0 1	4 12 6	21 3 5
26	1 9 4	2 15 8	4 6	1 19 8	2 0 5	8 14 3	6 7 7	23 11 5
27	2 19 0	2 18 0	3 8	2 9 9	1 10 6	13 12 10	5 12 1	29 5 10
28	2 15 0	1 8 0	4 11	1 19 6	14 10	12 5 3	10 7 10	29 15 4
29	3 6 2	3 13 4	1 11	2 5 8	18 1	8 15 2	10 2 0	29 2 4
30	1 3 4	18 1	2 7	19 10	1 5 9	8 7 7	3 1 2	15 18 4
31	2 8 6	2 13 1	6 4	1 10 2	2 4 1	8 2 6	6 12 9	23 17 5
32	2 1 3	2 0 0	4 11	1 8 5	2 9 7	15 0 9	7 19 2	31 4 1
33	2 7 5	—	4 6	1 16 1	1 17 10	8 17 4	2 0 4	17 3 6
34	3 1 1	6 2	11 3	1 19 3	2 15 10	9 13 7	6 16 7	25 3 9
35	3 6 11	2 13 10	3 5	2 4 4	3 6 6	5 15 9	3 7 2	20 17 11
Average	2 8 1	2 2 3	4 8	1 15 10	2 4 1	9 11 10	6 2 10	24 10 7
3 CROPS SOLD FROM FIELD.								
31	2 8 6	2 13 1	6 4	1 10 2	2 4 1	6 1 0*	—	15 3 2
34	3 1 1	6 2	11 3	1 19 3	2 15 10	8 10 7*	—	17 4 2
32	2 1 3	2 0 0	4 11	1 8 5	2 9 7	14 2 1*	—	22 6 3
Average	2 10 3	1 13 1	7 6	1 12 7	2 9 10	9 11 3*	—	18 4 6

TABLE 47—continued.

Farm No.	Total Labour	F.Y.M.	Artificial	Seed	Rent	Straw	Gross Costs	Net Residual Credit		Net Cost	Total Yield	Cost per ton sold
								Manurial	Cultural			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	T. Cts.	£ s. d.
12 CROPS CLAMPED.												
24	27 3 11	10 0 0	9 0 0	4 1 3	1 0 0	15 0	52 0 2	6 13 8	1 4 4	44 2 2	11 1	4 0 0
25	21 3 5	12 0 0	6 7 6	8 2 0	1 5 0	5 0	49 2 11	7 6 11	6 5	41 9 7	8 8	4 18 6
26	23 11 5	12 0 0	7 5 4	8 13 7	1 0 0	16 8	53 7 0	7 14 2	1 4 11	44 7 11	8 13	5 3 0
27	29 5 10	8 0 0	6 14 2	12 16 10	1 5 0	18 6	59 0 4	5 2 0	3 4 9	50 13 7	9 12	5 5 6
28	29 15 4	8 0 0	8 16 6	17 1 8	1 4 9	1 0	65 18 9	5 12 5	11†	60 7 3	11 6	5 7 0
29	29 2 4	7 0 0	6 19 2	10 18 0	1 1 0	1 0	56 0 6	5 7 8	3 2 0	47 10 10	8 14	5 10 0
30	15 18 4	7 4 0	7 16 10	5 13 4	1 17 6	16 8	39 6 8	5 19 6	13 6†	34 0 8	5 17	5 16 6
31	23 17 5	9 12 9	6 13 8	9 1 2	1 8 0	15 0	51 13 0	5 19 0	1 3 4	44 10 8	7 12	5 17 0
32	31 4 1	10 0 0	7 12 0	14 3 9	17 6	1 17	65 14 10	6 14 2	1 2 6	57 18 2	9 0	6 8 6
33	17 3 6	—	6 0 9	13 6 10	1 10 0	15 0	38 16 1	1 5 0	3 2 8	34 8 5	5 0	6 17 6
34	25 3 9	19 2	12 2 2	6 16 0	1 5 0	10 10	46 16 11	2 12 4	3 3 5	41 1 2	5 15	7 2 6
35	20 17 11	5 10 0	2 8 9	8 1 8	1 17 6	18 9	39 14 7	2 15 0	2 3 8	34 15 11	4 9	7 16 0
Average	24 10 7	7 10 6	7 6 10	9 18 0	1 5 11	17 6	51 9 4	5 5 2	1 12 0	44 12 2	7 19	5 12 0
3 CROPS SOLD FROM FIELD.												
31	15 3 2	9 12 9	6 18 8	9 1 2	1 8 0	—	42 3 9	5 19 0	1 3 4	35 1 5	10 0	3 10 0
34	17 4 2	19 2	12 2 2	6 16 0	1 5 0	—	38 6 6	2 12 4	3 3 5	32 10 9	6 10	5 0 0
32	22 6 3	10 0 0	7 12 0	23 17 0	17 6	—	64 12 9	6 14 2	1 2 6	56 16 1	7 10	7 11 6
Average	18 4 6	6 17 4	8 17 7	13 4 9	1 3 6	—	48 7 8	5 1 10	1 16 5	41 9 5	8 0	5 3 8

* Including Dressing and Loading.

† Residual Debit.

TABLE 48.
SUGAR BEET COSTS, 1945—WARP AND FEN GROUPS—(Costs per acre).

Farm No.	Preliminary Cultivations	Application of Artificials	Application of F.Y.M.	Drilling and Covering	Summer Cultivations	Harvesting	Total Labour Cost
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
(a) WARP FARMS.							
1	14 10	5 0	—	8 9	6 1 10	6 11 8	14 2 1
2	1 8 4	4 11	—	14 11	5 13 2	10 4 1	18 5 5
3	1 12 10	1 4 3	—	6 4	3 13 5	7 16 11	14 13 9
4	1 17 10	3 7	—	16 5	4 18 6	4 17 5	12 13 9
Average	1 8 6	9 5	—	11 7	5 1 9	7 7 6	14 18 9
(b) FEN FARMS.							
1	1 13 9	5 9	—	11 6	3 13 6	11 6 1	17 10 7
2	1 4 11	8 11	—	6 7	5 17 2	9 11 4	17 8 11
3	1 0 7	3 7	—	5 9	7 7 7	8 6 6	17 4 0
4	1 17 0	4 10	—	7 0	5 8 8	7 10 6	15 8 0
5	1 2 0	2 4	—	14 1	6 1 9	8 18 10	16 19 0
6	16 8	4 5	1 7 7	5 2	6 13 8	11 10 4	20 17 10
7	1 16 5	3 11	1 10 6	6 0	6 8 10	9 4 6	19 10 2
Average	1 7 4	4 10	8 5	8 0	5 18 9	9 9 9	17 16 11

TABLE 48—continued.

Farm No.	Total Labour Cost	Seed	Artificials	F.Y.M.	Rent	Freightage	Gross Cost	Residual Credit	Net Cost	Yield	Sugar Content	Cost per ton
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Tons Cwts.	%	s. d.
(a) WARP FARMS.												
1	14 2 1	17 6	5 2 10	—	2 4 1	4 9 4	26 15 10	6 3 4	20 12 6	10 16	17.1	38 0
2	18 5 5	15 4	5 9 6	—	1 18 0	4 18 4	31 6 7	4 2 5	27 4 2	13 3	17.5	41 6
3	14 13 9	18 0	10 12 0	—	1 10 0	4 10 0	32 3 9	3 7 2	28 16 7	11 11	16.9	50 0
4	12 13 9	17 7	2 14 1	—	2 0 0	18 7	19 4 0	4 1 1	15 2 11	2 13	16.9	114 0
Average	14 18 9	17 1	5 19 7	—	1 18 0	3 14 1	27 7 6	4 8 6	22 19 0	9 11	17.1	48 0
(b) FEN FARMS.												
1	17 10 7	18 9	4 16 9	—	3 0 0	1 6 0	27 12 1	5 17 9	21 14 4	14 15	15.7	29 6
2	17 8 11	18 0	4 0 10	—	2 8 0	7 18 0	32 13 9	7 1 2	25 12 7	14 14	15.0	35 0
3	17 4 0	18 7	4 8 0	—	1 18 3	3 5 9	27 14 7	6 11 9	21 2 10	11 2	17.2	38 0
4	15 8 0	17 0	4 4 10	—	2 0 0	1 18 8	24 18 6	5 12 6	18 16 0	8 4	15.3	46 0
5	16 19 0	1 2 0	5 10 0	—	1 9 6	4 7 3	29 7 9	5 11 8	23 16 1	10 3	16.5	47 0
6	20 17 10	1 0 4	6 0 10	4 16 0	2 10 0	5 11 10	40 16 10	8 1 4	32 15 6	13 9	17.4	48 6
7	19 10 2	1 2 5	4 17 6	5 14 4	3 5 3	5 7 0	39 16 8	6 13 4	33 3 4	11 0	16.9	60 6
Average	17 16 11	19 6	4 17 0	1 10 0	2 7 4	4 5 0	31 15 9	6 9 11	25 5 10	11 18	16.3	42 6

TABLE 49.
SUGAR BEET COSTS, 1945—WOLD AND LIMESTONE GROUPS—(Costs per acre).

Farm No.	Preliminary Cultivations	Application of Artificials	Application of F.Y.M.	Drilling and Covering	Summer Cultivations	Harvesting	Total Labour Cost
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
(c) WOLD FARMS.							
1	2 3 3	3 9	—	5 2	4 16 11	7 8 4	14 7 5
2	2 6 8	4 5	—	5 8	5 16 0	9 19 7	18 12 4
3	1 16 9	6 2	—	4 3	5 7 4	8 3 0	15 17 6
4	1 13 8	4 4	1 16 3	4 9	4 16 10	10 6 8	19 2 6
5	2 7 7	8 5	—	6 11	6 1 0	6 15 1	15 19 0
Average	2 1 7	5 5	7 3	5 4	5 7 8	8 10 6	16 17 9
(d) LIMESTONE FARMS.							
1	2 4 10	1 6	—	7 1	5 19 4	4 14 8	13 7 5
2	2 19 3	4 0	—	4 2	5 17 10	9 19 8	19 4 11
3	1 9 8	9 5	—	6 2	6 4 5	9 16 2	18 5 10
4	1 4 9	3 10	—	5 0	6 7 11	8 1 1	16 2 7
5	1 8 5	3 6	—	5 0	6 6 3	7 6 10	15 10 0
6	1 16 10	5 3	—	7 3	5 16 10	9 2 6	17 8 8
7	1 19 0	7 4	—	5 3	7 10 5	13 10 7	23 12 7
Average	1 17 7	5 0	—	5 7	6 6 2	8 18 10	17 13 2

TABLE 49—continued.

Farm No.	Total Labour Cost	Seed	Artificial	F.Y.M.	Rent	Freightage	Gross Cost	Residual Credit	Net Cost	Yield	Sugar Content	Cost per ton
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	tons. cwts.	%	s. d.
(c) WOLD FARMS.												
1	14 17 5	18 0	4 13 4	—	1 17 6	3 1 6	25 7 9	5 9 4	19 18 5	8 4	17.5	48 6
2	18 12 4	18 8	6 11 0	—	1 1 0	2 4 9	29 7 9	6 8 5	22 19 4	8 8	19.3	54 6
3	15 17 6	16 2	7 19 9	—	13 0	2 17 7	28 4 0	5 6 3	22 17 9	8 0	16.1	57 0
4	19 2 6	18 8	6 7 4	4 0 0	1 10 7	6 4 0	38 3 9	7 2 2	31 1 7	10 9	14.9	59 6
5	15 19 0	12 6	8 9 0	—	1 5 0	4 13 0	30 18 6	6 9 5	24 9 1	7 9	15.1	65 6
Average	16 17 9	16 10	6 16 1	16 0	1 5 5	3 16 3	30 8 4	6 3 1	24 5 3	8 10	16.6	57 0
(d) LIMESTONE FARMS.												
1	13 7 5	18 0	4 7 6	—	1 7 6	2 12 6	22 12 11	6 7 11	16 5 0	10 8	17.0	31 0
2	19 4 11	15 0	7 17 6	—	1 0 0	6 17 8	35 15 1	8 0 6	27 14 7	15 7	15.2	36 0
3	18 5 10	18 9	6 9 2	—	1 8 4	4 5 1	31 7 2	6 16 6	24 10 8	12 17	16.4	38 0
4	16 2 7	17 10	9 1 5	—	15 6	4 16 3	31 13 7	3 2 1	28 11 6	12 16	20.3	46 6
5	15 10 0	14 0	6 14 3	—	1 0 0	3 3 0	27 1 3	6 8 1	20 13 2	8 18	16.9	46 6
6	17 8 8	14 11	5 17 0	—	1 1 6	3 18 5	29 0 6	6 4 2	22 16 4	9 7	17.5	49 0
7	23 12 7	17 7	7 6 2	—	1 0 0	1 12 10	34 9 2	7 14 2	26 15 0	10 9	16.1	51 0
Average	17 13 2	16 6	6 16 2	—	1 1 10	3 18 0	30 5 8	6 7 8	23 18 0	11 9	17.0	41 6

APPENDIX B.

METHOD OF COMPILATION AND STANDARD CHARGES USED IN THE CALCULATION OF CROP COSTS.

Usually, as a matter of convenience, a single field was costed but occasionally two fields or the whole crop were recorded. A field record was kept by the farmer on which were entered :

- (i) the cropping and manuring history of the field
- (ii) direct charges to the crop : rent, purchased seeds, artificials, etc.
- (iii) home grown supplies used : home grown seed, farmyard manure, straw, etc.
- (iv) a labour record, including the actual time worked by the regular farm staff including that of the farmer and his family, horses and tractors, and the actual cost of contract work, piecework and casual labour.

The cost of performing the necessary operations was calculated directly from the labour record. Actual weekly wage rates for manual labour were in most cases ascertained. (These in fact were rarely much above the statutory minimum). An hourly rate was calculated from these weekly rates and took into account holidays with pay, bank holiday pay, insurances, and "normal" overtime. This rate was used in calculating costs on all farms except where weekly rates were above normal in which cases a higher rate was calculated. Overtime was not charged at special rates except for harvest work on the corn crops. It was considered that exceptional rates of payment for this work were fairly chargeable to the crop concerned whereas occasional overtime at other times could be best dealt with by charging a flat rate for the labour time which took account of any overtime which might be necessary for the efficient running of the farm. Manual work done by the farmer or his foreman was charged at ordinary workers' rates and no charge was included for supervisory or managerial work.

Tractors and horses were charged at the following rates per hour in the different years, in addition to the cost of the driver. (These figures are based on cost enquiries carried out separately at this and other centres and were the best available for the average costs of these items at the different dates).

TABLE 50.
CHARGES FOR TRACTOR AND HORSE LABOUR.

	1932-3	1942	1943	1944	1945	1946
Tractors :						
Light	2s. 6d.	2s. 6d.	2s. 6d.	2s. 6d.	2s. 6d.	3s. 0d.
Medium	—	—	—	3s. 6d.	2s. 6d.	3s. 0d.
Tracklaying	—	—	—	5s. 0d.	5s. 0d.	4s. 6d.
Horses :						
.....	4½d.	7d.	8d.	8d.	10d.	10d.

Manurial residues were calculated according to Hall and Voelcker's tables for the earlier years and according to the revised tables recommended by the Scott Watson Committee in 1946.

Residues from farmyard manure were treated in a similar way. The manure itself was valued at 20s.0d. per ton in 1946, with residues valued at 10s.0d. after one crop, 5s. 0d. after two crops and 2s. 6d. after three crops. Prior to 1946 the initial value was taken at 10s. 0d. with only 2s. 6d. in residues after the first crop. The changed values introduced in 1946 were considered necessary in order to bring both the value placed on the manure and the value of the residue into a better relationship to the known facts.

Many crops improve the fertility or cleanliness of the land. Root crops, and in particular potatoes, provide an opportunity for the elimination of annual weeds. Leguminous crops increase the nitrogen content of the soil. In order to make allowance for such items a charge or credit has been introduced into the costs under the heading of "Cultural Residues." The basic allowances are tabulated in table 51. In the crop costs they were varied in accordance with the actual circumstances.

TABLE 51.
FACTORS USED IN ALLOCATING CULTURAL RESIDUES AND
MANURIAL RESIDUES INSEPARABLE FROM THE CROP.

Crop.	Residue per Acre.		
	1932-3	1942-5	1946
Cereals....	nil	nil	nil
Peas and Beans	20s. 0d.	25s. 0d.	20s. 0d.
Seeds: grazed	35s. 0d.	40s. 0d.	up to 60s. 0d.
mown	15s. 0d.	20s. 0d.	30s. 0d.
Grass: pasture	25s. 0d.	x	x
meadow	15s. 0d.	x	x
Roots: carted	15s. 0d.	30s. 0d.	40s. 0d.
folded	55s. 0d.	70s. 0d.	x
ploughed in	30s. 0d.	x	x
Sugar Beet: tops folded	35s. 0d.	50s. 0d.	x
tops carted	15s. 0d.	30s. 0d.	x
tops ploughed in	25s. 0d.	25s. 0d.	x
Cabbage and Greens	15s. 0d.	x	x
Potatoes	20s. 0d.	40s. 0d.	up to 60s. 0d.

x—No cases in these years.

Bare fallow costs were spread over the crops grown in the following three years in the proportions one half: one third: one sixth.

Straw has been charged in the potato costs at 50s. 0d. per ton in 1946, 30s. 0d. in 1944, and at 7d. per ton of ware in the 1932/3 summaries. No charge has been made for thatching straw, pegs or string in the wheat and barley costs.

No charge has been made for depreciation or repair of implements other than for tractors except that in 1946 the costs of potatoes included a charge to cover the cost of power supply and depreciation of harvesting equipment. The main items under that heading are spinners, riddles, sorters, and potato harvesters, and power was only charged here when an independent engine was used as motive force.

Hedging and ditching have been omitted, but drainage rates have been charged. Overheads have been omitted and it should be noted that this item covers not only general management expenses but also a considerable proportion of the labour time of the farmer and his men, particularly in seasons such as 1946 when labour was often idle as a result of the weather conditions.

