NID BYD BYD HEB WYBODAETH

1952/4.

UNIVERSITY COLLEGE OF WALES
ABERYSTWYTH.

DEPARTMENT OF AGRICULTURAL ECONOMICS

SOME ECONOMIC ASPECTS OF PIG-KEEPING IN WALES.

by

A. M. Morgan Rees, M.Sc.

AGRICULTURAL RESEARCH BUILDING, PENGLAIS, ABERYSTWYTH

Price: Two Shillings.

FOREWORD.

Pig producers have experienced a rather difficult time since the outbreak of war, owing to the limited supplies of feeding stuffs. The difficulty of obtaining purchased foods, the restrictions reserving certain home-grown crops for human consumption and the priority given to the feeding of certain classes of livestock all had the inevitable effect of reducing the number of pigs after 1939. Not only did the pig population fall, but the shortage of pig meat resulted in emphasis on weight rather than on quality. The deterioration in the quality of the feeding stuffs available, a price structure planned to encourage the marketing of pigs at heavier weights, and the suspension of the grading of bacon pigs were some of the factors responsible for the lower quality standard found in the pigs marketed than had been common in pre-war years.

Many pig breeders who had relied mainly on purchased feeding stuffs went out of business. Other farmers managed to carry on, on a much reduced scale, with unrationed feeding stuffs. Foods such as unmarketable grain and potatoes, by-products from the dairies, household refuse, swill etc., assumed an increasing importance in the feeding of pigs and did at least prevent their drastic reduction on many farms.

Between 1939 and 1947, when numbers were at their lowest level, the pig population fell by 63 per cent in England and Wales together and by 62 per cent in Wales alone. With the object of encouraging breeders to increase the number of pigs and to meet future demands for bacon, conditions regarding supplies of feeding stuffs for pigs were improved in the early part of 1947. The increase in the meal ration in 1947 and the improvements which occurred later in the allocation of feeding stuffs to pigs, the more favourable price for bacon pigs, the pressing need for more home-produced bacon, the assured market for pig meat and the experience gained in the methods of fattening pigs with limited quantities of meal have all been contributing factors in the expansion of pig keeping since 1947. By 1951, the pig population in England and Wales was 84 per cent and in Wales 77 per cent of pre-war.

While the rise in numbers gives encouraging evidence of a widening interest in pig keeping, it is important to bear in mind that the industry cannot be restored to its pre-war position by just increasing the number of pigs. For some years now the emphasis has been placed on quantity and as a result quality has deteriorated. Weight and type have been of secondary importance. The weeding out of unsuitable types will be a slow and difficult process, and with the present shortage of meat supplies it would perhaps not be policy to tighten up grading to such an extent as to result in a set-back to production. Nevertheless, if the industry is to expand, it should be remembered that its competitive strength depends on quality.

Pig recording and litter-testing can do much to raise the standards of pig production in this country by providing a means of measuring the efficiency of the individual breeder, or feeder, or his stock, and thereby assisting to bring the pig population up to a satisfactory level. The National Pig Breeders' Association have already drawn attention to the urgency of the matter by advocating the immediate organisation of official pig recording and litter-testing schemes. The East Anglian Pig Recording Society and other Schemes in Wiltshire and Hertfordshire which operated so successfully before the war, have shown pig recording to be both practicable and valuable; while litter-testing has played an important part in breed improvement in Denmark and is in no small measure responsible for the high level of efficiency reached in the Danish pig industry.

While the breeding of a suitable type is essential to profitable pig production, equally important is the system of feeding and the nature of the foods used. It is true that conditions have improved regarding supplies of purchased concentrates for pigs; but pig producers will have to continue to rely to a large extent on the use of home-grown foods for feeding, and there will still be need for adapting production as far as possible to the policy of self-sufficiency. Furthermore, in applying this policy of self-sufficiency to pigs, great care must be taken to ensure that this is done by methods which will not result in any material loss of quality. Even with pigs of a good type, the use of unsuitable foods or the feeding of an excessive proportion of any food will only result in the production of carcases of poor quality. Results, however, have shown that good quality bacon can be produced by carefully supplementing meals with bulkier foods, and the substitution of fodder beet and sugar beet for cereals in the feeding of pigs in Denmark has proved very satisfactory as regards both production efficiency and carcase quality.

Since foods constitute about 70-80 per cent of the cost of producing a pig, efficiency in feeding is of vital importance; but it must be realised that, no matter how efficient the feeding may be, it will not by itself produce the satisfactory results required unless careful attention is also given to details of management. Exercise, warmth, sunshine, proper housing, control of disease and efficient pig-men are also necessary in order to obtain the best results. Mismanagement by the breeder or feeder, unsuitable stock or unsuitable conditions under which he operates can only result in poor returns.

In view of the uncertain outlook regarding supplies of feeding stuffs it does seem that, in the building up of pig production, the greatest opportunity lies in the development of the pig enterprise in association with the general farm. With the expansion in arable cropping, the place of the pig in the farming economy is more important today than in pre-war years, and more pigs in association with the general farm mean a better balanced and more productive agriculture.

With the world shortage of meat, and the tendency for its consumption to increase, the present indications are that there will be an unsatisfied demand for pig-meat for some years to come; but the profit from pig keeping will depend to a large degree on how efficiently producers run their enterprise. The investigation carried out by Mr. A. M. Morgan Rees, M.Sc. into the economics of pig-keeping on some Welsh farms during 1950-51 shows the wide variation which exists in technical efficiency from farm to farm; and, while the sample covers only a small number of producers, the results nevertheless provide both financial and physical data which can be of some value to pig-keepers.

The Department of Agricultural Economics, University College of Wales, Aberystwyth acknowledges with thanks the assistance given by the pig-keepers whose records form some of the raw material of this report. Their ready co-operation and patience in dealing with much detail was greatly appreciated. It is hoped that more pig-keepers in Wales will take advantage of the Pig Costings Recording Scheme organised by this Department, and so enable us to make further analysis of certain systems of management.

J. Pryse Howell.

Assistant Advisor in Agricultural Economics.

September, 1952.

SOME ECONOMIC ASPECTS OF PIG-KEEPING IN WALES.

PART I - THE ECONOMIC BACKGROUND.

United Kingdom Meat Supplies.*

Before the War, Britain imported approximately 52.5 per cent of her total meat supply of 2,546 thousand tons. 49.1 per cent of our beef and veal, 61.9 per cent of our mutton and lamb, and 50.9 per cent of our pork, bacon and ham were imported. By 1950, our total meat supply had shrunk to 2,058 thousand tons, which represented a decrease of 19.2 per cent on the pre-war position. Imports had decreased by 26.5 per cent, while home-killed supplies had decreased by only 11.1 per cent. As a result, the pre-war position had been reversed and we were now producing 52.3 per cent and importing 47.7 per cent of our total meat supplies. In the case of beef and veal, imports now represented only 34.0 per cent of total supplies, while 72.4 per cent of our supplies of mutton and lamb and 47.6 per cent of our supplies of pork, bacon and ham were also imported.

Table 1.

United Kingdom Meat Supplies.
(Thousand Tons.)

	1938.			1950.		
	Home-Killed Supply.	Net Imports.	Total.	Home-Killed Supply.	Net Imports.	Total.
Beef and Veal	605	585	1,190	637	329	966
Mutton and Lamb	211	343	554	149	391	540
Pork, Bacon & Ham	393	409	802	289	263	552
Total	1,209	1,337	2,546	1,075	983	2,058

Since the launching of the Agricultural Expansion Programme in 1947 there has been a substantial increase in home production of pig-meat. This applies both to the production of pork and to that of bacon and ham. The general agricultural policy decided at that time was to switch over from the production of crops for direct human consumption to the production of livestock and livestock products, particularly pigs and poultry. Emphasis was thus placed on dollar-saving products, but any such expansion was bound to depend very largely on the greater availability of imported cereal feedingstuffs combined with a higher degree of self-sufficiency than was the practice in pre-war farming. The target set in the case of pigmeat production was a figure of 92 per cent of the pre-war output to be attained by 1952-53.

In pre-war days nearly half of the home production of pigmeat was destined for the pork market, but during and since the war a very large proportion of home-produced supplies has been directed to the bacon factories. By 1947, only one-seventh of the total pigmeat production of the United Kingdom went for pork. Home production of pork had been reduced to 8 per cent of the pre-war figure, while the production of bacon and hams had fallen only to 46 per cent. From 1947 onwards the home production both of pork and of bacon and ham has shown a steady increase. By 1950, home production of bacon and ham had increased to such an extent that it now slightly exceeded production in 1938. On the other hand, despite a large increase in production only 36 per cent of the pre-war quantity of pork was being produced.

The United Kingdom is the chief world importer of bacon and ham and, apart from Germany, is also the chief importer of pork. Imports of bacon and ham into the United Kingdom in pre-war days represented approximately two-thirds of the total supply, and the chief exporting countries in order of importance were Denmark and Canada. In the case of pork, pre-war imports represented only just over one-fifth of the total supply. Our chief sources of pork supply were

* Statistical data in this section are derived from "Meat". Commonwealth Economic Committee. H.M.S.O. 1951.

New Zealand, Australia and Argentina. During the war years, the United Kingdom was cut off from European sources of supply of pigmeat; but a considerable increase in imports of bacon and ham from Canada and the United States eased the situation. Despite the fact that supplies of pork from Australasia were reduced, the total imports of pork were increased owing to increased imports from the United States and Argentina. Since 1945 imports of bacon from Canada have decreased enormously and they now stand below the pre-war figure. Similarly, imports of bacon from the United States ceased after 1946. As a result imports of bacon and ham were at a very low level for the four years 1946-49. From 1945 onwards, however, Danish supplies have been available once more and in 1950 these were only 15 per cent less than in 1938. The Danish pig population is now greater than before the war. In the case of pork, imports from the United States have now ceased while those from Argentina are on a much reduced scale. Supplies from Australasia are also still well below the pre-war level, with the result that our total pork imports are now approximately half of the 1938 figure.

Taking into account both home-production and imports, the overall position was that the supply of bacon and ham available in the United Kingdom in 1950 was only 69 per cent of the pre-war quantity, while, in the case of pork, it was only 39 per cent. The consumption per head of pigmeat over a series of years is shown in Appendix A, Table 1, while the supply position in respect of home-produced and imported pig meat from 1938 onwards is given in Appendix A, Table 2. The important part played by self suppliers in relation to the total number of pigs marketed is sometimes underestimated. Between 1941 and 1951, self-supplier marketings as a percentage of the total number of pigs marketed in England and Wales varied between 47 and 10 per cent. Although corresponding figures are not available for Wales by itself, it is probable that the proportion was even higher in the Principality. (see Appendix A, Table 3.)

Changes in Pig Population: the Influence of Animal Feedingstuffs Rationing on Pig Numbers.

The pig enterprise can be regarded as the least stable section of the livestock industry. This instability is determined by the rapidity of turnover within the enterprise and the ease with which output can adapt itself to market conditions of supply and demand. This characteristic of rapid movements into and out of pig-keeping reflects itself in the changes in the number of pigs kept on agricultural holdings as recorded in the Agricultural Returns (see Appendix A, Table 4.)

In Great Britain as a whole, apart from regular cyclical fluctuations, movement in pig numbers was not particularly rapid prior to the First World War. Then, after a period of wartime reduction, pig numbers soon recovered and, with the impetus given to the industry by the introduction of the Pigs Marketing Scheme in 1933, rapidly increased. The beginning of the Second World War in 1939 saw the end of the co-operative marketing scheme and the emergence of the Ministry of Food as the buyer of all pigs sold for slaughter, except that special arrangements were made for slaughter by self-suppliers for domestic consumption. Early in the War, farmers were advised to plan for a reduction in the scale of pig-keeping for, although the pig is a relatively efficient converter of feedingstuffs into meat, it is at the same time in direct competition with the human population for its food requirements. Government policy was thus directed to the discouragement of any increase in pig-keeping and to the maintenance of a reduced pig population, the size of which would be determined by the availability of feedingstuffs supplies. The methods by which the objectives of this policy were attained were the use of the price mechanism and the scale of rations allocated for the use of pig-keepers.

With the introduction of animal feedingstuffs rationing in February, 1941, there was a drastic fall in the number of pigs. To begin with, rations were allocated to farms to allow for feeding one-third of the basic pig numbers on hand on June 4th, 1939 (or alternatively on December 4th, 1940). Quite soon after the commencement of the rationing scheme the proportion of the pre-war basic number on each holding which was to be provided for was reduced from one-third to one-sixth. October, 1941, saw the introduction of an acreage deduction which reduced the basic pig number by a figure representing half the acreage of the holding (excluding rough grazings). A further reduction in the scale of rationing took place in the autumn of 1942 and at this, its lowest point, the ration provided for only one-eighth of datum pre-war numbers, less an acreage deduction based on the assumption that for each 8 acres of holding sufficient home-grown food could be provided for one pig. Supplementary ration allowances were issued for pedigree stock and for premium boars, while a "Farrowing Sow Allowance" was introduced in 1942. Originally, the "Farrowing Sow Allowance" was only at the rate of 1½ cwt. for each breeding sow declared by the farmer as about to farrow and only then up to 25 per cent of the number of sows on the holding in June, 1939. However, in the summer of 1943, in order to try to arrest the continued decline in pig breeding, the allowance was doubled, and later, in 1944, increased to 6 cwt. The basic ration remained unchanged from the autumn of 1942 until the end of 1944; yet, despite the very drastic cuts in feedingstuffs made available to the pig population, pig numbers did not show a corresponding fall. With the use of home-grown foods and of swill they were maintained at slightly under half the pre-war figure.

The basic ration for pigs was increased slightly as from January 1st, 1945. It was now calculated on the basis of one-sixth of the June, 1939, numbers less one pig per 12 acres. Again, some improvement in the rationing situation was foreshadowed in a Ministry Press Notice issued in April, 1945. It was now considered practicable to make some improvements in the scale of rationed feedingstuffs for pigs as from June of that year. It was hoped that more sows and gilts would be put to the boar and that breeders would revise their breeding programmes in order to increase the supply of home-produced pig-meat from the early part of 1946 onwards. Accordingly, the acreage deduction from the ration allowance was eliminated, and for the summer of 1945 rations were calculated on the basis of one-fifth of pre-war numbers. For the winter rationing period of 1945-46, the ration was increased to cover one quarter of pre-war pig numbers, but this slight increase in feedingstuffs supplies was not sufficient to check the downward trend of the pig population. A Ministerial announcement in February, 1946, stated that deteriorations in feedingstuffs supplies again necessitated cuts in the rations for pigs. In May, 1946, they were cut to a point only sufficient for one-sixth of pre-war pig numbers; this was later cut to sufficient for only one-twelfth; while in October, 1946, the war-time acreage deduction was re-imposed, the proportion was changed to one-eighth and the allowance for farrowing sows was reduced from 6 cwt. to 5 cwt. These reductions in the scale of pig rations had an immediate effect on the number of sows being kept for breeding, while the restoration of the farrowing allowance to 6 cwt. on January 1st, 1947, did nothing to check the decline.

However, with the launching of the Agricultural Expansion Programme in 1947 and the promise of an increase in the supply of feedingstuffs, breeders were again encouraged to increase numbers in order to meet future demands. The hoped-for increase in the pig ration materialised on May 1st, 1947, when the farrowing allowance went up to 8 cwt, and when the basic ration was raised to 1 cwt. per pig per month for one-sixth of pre-war numbers, subject to a deduction of 1 pig for each 16 acres of holding. A further increase in the basic ration took place in the autumn of 1947, whereby the proportion of pigs covered was raised to one-fifth of registered numbers, less a deduction of 1 pig for each 64 acres of the holding. These changes had an immediate effect on the pig industry and within a year there had been an astonishing increase of over 50 per cent in the number of sows kept for breeding. By the summer of 1948, however, supplies of store pigs had more than caught up with demand, and the rapid increase in breeding was halted as a result of the fall in store pig prices.

In October, 1948, an added incentive was given to pig producers, particularly to those in arable areas, by the granting of permission to growers to retain up to 20 per cent of their millable wheat and barley of the 1948 crop. In addition, a new rationing scheme was started in the same month as an alternative to the basic ration scheme, the idea being to provide approximately half the feed requirements for a moderate number of pigs on each size of holding. Under the new or extended scheme, rations were allowed for not more than a specified number of pigs according to the acreage of crops and grass on the holding. These rations were to represent, over the year as a whole, about half the food required to maintain the specified number of stock, while the farmer was expected to provide the remainder of the food requirements from his own resources. No supplementary rations for pedigree stock were allowed under the new scheme, but pig keepers could apply for a farrowing allowance for their sows. At the outset of the new scheme the farrowing allowance was at the rate of 6 cwt., but in the following summer this was raised to 8 cwt. to bring it into line with the rate applicable under the basic ration scheme. January, 1949, saw the introduction of an incentive to the feeding side of the industry. This was the bonus rations scheme, which provided additional rations against deliveries of pigmeat to bacon factories, licensed slaughtermen and other purchasers approved by the Ministry of Food. Initially, the bonus was at the rate of 1 cwt. of feed per 8 score dead weight sold through these approved channels during the preceding bonus period. Producers responded quickly to the availability of these additional supplies of feed and pig numbers continued their upward movement. This was further accelerated in the summer of 1949 by the reopening of the new or extended scheme for rationing pig-keepers and by the Minister of Agriculture's announcement in May of that year that rations would be increased still further. In a Ministry of Agriculture Press Notice of May 19th, 1949, it was stated that:-

> "Recognising that pigs afford the quickest means of increasing the home output of meat, and after reviewing the supply prospects for the next twelve months, the Government have decided to increase by about 50 per cent the amount of rationed feedingstuffs to be distributed and used for commercial pig production. This is designed to stimulate the breeding and fattening of pigs for both the bacon and pork markets."

The Farrowing Sow Allowance was increased from 8 to 9 cwt. as from July 1st. 1949, while the bonus ration in respect of pigmeat sold to the Ministry of Food during the preceding four months was trebled with the period starting September 1st. It was now fixed at the rate of 3 cwt. per 8 score deadweight of pigmeat sold. In addition, rations under the basic number scheme were increased by about one-eighth. Basic rations were now given for up to 22½ per cent of the basic registered pig numbers, at the rate of 1 cwt. per pig per month, after making a deduction of 1 cwt. for every 64 acres of the holding. Under the extended scheme, an increase of approximately 50 per cent in the specified numbers of pigs related to the size of holding which were eligible for rations also took place. As a result, on holdings of over 5 acres in size the numbers of pigs for which half rations could be obtained were increased considerably. Owing to an increase in available supplies of coarse grain from non-dollar sources, it was possible to make a special non-recurrent supplementary issue of extra rations of cereal feedingstuffs for the period September-December 1949. This supplementary issue was non-permanent and amounted to 50 per cent of the rations already issued under the basic and extended schemes.

Additional increases in the level of rations for pigs were announced to take effect from May 1st. 1950. These increases were not the result of diverting additional supplies of feedingstuffs to the pig population; they were increased rates of rations within the existing supply of feedingstuffs, and were made possible because a proportion of the coupons issued had not been used. The basic issue was increased to 1 cwt. per pig per month for one-third of pre-war numbers, subject to the usual deduction of 1 pig for every 64 acres. At the same time, the extended scheme was brought more into line with the basic scheme. The increased rations allowed under the extended scheme reduced self-sufficiency to 25 per cent in the lower acreage groups and to 33⅓ per cent in the two highest acreage groups. The rate of allowance for farrowing sows was also increased from 8 cwt. to 10 cwt. In addition, the bonus ration on pigmeat deliveries was increased to 4 cwt. per 8 score dead weight of pigmeat delivered. From the summer of 1950, the level of rationing remained basically unchanged until the end of 1951. For the rationing period January-April 1952, however, the farrowing allowance was reduced to 9 cwt., while the bonus ration on pigmeat deliveries was also reduced from 4 cwt. to 3 cwt. These cuts arose largely because the increase in pig numbers was not accompanied by any corresponding increase in the total quantity of feed.

Table 2.

Changes in Pig Numbers, 1939-1951. ('000's.)

Year (June).	Wales & Monmouth.	England.	Scotland.	Great Britain.	Northern Ireland.	United Kingdom.
1939	208	3,307	252	3,767	627	4,394
1940	204	3,156	271	3,631	475	4,106
1941	152	1,837	218	2,207	351	2,558
1942	145	1,534	193	1,872	271	2,143
1943	121	1,260	190	1,571	258	1,829
1944	110	1,353	167	1,630	237	1,867
1945	133	1,599	171	1,903	249	2,152
1946	103	1,371	169	1,643	312	1,955
1947	79	1,067	148	1,294	334	1,628
1948	124	1,508	184	1,816	335	2,151
1949	133	1,999	232	2,364	459	2,823
1950	115	2,097	251	2,463	523	2,986
1951	161	2,806	339	3,306	585	3,891

Regional changes in the pig population of the United Kingdom from 1939 onwards are shown in Table 2. Except in Scotland, pig numbers in June 1951 were still below the pre-war level, but great strides forward had been made in all parts of the United Kingdom since 1947 when pig numbers were at their lowest level. The Welsh pig population stood at 161,000 in June 1951, while that of the United Kingdom had reached the 3,891,000 mark. The populations were, respectively, 77 per cent and 89 per cent of pre-war. The nature of recent changes is illustrated by Table 3.

Table 3.

Indices of Pig Numbers (June 1939 = 100.)

	June, 1939.	June, 1947.	June, 1951.
Wales and Monmouth	100	38	77
England	100	32	85
Scotland	100	59	135
Great Britain	100	34	88
Northern Ireland	100	53	93
United Kingdom	100	37	89

The quarterly returns since June, 1951, have shown a continuance of the upward trend in pig numbers. By December, 1951, both the Welsh and the United Kingdom figures for total pigs had exceeded the pre-war position. The total number of pigs in Wales then stood at 224,000, which represented an 8 per cent increase on June, 1939. In the case of the United Kingdom as a whole, the figure stood at 4,894,000, which was 11 per cent higher than pre-war. Despite the fact that the number of sows kept for breeding has increased considerably, some check to this increase can now be expected, as the recent low level of weaner prices is an indication that the supply of weaners is now outstripping the demand. The slight decline in the number of sows and gilts for breeding, which occurred between September and December 1951, is further evidence of this likelihood, and the more recent figure for March 1952 show a continuance of the trend.

Appendix A, Tables 5 and 6 show the remarkably steady increase in the pig population of the United Kingdom, on a quarterly basis, since the autumn of 1947, when increased supplies of feedingstuffs were made available to pig-keepers. This increase in numbers has applied equally to sows kept for breeding and to the total for all pigs, but in the case of the former there was a considerable slowing-down in the rate of increase during the autumn of 1948 and during the latter half of 1949. At both times this slowing-down can be attributed to the fact that the supply of weaners outstripped the demand from the fattening section of the industry. During the years, June 1947 to June 1951, the total number of pigs on agricultural holdings in the United Kingdom more than doubled, the actual increase amounting to 139 per cent. The same upward trend also applied to the pig population of Wales, although the percentage increase was not as great in the case of the Principality (see Appendix A, Tables 7 and 8.) Between June 1947 and June 1951, the percentage increase in the Welsh pig population amounted to 104 per cent.

From the figures available, it is apparent that the policy of keeping "a few pigs on every farm" has, in practice attained a fair measure of success. The two main methods of implementing this policy have been, firstly, to increase the rations available for pig-keepers and, secondly, to make use of the price mechanism. Table 4 (and also Appendix A, Table 9) shows changes in agricultural price indices during the period 1939-1951, and also the relationship of the index of bacon pig prices to that of all agricultural prices.

Table 4.

Changes in Agricultural Price Indices 1927-29 = 100.)

	Index. Bacon Pigs.	Index. All Produce	Bacon Pigs Price Index as Per Cent of Index of All Agricultural Produce.
Average 1939-1946	143	152	94
1947	209	$212\frac{1}{2}$	98
1948	230	219	105
1949	266	229	116
1950	303	$237\frac{1}{2}$	128
1951	338	$260\frac{1}{2}$	130

From 1939 to 1947 inclusive, the price index of bacon pigs was consistently below that of all agricultural produce. It stood roughly at a level of 94 per cent of the latter. With the launching of the Agricultural Expansion Programme in 1947, however, there was a change in price emphasis and the disparity narrowed. For each of the five years, 1947 to 1951, the price of bacon pigs increased proportionately to a greater extent than the index of all agricultural prices. By 1951, the price index of bacon pigs was 30 per cent above that of all agricultural produce. Encouragement was given to pig production by means of the price mechanism; but it has to be borne in mind that increases in certain items of cost - for example, the rise in the price of feedingstuffs - have had a greater bearing on this form of production than on certain other farm enterprises. The prices fixed for bacon pigs at the different price reviews are shown in Appendix C.

Pig-Keeping in Wales.

Pig-keeping in Britain has depended very largely on purchased foods for its maintenance and it has relied to only a small extent on home-grown feeds. Again, it is a farm enterprise of an intensive nature that has made few demands on land or on topographical situation for its location. Consequently, a wide scatter of pigs is found throughout the British Isles. Although pig-keeping is widespread, certain localities are particularly associated with this form of enterprise. These are areas where pigs have fitted in as consumers of by-products of other farm enterprises. Examples of this are dairying areas where whey and skim milk are available and arable areas where potatoes and feed grain are plentiful. Local concentrations of pigs are also noticeable in suburban areas where supplies of swill and household waste are obtainable.

The density of pig population, measured on the basis of the number of pigs per 1,000 acres of crops and grass, is considerably less in Wales than in England, Great Britain, Northern Ireland or the United Kingdom as a whole. This is true of pre-war conditions as well as those prevailing at the present time. In comparison with Scotland, however, Wales had a higher density of pig population for a long period of years up to the Second World War. Today the position has been reversed, and Scotland now has a slightly higher density of pig population per 1,000 acres of crops and grass than Wales. In June, 1951, the density of stocking in Wales was 63 pigs per 1,000 acres of crops and grass, while the corresponding figures for Scotland and England were 77 and 128. Northern Ireland at this date was the most intensive pig-producing region of the United Kingdom, with the very high figure of 257 pigs per 1,000 acres of crops and grass. It is interesting to note that in 1951 both Northern Ireland and Scotland had regained their pre-war density of stocking with pigs (see Appendix A, Table 10.)

Wales is essentially a pastoral country and her farmers depend to a very large degree on sales of livestock and livestock products for a livelihood. Despite the dependence on livestock, however, pigs have never been a particularly important feature of Welsh farming. On the majority of Welsh farms the pig has been valued more highly for home-killing and domestic consumption in the farmhouse than as a commercial sales product. At the same time, on certain Welsh farms pig-keeping has developed to the position of being quite an important enterprise, contributing a substantial share to the total farm income. Again, an examination of the figures relating to the density of stocking with pigs reveals that certain Welsh counties are very much more highly stocked than others. In June, 1951, the county with the highest density of stocking was Flintshire, with a figure of 157 pigs per 1,000 acres of crops and grass. This was the only Welsh county more intensively stocked with pigs than the average for Great Britain as a whole. In the case of Flint, the pig enterprise has been integrated very closely with dairying; and, particularly in the Maelor division of the county, reliance has been placed on the feeding of whey as a by-product of farmhouse-cheesemaking. On the other hand, in another dairying county, Carmarthen, where there has been no tradition of farmhouse-cheesemaking and where milk production has been for the liquid market, the importance of pigs in the farm economy is small and their density per 1,000 acres of crops and grass is only 29. There has been a general tendency for pigs to decrease in those Welsh counties where milk-selling has been on the increase. Counties other than Flint with a pig density above the national average for Wales were Glamorgan, Denbigh, Anglesey, Montgomery, Caernarvon and Monmouth.

The size of holding has very little influence on the number of pigs kept on the individual farm. As the enterprise is of an intensive nature, large herds are as likely to be found on small farms as on large ones, and consequently some idea of the distribution of the pig population on a farm-to-farm basis can be obtained by examining the relationship of the number of agricultural holdings to pig numbers.

Table 5.

Number of Pigs per Agricultural Holding, 1951*.

	Total Number All Pigs.	Breeding Pigs.	Other Pigs (excluding Boars.)
Wales	2.9	0.5	2.4
England	8.7	1.3	7.3
Scotland	4.5	0.6	3.9
Great Britain	7.3	1.1	6.1

* Agricultural Holdings exceeding 1 acre in size.

In 1951 there were 2.9 pigs on each Welsh holding of over 1 acre in size, while the corresponding figure for breeding sows and gilts was only 0.5.

The figures for England were 8.7 and 1.3. Measured again on this basis, Welsh farms were not as heavily stocked with pigs as English farms. The corresponding figures for the individual Welsh counties are shown in Appendix A, Table 11.

An examination of the Agricultural Returns reveals certain differences in the composition of the national pig herd as between Wales, England, Scotland and Northern Ireland. The differences are analysed in Table 6.

Table 6.

Composition of the Pig Herd, June 1951.

	Breeding Pigs as % of Total Pigs.	Total Other Pigs (Excluding Boars) as % of Total Pigs.	Number of Breeding Pigs per Boar	Total Number of Pigs per Boar.
Wales	16.5	82.9	29	171
England	15.1	84.1	18	116
Scotland	13.9	85.0	16	112
Great Britain	15.0	84.2	18	117
Northern Ireland	10.8	88.9	63	583
United Kingdom	14.4	84.9	19	133

Except in Northern Ireland, where the proportion was slightly less, sows and gilts kept for breeding represented approximately from one-sixth to one-seventh of the total number of pigs. On the other hand, there was more variation in the number of breeding pigs per boar. In Northern Ireland there was the very high figure of 63 breeding pigs per boar while the corresponding figure for Wales was 29. Breeders in Northern Ireland and in Wales relied more on the use of communal and premium boars than their counterparts in England. Detailed figures relating to the composition of the pig herd for each of the Welsh counties are contained in Appendix A, Table 12.

Information relating to pig breeds in Wales, as elsewhere, is limited. If we turn to the boar licensing figures, however, we find that some information relating to the breeds of boars on Welsh farms is available. Nevertheless, in interpreting these figures a certain amount of caution must be exercised, as the influence of crossing may cause them to bear little relation to the proportion of pigs of the different breeds kept in Wales. Again, the boar licensing figures give the number of licences for boars issued each year and not the total number of boars in existence. As they do not need to be renewed annually, the licences issued in respect of boars of different breeds tend to represent current trends in breed popularity rather than hard and fast information relating to the composition of the boar population. The number of boar licences issued in Wales is shown in Table 7, while similar information for Great Britain is given in Appendix A, Table 13.

The predominant pig breed in Wales, as elsewhere in Britain, on the basis of boars licensed, is the Large White. The only other breeds for which boar licences are taken out in any number are the Wessex Saddleback and the Welsh. A few Large Black and Essex boars are also licensed, but other breeds are barely represented. During the last few years some decline has taken place in the relative importance of the Large White breed in comparison with boars of the Welsh and Wessex Saddleback breeds licensed in Wales. In 1946-47, boars of the Large White breed represented 78.4 per cent of all boars licensed in the Principality, whereas by 1950-51 the proportion had declined to 68.9 per cent. During the same period, boars of the Wessex Saddleback breed had increased in importance from 3.2 per cent to 13.3 per cent of the total, while those of the Welsh breed had increased from 7.2 per cent to 10.5 per cent. In certain counties the importance of the Welsh and Wessex Saddleback breeds is considerably greater than in others. For instance, for the year 1950-51, licences issued for Wessex Saddleback boars represented 30.0 per cent in Pembroke, 37.1 per cent in Montgomery, and 48.1 per cent in Cardigan of the

Table 7.

Improvement of Livestock Scheme. Number of Boar Licences Issued in Wales and Monmouthshire, 1950-51*.

County.	Large White	Wessex Saddle-back.	Welsh.	Large Black.	Essex.	Other Breeds.	Total.
Anglesey	21	-	2	1	-	-	24
Brecon	36	1	-	-	1	-	38
Caernarvon	24	1	8	3	-	-	36
Cardigan	4	13	10	-	-	-	27
Carmarthen	8	1	13	-	-	-	22
Denbigh	79	10	-	-	-	-	89
Flint	32	5	3	2	9	3	54
Glamorgan	46	8	3	5	-	2	64
Merioneth	2	-	3	-	-	-	5
Monmouth	42	1	5	1	-	1	50
Montgomery	13	13	-	5	4	-	35
Pembroke	23	12	5	-	-	-	40
Radnor	9	-	-	-	-	-	9
Wales	339	65	52	17	14	6	493

* Figures supplied by Ministry of Agriculture & Fisheries, Welsh Department.

total of all boar licences issued in these particular counties. Similarly, the licences for boars of the Welsh breed represented 22.2 per cent in Caernarvon, 37.0 per cent in Cardigan, 59.0 per cent in Carmarthen and 60.0 per cent in Merioneth of the total of all boars licensed. Although the native Welsh breed is still not very heavily represented in numbers, there has been a considerable amount of interest shown in it recently and an expansion in numbers is forecast.

Figures relating to the number of premium boars in Wales again reveal the importance of the Large White breed. In 1950-51, out of a total of 220 premium boars in Wales, 87.7 per cent were of the Large White breed, while 7.3 per cent were Welsh boars. Although no direct comparison is possible between the number of boars being used for service in Wales, as stated in the June Agricultural Returns, and the number of premium boars, it is interesting to note that in 1950-51 premium boars accounted for nearly 24 per cent of all boars. The large proportion of premium boars in Wales indicates the extent to which breeding is done by communal boars. Consequently, livestock improvement of pig-stocks in the Principality could be carried out far more rapidly than where individual herd sires are used.

PART II - AN INVESTIGATION INTO THE ECONOMICS OF PIG-KEEPING ON SOME WELSH FARMS, 1950-51.

Introduction.

With the increased interest shown in pig-keeping during recent years and the increasing numbers kept on the general farm, there has arisen a need for more information on the economics of pig-keeping. To meet this need, a Pig Costings Recording Scheme was initiated in May 1950, to cover farms situated in Wales. The scheme was designed to provide information which would assist the individual farmers who were co-operating in the scheme in the management of their pig enterprises and, in addition, to provide general information which might be of assistance and interest to other pig keepers or potential pig-keepers. Data were collected from the co-operating farms on the basis of either weekly or monthly recordings, and an attempt was made to collect as much information as possible of a physical nature as well as all the necessary financial details.

This report, which is the first one dealing with the results of the Scheme, relates to the records received from a sample of 21 herds costed for varying periods between May 1st, 1950, and September 30th, 1951. Twelve of the 21 herds were costed for a full year, while the remaining 9 were costed for periods of between 4 and 9 months. Some of the co-operators had entered the Scheme at a later date than others and had consequently been able to complete only an initial six months of recording by the time the records for the groups were analysed. Again, a small number of farmers left the Scheme before the completion of a full year's costings, owing to the fact that they had either moved elsewhere or had given up pig-keeping. In two instances, costs were completed for two bunches of stores from the time of their purchase until they were sold as baconers.

The herds covered by this investigation were located in 8 out of the 13 Welsh counties, and their systems of management and herd size varied considerably. The type of enterprise included herds engaged solely either in rearing or in feeding as well as those where rearing and feeding were combined. Again, the type of producer varied from the specialist, with his building designed for pig-keeping, to the farmer who was attempting to add a pig enterprise to his general farming system. It must, therefore, be stressed that a wide range of conditions and of types of pig enterprise are covered by the results presented in this report, and that these results do not necessarily typify conditions in the industry as a whole. In addition, the sample of farms covered is a relatively small one. A certain amount of caution must, therefore, be exercised in interpreting results in so far as they apply to pig-keepers in general.

A note on the costings method adopted and some details regarding the procedure used in the course of this investigation are contained in Appendix D. Some of the terms used in this study are also defined there.

General Financial Results.

The aggregate financial results for the 21 herds costed for varying periods during the seventeen months ended September 30th, 1951, are shown in Appendix B, Table 1.

The aggregate value of the gross pig output on the 21 farms was £26,217; aggregate costs came to £15,214; while the aggregate profit amounted to £11,003. This figure for profit represents a rate of £42 for every £100 of gross pig output. A simplified version of Appendix B, Table 1 is given below:-

	£.
Sales of Pigs, together with any other Credits (e.g. Service Fees)	25,490
Valuation difference	+ 6,262
	31,752
Purchases of Pigs	- 5,535
	26,217
Costs incurred in producing Gross Pig Output	- 15,214
Profit	+ 11,003

Wide variations in the amount and rate of profit occurred from farm to farm; but, irrespective of both the size of herd and the system of management, none of the 21 herds showed a loss. The highest individual rate of profit was £59 per £100 of gross pig output, while the lowest was £7. Table 8 shows the distribution of costs and profit for the three most profitable, the three least profitable and for all 21 herds. Individual farm results are shown in Appendix B, Table 2.

Of the three most profitable herds, one was a small pedigree Wessex Saddleback herd which specialised in the sale of breeding stock and weaners. Another was a small herd consisting of only two breeding sows, which also specialised in the sale of weaners. The third herd, with an average number of sows of just under 11, sold breeding stock, weaners and baconers.

Table 8.

Distribution of Costs and Profit per £100 Gross Pig Output.

Gross Pig Output:-	Average 21 Herds.	3 Most Profitable Herds.	3 Least Profitable Herds.
	£.	£.	£.
Food Costs per £100	45	36	64
Labour " " "	8	5	15
Other " " "	5	4	7
Total " " "	58	45	86
Profit " "	42	55	14
Total	100	100	100

In the case of the three least profitable herds, one was in the process of being built up, but at the same time it succeeded in selling some weaners and baconers. The second was a pedigree Welsh herd which sold a considerable number of breeding stock as well as weaners and baconers. The third herd in this group specialised in the purchase of weaners for fattening.

The range of profits on the 21 farms is shown below:-

Profit per £100 Gross Pig Output.	Number of Herds.
£0 and under £10	1
£10 " " £20	2
£20 " " £30	4
£30 " " £40	4
£40 " " £50	5
£50 " " £60	5
	21

Analysis of Costs.

Table 9 shows the distribution of costs per £100 total expenditure incurred in producing the gross pig output on these 21 farms, while Appendix B, Table 3 shows the distribution of costs on the individual farms.

Table 9.

Distribution of Costs per £100 Expenditure.

	£.	£.
Purchased Meals and Concentrates	62.6	
Home-Grown Meals and Concentrates	2.0	
Total Meals and Concentrates		64.6
Swill	2.5	
Concentrated Swill	2.5	
Whey	4.5	
Skimmed Milk etc.	0.4	
Potatoes	2.1	
Other Roots	0.8	
Total Other Foods		12.8
Total All Foods		77.4
Labour		13.9
Transport	1.6	
Veterinary and Medicine	1.0	
Depreciation on Equipment	1.3	
Rent Charge	2.3	
Miscellaneous Costs	2.5	
Total Other Costs		8.7
Total		100.0

The costs can be examined under the three headings: Food, Labour and 'Other Costs'.

Food. Food was by far the most important single item of cost in pig production and represented nearly $77\frac{1}{2}$ per cent of total expenditure. The bulk of the foods fed consisted of meals and concentrates and these accounted for nearly 84 per cent of total food costs. Although home-grown corn was fed on 10 farms, only one of them fed a larger proportion of home-grown than purchased meals, and in most cases the quantity of home-grown corn fed was very small. Most of the purchased meals consisted of Pig Meals No. 1 or No. 2, but some sow and weaner nuts were also fed as well as a quantity of purchased barley. The average cost of the meal fed was £1.9.7. per cwt. Although 7 farms relied entirely on the feeding of meals and concentrates, in all other cases this was supplemented by the feeding of whey, skimmed or sour milk; by swill-feeding, the swill in some cases being of the concentrated type; or by the feeding of potatoes, mangolds or other roots. In ten cases, the supplementary food consisted of whey, skimmed or sour milk, but the feeding of whey was only of any real importance on five farms. Swill feeding was practised with four herds and for all these it was used to quite a large extent. Potatoes and other roots were fed in small amounts to a large number of herds, but their feeding in any quantity was confined to four. During the period under review fodder beet was fed on only two farms and in only very small quantities in both cases. Quite a number of the farms surveyed had the intention of growing fodder beet for feeding to their pigs in future years.

Labour. Labour costs represented only slightly less than 14 per cent of total costs. In a large number of cases the pigs were managed by family labour and in only two or three instances was a regular pig man employed. Most of the herds were too small to justify the employment of a full-time man and the work involved was normally fitted in between other farm jobs. Pig-keeping was regarded on most farms merely as a subsidiary enterprise and the amount of time devoted to it was small. On the few farms where it was regarded as an important enterprise and where it did contribute a large share towards total farm income, the amount of labour available was often insufficient to meet the need.

'Other Costs'. 'Other Costs' represented less than 9 per cent of total expenditure. Included under this heading are a rent charge levied for use of buildings and for grazing; a charge to cover depreciation on equipment used in connection with the enterprise; veterinary expenses and medicine; any payments for service fees; transport charges other than those in connection with pigs sent to bacon factories, which are already deducted from the price received; and certain other costs of a miscellaneous nature.

Analysis of Purchases.

The cost of pig purchases has already been taken into account in arriving at the gross pig output and consequently it does not represent a charge against direct expenditure. Nevertheless, an examination of the data relating to purchases of pigs in the herds surveyed can be of value (see Table 10.)

Table 10.

Summary of Pig Purchases, 21 Herds.

Class.	Number Bought as % of Total No. Purchased	Value of Purchases as % of Total Purchase Value.	Average Value per Head.	Average Value per Score Liveweight	Average Liveweight Per Head.
	%.	%.	£. s. d	£. s. d	lb.
Boars	3.1	10.1	32.15. 8	-	-
Sows and Gilts	5.1	18.9	37. 8. 9	-	-
Suckers & Weaners	38.9	24.2	6. 5. 4	3. 3.10	39.2
Stores	52.9	46.8	8.17. 9	2. 9.11	71.2
Total	100.0	100.0	10. 1. 4	-	-

Prices paid for incoming stock were remarkably high and reflect the increased demand prevailing as a result of the large expansion in pig numbers. Relatively high prices applied to the purchase of both breeding and to feeding stock. Although the purchase of breeding stock, which was confined to 12 farms, accounted for only just over 8 per cent of the total number of all stock purchased, its value, nevertheless, represented 29 per cent of the value of all purchases. The average price paid for suckers and weaners was £3. 3.10 per score liveweight, while the corresponding figure for stores was £2. 9.11 per score liveweight. On this basis, the purchase of strong stores was a considerably better proposition than the purchase of weaners.

Analysis of Sales.

The marketing of pigs by class is shown in Table 11.

Table 11.

Summary of Pig Sales, 21 Herds.

Class.	Number Sold as % of Total Number marketed.	Value of Sales as % of Total Sales Value.	Average Value Per Head.	Average Value per per Score Liveweight	Average Liveweight Per Head.
	%.	%.	£. s. d	£. s. d	lb.
Boars	1.4	2.7	28. 3. 8	-	-
Sows and Gilts	4.0	8.7	32. 0. 7	-	-
Suckers & Weaners	25.1	11.2	6.12. 4	3. 2. 0	42.7
Stores under 7 score	19.2	11.8	9. 1. 6	2.10.10	71.4
" over 7 "	10.2	11.9	17. 4. 1	2. 2. 1	163.4
Baconers	40.0	53.6	19.14. 9	1.15. 4	223.6
Casualties	0.1	0.1	2.10. 1	-	-
Total	100.0	100.0	14.14. 7	-	-

During the costings period, 40 per cent of all pigs sold were marketed as baconers and their value represented nearly 54 per cent of total sales value. The average net price received for baconers was £19.14. 9 per head, which was equivalent to a price of £1.15. 4 per score liveweight. The average weight at which baconers were sold was 223.6 lb. liveweight, or 171.5 lb. deadweight. Sales of breeding stock were restricted to 11 farms, and on only 5 of these were they of any real importance. Altogether, sales of breeding stock accounted for just over 11 per cent of the value of all sales. Apart from 3 farms where sales consisted entirely of baconers, all farms sold some store stock, but the importance of these sales varied considerably from farm to farm (see Appendix B, Table 4.) On the basis of the price received per score liveweight, there was a progressive decline in the value of stores as their marketing weight increased.

Although not a direct element in sales receipts, certain credits can be taken into account as a constituent of income from pig keeping on the herds covered by this survey. These credits are grants for the keeping of premium boars and boar service fees. Premium boars were kept on 5 out of the 21 farms, while, in addition, service fees were also received on another 7 farms. The largest sum received in respect of service fees was £47. 0. 0 on one farm.

Physical Data.

Analysis of Farrowing Data.

Records are available relating to farrowings on twelve farms over a period of twelve months. Out of a total of 176 farrowings recorded it was found that 40.4 per cent occurred during the four months March-June, 35.3 per cent during the months July-October and 24.3 per cent during the months November-February (see Table 12.)

Table 12.

Distribution of Farrowings by Month.

	Number Farrowing.			Per cent. of Total Farrows.		
	Sows.	Gilts.	Sows & Gilts.	Sows.	Gilts.	Sows & Gilts.
January	8	3	11	8.0	3.9	6.2
February	10	4	14	10.0	5.3	7.9
March	15	7	22	15.0	9.2	12.5
April	11	9	20	11.0	11.8	11.4
May	17	2	19	17.0	2.6	10.8
June	4	6	10	4.0	7.9	5.7
July	8	4	12	8.0	5.3	6.8
August	7	10	17	7.0	13.2	9.7
September	7	13	20	7.0	17.1	11.4
October	2	11	13	2.0	14.5	7.4
November	9	5	14	9.0	6.6	7.9
December	2	2	4	2.0	2.6	2.3
Year	100	76	176	100.0	100.0	100.0

Information relating to litter averages is available for 16 herds, and this provides a guide to the mothering ability of the sow and to the management factor as related to the care of the breeding stock. Altogether, 189 litters were produced in the 16 herds during the period under review and the number of pigs born alive totalled 1,745. There was a wide variation between herds in the number of pigs born alive, in the number of deaths among suckling pigs and in the number of pigs weaned per litter. The average figures were 9.23 pigs born alive, 1.78 pigs died, and 7.45 pigs reared per litter. The range in the number of pigs reared per litter was from 9.5 on one farm to 5.7 on another. Again, there was a difference in the number of pigs born alive per sow-litter and per gilt-litter, the average numbers being 9.7 for sows and 8.5 for gilts. The death-rate among suckling pigs in these 16 herds came to the high figure of 19.3 per cent. Table 13 summarises the data relating to litter averages.

Table 13.

Summary of Litter Averages, 16 Herds.

	All Herds.	2 Best Herds in respect of No. of pigs weaned per litter.	2 Worst Herds in respect of Number of pigs weaned per litter.
Number of Litters	189	37	21
Number of Pigs Born Alive	1,745	364	161
Number of Deaths	336	26	41
Number of Pigs Weaned	1,409	338	120
Number of Pigs Born Alive per Litter	9.23	9.84	7.66
Number of Deaths per Litter	1.78	0.70	1.95
Number of Pigs Weaned per Litter	7.45	9.14	5.71
	%.	%.	%.
Death Rate: Deaths as % of Pigs Born Alive	19.30	7.10	25.50

Another measure of the productivity of breeding herds is the output of pigs per sow per annum, as the number of pigs weaned per sow and gilt in herd is bound to have a direct effect on profits. Again, the intervals between farrowings and the number of litters produced per annum have an important influence on the rate of production per sow. For the 11 herds where these data were available over a period of twelve months (see Table 14), the number of sows and gilts averaged 7.3. The average number of live pigs born per sow and gilt in herd per annum was 12.26, while the number weaned was 10.18. On an average, the number of litters produced per annum was 1.25 per sow and gilt in herd, i.e. 2 litters in a little over 19 months. Thus, the frequency of farrowing was rather low on the costed herds, but this can be partly accounted for by the fact that most of them were in the process of being increased in size and, consequently, there were rather more breeding stock recorded in the herds towards the end of the twelve months' period than were present on the farms for the whole year. As the additions to the breeding stock were generally in the form of in-pig gilts which did not farrow during the costings period, they had the effect of inflating herd numbers without increasing the number of litters or number of pigs weaned. Data relating to the yearly production rates of sows can be valuable, but during any period of expansion or contraction in the size of herds they have to be treated with caution.

Table 14.

Production Rates of Sows and Gilts in Herd, per annum. 11 Herds.

	All Herds.	Best Herd:	Worst Herd:
		In respect of Number of Pigs Weaned per Sow and gilt in Herd per annum.	
Average Number of Sows & Gilts in Herd	7.3	1.38	5.25
Total Number of Litters	100	3	3
Total Number of Pigs Born Alive	971	38	29
Total Number of Pigs Weaned	813	23	25
Average Number of Pigs Born Alive per Sow and Gilt in Herd	12.26	27.54	5.52
Average Number of Pigs Weaned per Sow and Gilt in Herd	10.18	16.67	4.76
Average Number of Litters Produced per Sow and Gilt in Herd	1.25	2.17	0.57
Average Number of Months Required to Produce 2 Litters	19.2	11.1	42.1

Analysis of Mortality.

The incidence of mortality can be an extremely important factor in determining profitability in pig-keeping. Deaths amongst pigs on the costed farms are shown in Table 15.

Table 15.

Deaths and Mortality Rates by Class. 21 Herds.

Class.	Deaths:- No.	Deaths:- %.	Mortality Rate.
			%.
Boars	1	0.25	1.72
Sows and Gilts	9	2.24	2.54
Suckling Pigs	352	87.56	15.42
Weaners and Stores	40	9.95	1.70
All Pigs	402	100.00	11.13

Out of a total of 402 deaths recorded in the 21 herds, 352, or over 87 per cent, were accounted for by deaths of suckling pigs. This gives a pre-weaning death rate, calculated on the basis of the total input of suckling pigs, of 15.42 per cent. The death rate among weaners and stores was, on the other hand, only 1.70 per cent.

So far as pre-weaning mortality was concerned, the cause of death was obtained in 196 cases and these are analysed in Table 16.

Table 16.

Analysis of Pre-Weaning Mortality.

Cause of Death.	Number of Deaths.	Per Cent.
Pneumonia, colds, chills etc.	56	28.6
Overlaid by Sow	54	27.5
Unthrifty or "Bad Doers"	44	22.5
Lack of Milk	18	9.2
Accident	10	5.1
Choking	6	3.1
Sunstroke	3	1.5
Savaged	3	1.5
Other Causes	2	1.0
Total Number Recorded	196	100.0

The three most common of the stated causes of death among suckling pigs were overlying, colds and unthriftiness; between them they accounted for nearly 79 per cent of the total.

Some pre-weaning deaths are inevitable, but it is felt that much could be done to reduce the mortality rate, particularly by the provision of more suitable farrowing quarters and by closer managerial attention. More careful selection of breeding stock with regard to the mothering qualities of the sow and the more rigid culling of poor mothers and of clumsy, over-fat sows would do much to reduce the mortality rate. Again, the provision of more suitable accommodation for farrowing, free from draughts and damp, and fitted with farrowing rails, would also help to lower the mortality rate. Freedom from draughts and damp is particularly important in a high rainfall area such as Wales, and the installation of heating-lamps may help to solve this problem on the more specialist pig-keeping enterprises in the Principality.

Although the death rate among weaners and stores was relatively low and losses in this class of stock accounted for less than 10 per cent of the total for all deaths, nevertheless, the importance of post-weaning mortality must not be under-emphasised. The loss of a single fattening pig after, say, four months of feeding means a considerably greater loss than the death of a few suckling pigs during their first few days. Records of the cause of death among feeding pigs are, again, incomplete, but it was found that the major reasons given were anaemia and unthriftiness. The need to cull unthrifty pigs should be stressed, for not only is there the danger of total loss through death, but there is also the invisible loss incurred by the lengthening of the fattening period and the increased meal consumption resulting from a poor live-weight gain. Again, the presence of one unthrifty pig in a bunch may cause a delay in the dispatch of those pigs to the bacon factory, with the result that the majority of them will be overweight by the time they are finally consigned. In many cases it would pay the herd owner to eliminate all unthrifty pigs at an early age. Although this would increase the mortality rate, it would at the same time result in a more profitable utilisation of available foods.

The Conversion of Feedingstuffs.

The importance of food as an item of cost has already been stressed and it has been pointed out that its cost represents over 77 per cent of the total. Economy in the use of food and efficiency in its conversion to pig meat are consequently very fruitful methods of lowering costs in pig production.

The ratio of input of meal to live-weight output of pig meat will, of course, depend partly on the utilisation of foods other than meal. For instance, the feeding of swill, whey or roots will lower the quantity of meal required to put on 1 lb. of live weight of pig meat. Consequently, it is also useful to take into account the cost of all foods fed per lb. of live-weight gain.

Unfortunately, in the sample of herds studied data relating to meal consumption rates and to the cost of foods fed per lb. of live-weight gain are not available on a satisfactory basis. Very few farmers weighed their pigs and, thus, any calculation of live-weight gain would at the best be only an estimate. Again, the foods fed to the feeding stock as opposed to the breeding stock are recorded separately in only a small number of cases. Without a certain amount of additional recording on the part of the co-operating farmers it is therefore impossible to supply information relating to these efficiency factors. Just as milk recording assists the dairy farmer, so the systematic recording of feed inputs and live-weight gains, based on regular weighings, could be of direct benefit to pig-keepers as an aid to management. Without this systematic recording, however, there can be no check on the efficiency of conversion of feedingstuffs.

Notes on Individual Farms.

These short notes are intended to give some idea of the systems of pig-keeping practised and of the results forthcoming on the farms co-operating in the scheme. They are not intended to be comprehensive case studies, but should assist in the interpretation of the results. The farms are dealt with in descending order of profitability per £100 of gross pig output.

Farm No. 29. A small herd of approximately seven pedigree Wessex Saddleback sows and gilts plus boar, which was largely kept outdoors. Equipment included arks and tethers. Pigs normally sold mostly as weaners and small stores. Costed for only 9 months, the herd being then disposed of owing to the fact that the land was too heavy and wet for a system of outdoor pig-keeping. Food costs were relatively low as much of the keep was obtained from grazing, while, in addition, whey could be obtained free of charge except for the cost of collection. Profit over the nine months amounted to £213. Service fees produced £47.

Farm No. 44. Two Saddleback sows kept on usual lines on a 45-acre holding. Weaners sold in ones and twos to regular buyers. Farmer has had considerable experience of pig-keeping: before the war fattened 100 baconers annually, while during the war he used to turn out 300 baconers per annum, largely on swill. Contemplates a return to fattening in the near future. Makes full use of chat potatoes (5 acres of potatoes are grown) and farmyard scraps in his feeding programme. Profit for the year was £92 despite a relatively small number of pigs born per litter.

Farm No. 11. A small farm of under 70 acres, with a pedigree Wessex Saddleback herd together with a premium boar. Received £27 in service fees and a £15 boar grant during the year. The herd size was expanded considerably during the year and by the end totalled 17, including 12 in-pig gilts. Has specialized chiefly in the sale of breeding stock, but also does some feeding and will probably produce more baconers in the future. Weather permitting, the breeding stock is kept on grass in paddocks near the buildings. Housing for the pigs is neither good nor convenient and consists of various loose-boxes. A fair acreage of potatoes was grown during the year and consequently home-grown stock-feed potatoes were fed. In addition, whey was fed for nine months. Owing to the building up of the herd, the closing valuation of pig stocks was £724 greater than the opening valuation and this more than accounted for the profit on the year's working of £638. A weighing machine has recently been purchased.

Farm No. 10. Started the year with only a premium Large White boar, but during the year purchased 9 sows and gilts and a number of weaners. Sales consisted of 2 sows and gilts and 24 weaners and small stores. Also received £26 for service fees and a £10 boar grant. Only 3 litters produced during the year. Food costs were extremely low - grazing was utilised to the full, while meal consumption was cut to the minimum by the feeding of swill, scraps and roots. The increase in valuation of pig stocks amounted to £307, while the net profit for the year came to £169.

Farm No. 5. A five-acre holding devoted entirely to pigs. A water supply has been laid on and housing erected at a cost of £4,000. A breeding herd of over 50 sows and gilts is maintained and the majority of pigs are turned out as baconers. Large White, Large Black, Wessex Saddleback, Essex and Welsh sows are kept and these have been crossed with either a Large White or a Large Black boar. The herd has been costed, so far, for only a six months' period; and this covered the greater part of the summer, during which time access was available to large quantities of very cheap swill of high feeding quality. Large quantities of whey and skimmed milk were also fed. The managerial policy has been to produce as many stores as possible for feeding on swill during the summer period, and the home-produced stores have been supplemented by the purchase of weaners and stores on the open market. 41 litters were produced during the costings period, but in addition 155 weaners and stores were purchased. The piggery is looked after by two full-time men. Total profit for the six months' period amounted to £3,494.

Farm No. 12. A farm engaged in feeding purchased stores on whey and meal. Pig accommodation quite satisfactory. Owing to removal to another farm, costings were kept for only just over four months. Profit during this time amounted to £953.

Farm No. 17. A breeding and feeding farm where the sales consist of breeding stock, forward stores, weaners and a few baconers. Pig accommodation includes a modern Danish type piggery, while the breeding herd spends a good deal of its time out on grass. The average number of sows and gilts in the herd was 29, and 35 litters were produced during the year. The Large White and Welsh breeds are favoured. Dry feeding of purchased meals is practised, but this is supplemented by the feeding of some roots. The net profit for the twelve months was £2,100.

Farm No. 27. Fattening purchased weaners on swill and meal. Swill collected from military camps. Up to about 20 feeding pigs kept. The farmer had intended to start breeding his own stores, but his removal to another farm resulted in the costs being discontinued after only five months. Profit for the five months amounted to £128.

Farm No. 22. Breeding and feeding. Sales consisted of only 33 baconers and 81 weaners and stores, but both the breeding and feeding stock had been built up considerably during the year in preparation for an annual farm sale of pigs. Had over 25 sows and gilts ready for sale, together with an equal number of young gilts. Meal and whey feeding practised. A large proportion of home-grown grain was included in the ration. A large amount of concentrated swill was also fed. A premium Large White boar and also a Wessex Saddleback were kept. Profit came to £1,179.

Farm No. 6. Small herd of pedigree Welsh pigs run on open air lines. An average of 5 breeding sows was kept and eight litters were produced during the year. Accommodation consists of pig huts. Tethering of sows also practised. Sales consisted of weaners and stores, some of which were being sold for breeding. One bunch of pigs was also fattened. Foods consisted largely of sow and weaner nuts, but some roots and home-grown corn were also fed. Profit came to £261.

Farm No. 19. A farm where recording was carried on for only seven months, as it was decided to discontinue pig-keeping in order to concentrate more on poultry production. A small number of Large White and Wessex Saddleback sows kept and crossed with a Large White boar. Weaners and small stores sold. Apart from grazing, foods consisted solely of purchased meals and nuts. Profit for the seven months came to £159.

Farm No. 31. Only two breeding sows and a Welsh premium boar kept. Received over £46 in service fees during the year as well as a boar grant of £15. Sales consist of weaners. Purchased meals are supplemented by the feeding of home-grown grain and roots. Profit amounted to £63.

Farm No. 24. At the beginning of the year the herd consisted of only one pedigree Large White Sow and a Large White premium boar. The intention is to build up a small pedigree herd of Large Whites. Sales consisted of some young boars and gilts, together with a few weaners. Nearly £27 was received in service fees, in addition to a boar grant of £10. A certain amount of home-grown grain was fed. Profit for the year came to £93.

Farm No. 32. The costs relate only to a bunch of 5 purchased stores fattened to bacon weight. They were fed very largely on purchased meals. Net profit on the bunch of 5 amounted to just over £20, or £4 per baconer.

Farm No. 21. A breeding herd of approximately 10 sows with a Large White premium boar. Nearly £25 received in service fees during the year. Specialises in the sale of weaners and young stores, but a number of young boars and sows with litters were also sold. Home-grown grain and roots as well as sour milk were fed. Profit amounted to £285.

Farm No. 34. A farm of approximately 60 acres where the major part of the farm income is derived from the sale of pigs. The breeding stock consists of pedigree Essex sows and gilts. An Essex boar and a Large White boar are both kept, the former being used for herd replacement and the latter for the production of first crosses, which are normally sold as weaners at 8 to 10 weeks old. An outdoor system of pig-keeping is practised and housing consists chiefly of home-made timber huts roofed with galvanised iron. Indoor farrowing quarters are also available. The herd is in process of being built up and at the date of the closing valuation consisted of 27 sows and gilts. The feeding mixture adopted is made up of 45 per cent barley meal, 45 per cent Fine Bran and 10 per cent Fishmeal. In addition, the pigs do a considerable amount of grazing and foraging. Creep feeding is also practised. Fodder beet is being grown, but was not fed during the costings period. Apart from the purchase of an occasional boar, the herd is self-contained. Sales consist almost entirely of 10-week-old weaners which are usually sold in individual lots, but occasionally one or two fat pigs are also sold. The costings period covered by this investigation was only six months and the profit during the period amounted to £249.

Farm No. 30. Breeding and feeding. During the year built up a breeding herd of 15 sows and gilts. Also has a pedigree Welsh boar. Purchased a considerable number of weaners and stores during the year and turned out 104 baconers. Is using farm labour to convert most of his buildings into pig pens, and is also contemplating the erection of a Danish type piggery. Breeding pigs spend a good deal of time on grass. An electric fence is used. Has access to a supply of swill and also whey for a good proportion of the year. Home-grown roots are also fed. Profit on the year's working amounted to £393.

Farm No. 35. A farm of just over 70 acres situated at 900 feet. It was semi-derelict and had been badly neglected for a considerable period before the present occupier recently took possession. A good deal of land reclamation work is in progress, but in the meantime practically the only farm enterprise is pig-keeping. Accommodation for pigs is strictly limited and, as a result, fattening has been precluded. A breeding herd of 17 sows and gilts is kept on an outdoor system and sales consist of weaners. Hopes to build up a larger herd, but one limiting factor is the lack of suitable farrowing quarters. Owing to this, has experienced a high incidence of mortality at farrowing. A Large White premium boar is kept. Home-made wooden and zinc huts are used and fencing consists chiefly of an electric fence. Hopes to construct farrowing pens and to convert the shippon into feeding pens with farm labour. Some fodder beet has been planted, but during the period costed foods consisted solely of purchased meals and concentrates. Favoured the feeding of sow and weaner cubes in order to encourage foraging. The herd has, so far, been costed for a period of only six months and the profit for this period amounted to £187.

Farm No. 3. The costs relate to the feeding of 67 purchased stores to bacon weight over a period of eight months. Four of these purchased stores were retained to form the nucleus of a breeding herd. The intention is to build up a breeding herd of about eight Large White sows in order to supply over half of the store requirements needed to turn out 200 baconers per annum. The remainder of the store requirements would be met by the purchase of weaners. Farrowing pens are being constructed with farm labour and also additional feeding pens. The farm is a small one, but over 50 per cent of its acreage is devoted to the growing of grain and root crops which are used to supplement purchased whey and meal. The profit over the eight months amounted to £175.

Farm No. 2. A pedigree Welsh herd of approximately 8 breeding sows and gilts. Breeding and feeding are both carried on, but sales of breeding stock constitute a major item of income. 19 baconers were produced during the year, and a certain number of weaners were also sold. £34 was received as service fees. Some skimmed milk and home-grown roots were fed. Labour and food costs were relatively high, while mortality among suckling pigs was also high. Profit came to £118.

Farm No. 26. A small herd in course of being built up. By the date of the closing valuation it consisted of 9 sows and gilts and 2 boars. The breeds favoured are the Large White and the Tamworth. One bunch of pigs were fattened and sold as baconers, while other sales consisted of weaners. A fairly large quantity of home-grown foods was fed: potatoes, mangolds and corn. Labour costs and food costs were both relatively high. Profit amounted to £36.

PART III - FUTURE PROSPECTS.

The expansion or even the maintenance of our present pig population is bound to depend very largely on the availability of feedingstuffs. That is to say, it will depend both on the ability of this country to obtain and to pay for imported feeds and on the efforts made by home producers to bridge the gap between imports and requirements by the growing of crops specifically for stock-feeding. Some idea of the trend in feedingstuffs supplies since 1945 is given in Table 17, while details of the tonnage of the different rationed feedingstuffs distributed in 1951 are shown in Appendix A, Table 14.

Table 17.

Rationed Animal Feedingstuffs Distributed in the United Kingdom, 1945 to 1951*.
('000 Tons.)

Year.	Imported.	Home-grown or Home-produced.	Total.
1945	615	2,421	3,036
1946	654	2,383	3,037
1947	944	2,101	3,045
1948	2,175	1,753	3,928
1949	2,199	2,299	4,498
1950	2,955	2,478	5,433
1951	3,326	2,086	5,412

N.B. The figures shown in the above Table cover the quantities of rationed animal feedingstuffs distributed in the United Kingdom excluding home-grown grains retained on farms, sugar beet pulp returned to sugar-beet growers and any purchases of unrationed feedingstuffs.

* For 1951 figures, see Hansard (House of Commons), March 27th, 1952. For all other figures, see N.F.U. Information Service, Vol. VI, No. 3, March 1951, pp. 59-60, Table I.

The total distribution of animal feedingstuffs in the United Kingdom in 1951 was 5,412,000 tons; and, while it has been affirmed that it is the intention to maintain the supply at its present level, there is very little likelihood of much improvement. The world coarse grain situation shows small prospect of amelioration and there is little hope of any great improvement in imported supplies. Accordingly, the fate of the livestock expansion programme must depend very largely on the supplies forthcoming from home producers, in the form both of cereals and of bulky foods such as fodder beet and potatoes. There is great need for pig producers to grow more of the feedingstuffs they require upon their own farms and to attain a higher degree of self-sufficiency. This sermon of self-sufficiency has already been preached successfully in respect of dairy farming, and there is little reason to believe that our pig industry cannot adapt itself as well to the changed circumstances prevailing.

The Government has already given some financial incentive to the policy of substantially increasing the home production of feedingstuffs. In February of this year legislation was introduced making available, subject to certain conditions, a contribution of £5 per acre towards the costs of ploughing up grassland and sowing an approved crop for harvesting this year. The land must have been under grass for four years or more and the approved crops are scheduled as wheat, barley, oats, mixed grain, rye, potatoes, linseed and certain approved fodder crops. Although the grant was announced rather late in the season, it has probably resulted in stimulating both the arable and tillage acreages. This stimulation of the arable and tillage acreage will have to be regarded as more or less a permanent feature of our cropping if the livestock expansion programme, including the expansion in pig numbers, is to be maintained.

So far as grain production is concerned, Wales is climatically at a great disadvantage compared with certain other areas of Britain. Yields are not normally particularly heavy and in addition harvesting often presents a problem. On the other hand, bulky crops such as fodder beet can be grown very successfully without the yield disadvantages associated with cereals. Again, certain other crops such as kale, rape and even grass, especially if associated with controlled grazing by means of an electric fence, can play an important part in achieving a higher degree of self-sufficiency in relation to pig-keeping. It is true that the feeding of fodder beet or other roots and the greater use of controlled grazing will require a re-orientation of ideas relating to pig management, but they are systems which offer under the changed circumstances of today a greater future than adherence to the old method, which was based on the pig as a converter of imported supplies of grain. The future development of feeding along the lines suggested does not visualise any policy of complete self-sufficiency in feedingstuffs, but merely the use of a greater quantity of bulky foods as an addition to the meagre supplies of rationed concentrates now available. The Lehmann system of pig-feeding can provide the means by which these bulky substitutes for cereals can be fed; and the application of this system, using fodder beet as a means of economising in purchased meals, has already been discussed in a Note issued by this Department.*

Any movement towards a higher degree of self-sufficiency in pig-keeping inevitably favours the keeping of pigs as a department of the mixed farm rather than as a monoculture enterprise on a specialist pig holding. The idea of pig production as a joint enterprise with other branches of farming is, again, a very suitable one so far as Welsh conditions are concerned. The adoption of the policy of "a few pigs on every farm" fits in well with the economy of the Welsh mixed farm, and is one means of increasing farm output without any great dislocation of the farm work and of labour routine. As a subsidiary enterprise it can result in maximising the output of farm labour without involving the expenditure of much in the way of capital outlay. Farm buildings on Welsh farms are not usually designed for housing pigs on a large scale, and one or two sties normally cover the extent of the pig accommodation. Without involving much capital expenditure, however, it should be possible to adapt existing buildings as fattening and

---

* A Note on the Feeding of Fodder Beet to Pigs as a means of Economising in Purchased Meals". A. M. Morgan Rees, Department of Agricultural Economics, Aberystwyth, 1952.

farrowing pens or, alternatively, to construct some form of simple pig housing very cheaply, using farm labour. Again, a good many buildings are empty of stock during the summer months and in some cases could be used during this period for fattening baconers. Pig-keepers have usually been noted for their ability to "make do" with the minimum of expenditure on housing, and, although Danish-type piggeries may be the ideal, in most cases they can be relegated to the sphere of specialist production. Provided good farrowing quarters are made available and fattening accommodation can be constructed or adapted from other buildings, an outdoor system of pig-keeping should be able to flourish on the general mixed farm with the minimum of permanent housing. Shelters and moveable pig huts can be constructed very simply and very cheaply with farm labour, and this aspect of the problem of fitting the pig-enterprise into the economy of the mixed farm should be readily overcome. It is true that where capital is readily available a sound case can be made for erecting a modern-type piggery on the general farm, and it should be possible to recoup the capital expenditure on even a relatively expensive piggery in a comparatively short time. On the other hand, this course might involve the necessity of employing a full-time man to look after the pig enterprise. Where the pig enterprise is kept on a reasonably small scale it should be possible to avoid dislocating the farm labour economy in this way. In short, kept within reasonable size limits, and regarded as a subsidiary farm enterprise, pig-keeping should form an important adjunct to Welsh family farms.

Any discussion on the future prospects of the pig industry must take into account the relationship between costs and prices and also the financial returns which are likely to accrue from the enterprise. The major item in the cost structure relating to pig-keeping is the cost of food. During the last few years this has shown a steady upward movement, but signs of a check to the upward spiral of feedingstuffs prices are now evident. The announcements in connection with the recent Price Review award have indicated a change in Government policy, insofar as the direction of production is now to be achieved to a certain extent by the introduction of cost subsidies rather than by changes in prices. It has been announced that the Government has decided to hold unchanged until March 31st. 1953 the basic release prices of feedingstuffs, and this will inevitably result in stabilising the present prices prevailing for compound pig meals. With the major cost item "pegged" and with a guaranteed price per score for baconers, the pig producer faces a relatively stable cost/price relationship for the coming year. However, the breeding side of the pig industry and the weaner trade are unlikely to be as remunerative as the feeding side. Between 1949 and 1951 the number of sows and gilts in pig and other sows kept for breeding in Wales increased by over 64 per cent. This was a period of very great expansion in the number of breeding pigs, and one during which newcomers to pig-keeping were becoming stocked-up. Consequently, relatively high prices prevailed for weaners during these years, but it is unlikely that the demand will be maintained at its previous high level. Pig-keepers are now tending to be more self-sufficient in meeting their store pig requirements and this will probably result in a relative lowering in market prices. In the case of the feeding side of the industry, although profit margins are unlikely to be as high as they were during 1950-51 there should still be a reasonable financial reward for fattening. If greater use is made of home-grown bulky foods such as fodder beet, the full impact of the rise in the price of purchased feeds which has occurred during the last year should not be felt to its fullest extent. Again, even if the profit margin per baconer has been reduced, it should still be possible to attain the same overall margin on the enterprise by making every effort to increase the total throughput of baconers off the farm.

One of the most striking features revealed by an enquiry into any particular farm enterprise is the wide variation in technical efficiency from one farm to another. The pig enterprise is no exception and the need exists for a great improvement in this respect. A comparison of pig-keeping in Britain with pig-keeping in Denmark reveals the deficiencies of the home industry. Much could be done to improve the quality of the product appearing on the market and to eliminate the consignment of heavyweight pigs to the factory. The first essential for the individual producer in any attempt to strive towards the goal of quality bacon is to introduce the regular practice of weighing all pigs during the final stages of fattening. This should ensure that all pigs consigned to the factory qualify for the full quality premium price. Far too many producers are at present receiving reduced returns as a result of inaccurate estimates of weight, and a weighing machine with crate should form an essential part of the equipment of every pig enterprise. The capital cost involved in the purchase of this equipment would be small, while the economy and increased returns resulting from its use should more than compensate for the outlay.

Probably, however, the biggest single factor that would bring about an advance in the technical efficiency of the pig industry of this country would be the widespread adoption of Pig Recording and Litter Testing. Both methods are based on the selection of parents on the basis of production records. Pig recording is largely a performance record of a sow designed to assess her mothering qualities, and it involves amongst other things the earmarking of litters, the weighing of pigs at three weeks old and again the weighing of pigs at eight weeks old. With litter testing, on the other hand, two gilts and two hogs are selected from the litter at weaning. They are sent to a Litter Testing Station, along with bunches of pigs from other farms, and are there subjected to a standard diet and similar system of management. Information is obtained relating to the comparative food consumption efficiency of each litter and, observations relating to carcase quality and conformation are also made. Pig recording and litter testing have now been practised in Denmark over the last forty-five years, and they have given rise to widespread improvements in the commercial pig population. During this period the number of eight-weeks-old pigs weaned per litter has increased from 8.3 to 9.4; the utilisation of food by the pig has been improved to such an extent that consumption has been reduced from 3.77 to 3.15 food units per pound live-weight gain; while the Wiltshire trade has been catered for by increasing the average length of baconers by nearly two inches and by reducing back-fat by one-third of an inch.* In Britain, pig recording and litter testing have so far been relatively neglected avenues for improving the technical efficiency of pig-keeping. A number of pig recording schemes were in operation before the War, but from 1939 onwards there was a halt to expansion along these lines. Lately, a number of these schemes have been revived; but unfortunately, they cover only a very small number of pig-keepers. Apart from an experimental litter testing station set up by the Animal Breeding Department of the University of Edinburgh, little was done in this field in Britain until a short time ago. More recently, however, The British Oil and Cake Mills Ltd. have organised a series of National Pig Litter Tests at Stoke Mandeville under the direction of Dr. Blount. These tests have aroused a good deal of interest in the pig industry and this has been crystallised in a recent policy decision of the National Pig Breeders' Association. The Association is now of the "opinion that the immediate organisation of official Pig Recording and Litter Testing Schemes is desirable" and is "considering the necessary arrangements for the immediate institution of a Progeny Testing Scheme."** In an address to The Farmers' Club in 1951, Dr. Calder stated that: "The industry is ripe for a yardstick of efficiency which can be applied on every producer's premises, and a national pig recording scheme would best provide the means by which this could be attained."ø This should be the ultimate goal of all members of the pig industry if they wish to raise the general level of technical efficiency; the results accruing should be as far-reaching as those which have followed the introduction of milk recording. Meanwhile, it is felt that schemes such as the Pig Costings Recording Scheme organised by this Department, even though they cover only a very small number of producers, can at any rate provide both financial and physical data which can be of some value to individual pig-keepers.

---

* "The Development of the Danish Landrace Pig based on Progeny Testing". H. Clausen. Pig Breeders' Gazette, No. 69, April 1952.

** Pig Breeders' Gazette, No. 69, April 1952. p. 33.

ø "Some Problems Facing the Pig Industry". A. Calder. Journal of the Farmers' Club, Part 2, 1951. pp. 20-21.

APPENDIX A.

Table 1.

Consumption of Pig Meat in the United Kingdom*. Per Capita(a).

Year.	Pork.	Bacon.	Total.
	lb.	lb.	lb.
Aver. 1934-1938	11.5	27.3	38.8
1942	4.9	19.4	24.3
1945	11.2	16.8	28.0
1946	3.2	15.1	18.3
1947	1.0	10.1	11.1
1948	1.1	10.8	11.9
1949	2.3	13.5	15.8
1950	4.2	22.1	26.3

(a) As calculated in the Food Consumption Levels Enquiry.

Table 2.

Estimated Supplies of Pork and Bacon and Ham in the United Kingdom.**

(Thousand Tons.)

Year.	Pork.			Bacon and Ham.			
				Home Produce.			
	Home Produce (a)	Retained Imports. (b)	Total.	From Home-Killed Pigs (c)	From Imported Carcases	Retained Imports.	Total.
1938	178	38	216	194	21	371	586
1942	30	84	114	108	14	326	448
1945	34	165	199	124	25	243	392
1946	25	53	78	115	24	178	317
1947	15	4	19	89	9	131	229
1948	21	3	24	107	7	134	248
1949	38	21	59	186	8	138	332
1950	65	20	85	214	10	243	467

N.B. This table excludes offal and canned meats.

(a) Includes production by self-suppliers and trimmings from bacon pigs.

(b) Excludes estimated quantity of imported pork used for bacon production.

(c) Includes production by self-suppliers.

---

* "Meat". Commonwealth Economic Committee. H.M.S.O. 1951, p. 38.

** Ibid, Table 40, p. 38.

Table 3.

Pigs Marketed in England and Wales, and the proportion of the total supply provided by Self Suppliers, 1941-51*.

Year.	Commercial Marketings.	Self-Supplier Marketings.	Total Marketings.	Self-Supplier Marketings as % of Total Marketings.
	'000	'000	'000.	%.
1941	2,629	363	2,992	12.1
1942	1,351	425	1,776	23.9
1943	1,193	489	1,682	29.1
1944	1,006	472	1,478	31.9
1945	1,447	493	1,940	25.4
1946	1,250	520	1,770	29.4
1947	660	590	1,250	47.2
1948	892	649	1,541	42.1
1949	1,940	729	2,669	27.3
1950	2,804	459	3,263	14.1
1951	3,391	365	3,756	9.7

* Constructed from data supplied by the Statistics and Intelligence Division (Bacon), Ministry of Food.

Table 4.

Average Number of Pigs. Quinquennial periods, 1875-1949.

(Thousands).

Year.	Wales and Monmouth.	England.	Scotland.	Great Britain.
1875-79	227	1,947	145	2,319
1880-84	228	1,981	143	2,352
1885-89	240	1,983	145	2,368
1890-94	247	2,075	139	2,461
1895-99	264	2,231	141	2,636
1900-04	245	2,104	133	2,482
1905-09	237	2,145	136	2,518
1910-14	230	2,160	149	2,539
1915-19	197	1,803	141	2,141
1920-24	224	2,304	162	2,690
1925-29	213	2,361	167	2,741
1930-34	235	2,698	169	3,102
1935-39	241	3,425	251	3,917
1940-44	146	1,828	208	2,182
1945-49	114	1,509	181	1,804

Table 5.

Total Number of Pigs on Agricultural Holdings. United Kingdom.

(Thousands.)

Year.	March Census.	June Census.	September Census.	December Census.
1945	2,069	2,152	2,256	2,172
1946	1,952	1,955	1,973	1,859
1947	1,672	1,628	1,761	1,793
1948	1,881	2,151	2,603	2,779
1949	2,660	2,823	3,087	3,140
1950	2,975	2,986	3,327	3,507
1951	3,584	3,891	4,531	4,894*

* Provisional.

Source: Monthly Digest of Statistics, H.M.S.O.

Table 6.

Number of Sows and Gilts for Breeding on Agricultural Holdings. United Kingdom.

(Thousands.)

Year.	March Census.	June Census.	September Census.	December Census.
1945	241	246	238	222
1946	220	221	200	173
1947	186	197	218	233
1948	279	318	324	305
1949	321	345	346	335
1950	346	387	412	444
1951	488	560	582	570*

* Provisional.

Source: Monthly Digest of Statistics, H.M.S.O.

Table 7.

Total Number of Pigs on Agricultural Holdings. Wales.

(Thousands.)

Year.	March Census.	June Census.	September Census.	December Census.
1945	120	133	145	134
1946	98	103	113	109
1947	79	79	103	110
1948	97	124	160	159
1949	122	133	144	138
1950	109	115	138	145
1951	138	161	202	224

Table 8.

Number of Sows and Gilts for Breeding on Agricultural Holdings. Wales.

(Thousands.)

Year.	March Census.	June Census.	September Census.	December Census.
1945	15	15	14	12
1946	11	11	11	10
1947	10	11	12	14
1948	16	19	18	16
1949	16	16	15	14
1950	15	16	17	20
1951	22	27	28	28

Table 9.

Changes in Agricultural Price Indices.
(1927-29 = 100.)

Year.	Index. Store Pigs.	Index. Bacon Pigs.	Index. Fat Cattle.	Index. Milk.	Index. Livestock and Livestock Products.	Index. All Produce.	Bacon Pigs Price Index as Per Cent of Index of All Agricultural Produce.
1939	102	87	97	102	91	91	96
1940	99	125	122	134	121½	125	100
1941	121	133	127	158	137	150½	88
1942	136	153	137	175	150	161½	95
1943	158	155	141	178	151½	163½	95
1944	184	154	144	187	158½	169½	91
1945	146	160	148	192	164	173½	92
1946	166	177	156	206	178	183	97
1947	252	209	183	222	199	212½	98
1948	211	230	201	234	215	219	105
1949	276	266	210	248	228½	229	116
1950	377	303	214	261	240½	237½	128
1951	412	338	231	277	264½	260½	130

Table 10.

Pigs per 1,000 Acres Crops and Grass.

	1930-2	1937-9	1940-2	1943-5	1946-8	1949-50	
Anglesey	88	86	75	55	37	51	84
Brecon	41	48	40	32	29	31	32
Caernarvon	72	83	74	52	42	57	78
Cardigan	90	80	59	40	32	32	36
Carmarthen	74	51	42	30	27	26	29
Denbigh	110	108	76	54	46	61	87
Flint	147	167	119	81	81	111	157
Glamorgan	87	96	84	76	59	75	89
Merioneth	49	48	45	40	31	32	35
Monmouth	87	97	74	51	46	60	70
Montgomery	93	95	74	58	49	61	83
Pembroke	126	103	69	44	34	40	56
Radnor	28	29	26	23	21	23	25
Wales	86	83	65	48	40	49	63
England	112	152	99	64	60	94	128
Scotland	34	55	51	40	38	55	77
Great Britain	97	131	89	59	55	84	115
Northern Ireland	91	236	128	110	143	216	257
United Kingdom	97	139	94	63	62	93	125

Table 11.

Number of Pigs Per Agricultural Holding 1951.*

	All Pigs.	Breeding Pigs.	Other Pigs (excluding boars.)
Anglesey	3.0	0.6	2.4
Brecon	2.1	0.3	1.8
Caernarvon	2.1	0.3	1.7
Cardigan	1.6	0.2	1.4
Carmarthen	1.4	0.2	1.2
Denbigh	4.1	0.6	3.4
Flint	5.9	0.9	5.0
Glamorgan	4.0	0.6	3.3
Merioneth	1.4	0.2	1.2
Monmouth	3.5	0.5	2.9
Montgomery	4.1	0.8	3.3
Pembroke	3.1	0.5	2.5
Radnor	1.8	0.3	1.5
Wales	2.9	0.5	2.4

* Agricultural Holdings exceeding 1 acre in size.

Table 12.

Composition of the Welsh Pig Herd. June 1951.

	Total Pigs.	Total Breeding Pigs. (a)	Total Other Pigs excluding Boars.	Total Boars being used for Service.
Anglesey	11,345	2,278	9,002	65
Brecon	4,926	629	4,275	22
Caernarvon	10,029	1,693	8,275	61
Cardigan	8,505	1,305	7,150	50
Carmarthen	11,066	1,683	9,331	52
Denbigh	20,689	3,234	17,331	124
Flint	18,354	2,876	15,375	103
Glamorgan	18,148	2,958	15,058	132
Merioneth	3,402	446	2,944	12
Monmouth	14,464	2,208	12,163	93
Montgomery	20,852	4,074	16,685	93
Pembroke	15,591	2,694	12,791	106
Radnor	3,587	527	3,039	21
Total Wales	160,958	26,605	133,419	934
%	100.0	16.5	82.9	0.6

(a) Sows in pig, Gilts in pig, and other sows kept for breeding.

Table 13.

Improvement of Livestock Scheme. Number of Boar Licences Issued.

Breed.	Wales(a).	England(a)	England & Wales(a)	Scotland(b)
Large White	197	5,207	5,404	883
Wessex Saddleback	31	1,236	1,267	103
Welsh	24	17	41	-
Essex	11	1,040	1,051	14
Tamworth	5	117	122	8
Large Black	4	675	679	90
Berkshire	1	170	171	-
Middle White	-	144	144	-
Long White Lop-Eared	-	79	79	-
Gloucester Old Spots	-	51	51	-
Lincolnshire Curly Coat	-	51	51	-
Yorkshire Blue and White	-	29	29	-
Other Breeds	-	24	24	-
Total	273	8,840	9,113	1,098

(a) Year ending 31st. March 1950. (b) Year ending 31st December 1950.

Table 14.

Rationed Animal Feedingstuffs Distributed in the United Kingdom 1951*.

(Thousand Tons).

	Imported.	Home-grown or Home-Produced.	Total.
Wheat of feeding quality	189	65	254
Wheat offals	175	979	1,154
Barley	1,181	24	1,205
Oats	81	128	209
Maize	874	-	874
Sorghum	71	-	71
Oilcakes and Meals	434	573	1,007
Other Feedingstuffs	321	317	638
Total	3,326	2,086	5,412

* Hansard (House of Commons) Vol. 498. No. 64. Thursday 27th March, 1952.

APPENDIX B.

Table 1.

Aggregate Financial Results of 21 Herds Costed for Varying Periods between May 1st. 1950 and September 30th. 1951.

No.	Opening Valuation:-	£. s. d	£. s. d	No.	Closing Valuation:-	£. s. d	£. s. d
23	Boars	690. 0. 0		32	Boars	916. 0. 0	
176	Sows and Gilts	5,011. 0. 0		270	Sows and Gilts	7,533. 0. 0	
271	Suckling Pigs	813. 0. 0		555	Suckling Pigs	1,639. 0. 0	
586	Store & Feeding Pigs	5,672.10. 0	12,186.10. 0	650	Store & Feeding Pigs	8,360.10. 0	18,448.10. 0
	Purchases:-				Sales:-		
17	Boars	557. 6. 0		24	Boars	676. 7.10	
28	Sows and Gilts	1,048. 6. 0		68	Sows and Gilts	2,177.18. 3	
214	Suckling Pigs & Weaners	1,340.15. 0		119	Suckling Pigs	714. 0. 0	3,568. 6. 1
291	Stores	2,589. 2. 0	5,535. 9. 0				
				636	Stores under 7 score	5,085.15.10	
2007	Pigs born alive		-	173	" over 7 "	2,976. 3. 6	
			17,721.19. 0	682	Baconers	13,460.17. 4	
	Gross Pig Output		26,216.19. 6	2	Casualties	5. 0. 1	21,527.16. 9
					Other Credits:-		
					Service Fees	329. 5. 8	
					Grants	65. 0. 0	394. 5. 8
					Deaths:-		
				352	Pre-Weaning		-
				40	Post-weaning		-
				10	Sows and Gilts		-
3613			£43,938.18. 6	3613			£43,938.18. 6

Costs:-	cwt.	£. s. d	£. s. d		£. s. d
Purchased Meals & Concentrates	$6,163\frac{3}{4}$	9,530.18. 7		Gross Pig Output	26,216.19. 6
Home Grown Meals & "	$480\frac{1}{4}$	296. 7.10			
Swill		383.11. 1			
Concentrated Swill		382. 8. 3			
Whey (172,490 gallons)		687. 0. 1			
Skimmed Milk, Sour Milk etc. (2,660 gallons)		63.10. 0			
Potatoes ($987\frac{1}{4}$ cwt.)		316. 0. 8			
Other Foods		115.11. 5	11,775. 7.11		
Labour			2,114. 2. 8		
Transport			249. 4. 1		
Vet. and Medicine			155.16. 7		
Depreciation on Equipment			190. 2. 9		
Rent Charge			348. 7.10		
Repairs and Improvements			96.19. 6		
Miscellaneous Expenses			283.10.11		
			15,213.12. 3		
Net Profit			11,003. 7. 3		
			£26,216.19. 6		£26,216.19. 6

Table 2.

Costs and Profit per £100 Gross Pig Output.

Farm Code Number.	Food Costs.	Labour Costs.	Other Costs.	Total Costs.	Net Profit.
	£.	£.	£.	£.	£.
29	24	10	7	41	59
44	31	7	4	42	58
11	40	4	3	47	53
10	19	13	16	48	52
5	38	6	4	48	52
12	46	4	1	51	49
17	41	6	4	51	49
27	33	13	7	53	47
22	41	8	4	53	47
6	53	3	4	60	40
19	52	6	5	63	37
31	29	28	10	67	33
24	43	11	14	68	32
32	60	5	4	69	31
21	59	8	4	71	29
34	44	18	13	75	25
30	57	11	8	76	24
35	64	9	4	77	23
3	66	12	3	81	19
2	67	13	8	88	12
26	57	24	12	93	7
All Farms	45	8	5	58	42

Table 3.

Distribution of Costs per £100 Expenditure.

Farm Code Number.	Meals & Concentrates.	Other Foods.	Total All Foods.	Labour.	Other Costs.
	£.	£.	£.	£.	£.
29	51	7	58	24	18
44	68	6	74	17	9
11	70	16	86	7	7
10	38	1	39	28	33
5	58	20	78	13	9
12	88	2	90	7	3
17	78	3	81	12	7
27	54	8	62	24	14
22	44	33	77	16	7
6	87	1	88	5	7
19	83	-	83	10	7
31	42	2	44	41	15
24	63	-	63	17	20
32	87	-	87	8	5
21	82	1	83	11	6
34	55	3	58	24	18
30	55	20	75	14	11
35	83	-	83	11	6
3	67	15	82	15	3
2	69	7	76	15	9
26	23	38	61	26	13
All Farms	64	13	77	14	9

Table 4.

Analysis of Pig Sales.

Farm Code Number.	Total Value of All Sales.	Sales as Per Cent of the Value of All Sales. Breeding Stock.	Fat Stock.	Store Stock.
	£. s. d	%.	%.	%.
29	538.15. 6	64	4	32
44	149.12. 0	-	14	86
11	746. 7. 0	54	34	12
10	294. 8. 0	21	-	79
5	3,592. 8. 6	7	92	1
12	4,346.13. 1	-	99	1
17	5,789.17. 6	15	7	78
27	319.17. 4	-	100	-
22	1,585. 4. 0	3	49	48
6	471.16. 6	-	20	80
19	260. 6.10	-	17	83
31	120. 2. 6	-	11	89
24	212. 3. 0	72	-	28
32	105.13. 4	-	100	-
21	927. 3. 4	56	-	44
34	831.13. 7	2	11	87
30	1,987. 0. 1	4	93	3
35	369. 8. 2	-	-	100
3	1,305.14. 7	-	100	-
2	835. 0. 0	44	44	12
26	306.18. 0	-	59	41
All Farms	25,096. 2.10	11	54	35

APPENDIX C.

Prices Fixed at Periodical Reviews For Bacon Pigs, per score dead weight.

Basic Price 1944-45:	23s. 9d.
1945-46 Price fixed at February 1945 Review:	24s. 9d.
1946-47 Price fixed at June, 1946 Special Review:	28s. 0d.
1947-48 Price fixed at February 1947 Review:	30s. 0d.

(Increased for clean pigs with additional adjustments in certain weight grades).

1947-49 Price fixed at August 1947 Special Review:	36s. 0d.

(This is for clean pigs of the standard weight range; the 1947-49 price for the same categories as in earlier years would be 34s. 6d.)

1949-50 Price fixed at February 1949 Review:	42s. 9d.

(This is for clean pigs of the standard weight range; the price for the same categories as in earlier years would be 34s. 6d.)

1950-51 Price fixed at February 1950 Review:	46s. 9d.

(Weighted average price, including new quality premiums equivalent to 1s.3d. per score over all pigs.)

1951-52 Price fixed at February 1951 Review (Including Special Price Review adjustment):	51s. 9d.

(The increase of 5s.0d. per score is on clean pigs in the quality premium range only, with an increase of 4s.6d. per score on other clean pigs. Other classes of pigs received a smaller increase.)

(An additional increase of 5d. per score dead weight became operative as from 3rd December 1951, as a result of the Special Price Review in the Autumn.)

N.B. A special quality premium was introduced as from April 1st. 1950, to cover clean pigs between the weights of 6 score. 16 lb. and 9 score. 5 lb.

Half Quality Premium of 2s. 0d. per score from 6 score 16 lb. to 7 score 0 lb.

Full Quality Premium of 4s.0d. per score from 7 score 1 lb. to 9 score 0 lb.

Half Quality Premium of 2s.0d. per score from 9 score 1 lb. to 9 score 5 lb.

APPENDIX D.

Definitions and Costings Procedure.

(1) Gross Pig Output.

The gross pig output is the value or weight of pigs sold during the costings period, less purchases of livestock, plus or minus changes in valuation (N.B. Service Fees and Boar Grants received have been credited.)

(2) Profit.

In the calculation of 'Profit', no charge has been made for managerial labour, or for interest on capital invested in livestock or for litter. No credit has been allowed for pig manure produced. It is assumed that the value or cost of the litter is cancelled by the value of the manure produced.

(3) Sales of Bacon Pigs.

The value of fat pigs sold to the Ministry of Food is stated as the actual price received by the producer, i.e. as net value. Marketing charges such as insurance and transport have already been deducted

(4) Purchases of Pigs.

Entered at cost price.

(5) Valuations.

Purchased boars are valued at cost price less reasonable depreciation while home-reared boars are valued at approximate market value. Purchased sows and gilts are transferred into the breeding herd at cost price, but at the end of the costings period are valued at commercial rates, and as far as possible values are kept constant. In the case of all feeding stock, estimated market values are applied.

(6) Transfers from Breeding Stock to Feeding Stock.

Weaners are transferred from breeding stock to feeding stock at time of weaning and are valued at estimated market value. Breeding gilts are transferred from feeding stock to breeding stock at date of service and are valued at store price.

Young boars reserved for breeding are similarly valued and transferred from the feeding stock to the breeding stock at the appropriate time. Breeding stock sold, whether fat or otherwise, are not transferred to the feeding stock.

(7) Weights.

Apart from the breeding stock, the weights of all pigs were obtained at the beginning and end of the costings period. Similarly, weights were obtained for pigs at the time of their transfer from feeding stock to breeding stock or vice versa. Weights of store pigs at the time of sale were also obtained, while deadweights of fat baconers have been converted to liveweights. Where possible, actual weights have been obtained, otherwise it has been necessary to use estimates.

(8) Foods.

The cost of purchased foods is the net cost of the food delivered on the farm. In the case of home-grown foods, cost of production figures have been applied.

(9) Labour.

Actual wage rates are used, except in certain cases where a standard rate of 2s.6d. per hour is charged.

(10) Other Costs.

These include vet and medicines; transport, including the use of the farmer's own car or van; expenditure on small tools; licences; repairs to buildings; a rent charge for accommodation etc.
