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hitherto available on some of the leading economic problems in farming.

Plans in respect of the other objective of this scheme, namely, the collection of information on the economics of farming, are as yet less advanced.

Starting from the 1945-46 season record books will be available to any farmer in the State. However, only books from the specially-chosen districts will be analysed by the Department as part of its research work. It is hoped that, possibly through the Agricultural Bureau, groups will be formed of farmers interested in keeping records. In this event, it will probably be possible for the advice to be given through these groups which could not be offered to individual farmers.

#### RECENT INVESTIGATIONS INTO FARM MACHINERY COSTS.

(F.C. Druce, B.Ec.).

The rapid expansion in the N.S.W. Government's Dairy Mechanisation Scheme so that it will now embrace not only the dairying industry but all rural industries in the State, and the fact that in the opinion of persons well qualified to judge mechanisation will be a permanent feature of our post-war agricultural set-up, serve to stress the importance of the survey of the costs of operations now being carried out by the Division of Marketing and Agricultural Economics.

The object of the survey is to obtain the costs per hour, and per acre, of operating different types of tractors and different combinations of tractor and implement, and also of operating the same type of tractor and implement used in different kinds of country and under different conditions.

An accurate knowledge of the costs of operations is regarded as of great importance in the efficient working of the Mechanisation Scheme, for the following reasons:-

(a) It makes it possible to fix charges on a scientific basis so that the co-operative will not make a large profit at the expense of those who are taking advantage of the Government's Scheme. Nor will it incur a heavy loss, a loss which might have severe repercussions at a later stage in the development of the Scheme.

(b) It will also make it possible to decide, with some measure of authority, the type of tractor which can be worked most economically under given conditions.

(c) A comparison of the records and costs of different co-operatives provides a good check on the efficiency of both the management and the operators employed.



## The Records.

To ascertain costs it is, of course, necessary to obtain detailed records of all operations carried out by pool operators, together with full details of all expenditure incurred by the pool.

With this object in view, a system of records was drawn up in the latter part of 1943 in consultation with the Bowthorne Co-operative Butter Factory Ltd., Morpeth, and the Nowra Co-operative Dairy Factory Ltd., Bomaderry, which provides for a complete record of all operations. The system was put into operation from the 1st January, 1944, at the abovementioned factories and also at the Hastings District Co-operative Dairy Co. Ltd., Telegraph Point, and from the 1st April, 1944, at the Bega Co-operative Creamery Co. Ltd.

Several other co-operatives agreed to keep records of their operations, but subsequently decided that it was not possible for them to do so. Recently two further co-operatives agreed to keep records.

Although records have been kept at three co-operatives since January, 1944, it has not yet been possible to obtain any really accurate figures of costs. An analysis of the records of the four factories already mentioned was made for the period January to June, 1944 \* but, for the reasons indicated below, the figures obtained cannot be regarded as highly accurate.

In the first place, considerable difficulty was experienced in several instances in getting the operator to keep records accurately. This applied particularly to fuel consumption and checks made at the end of the period showed, in some instances, considerable differences between the amount of fuel recorded as used by the operator and the amount of fuel purchased.

Secondly, sufficient details of repairs, replacements, etc., were not always kept with the result that repairs could not be allocated accurately between the different tractors and implements.

However, in spite of these shortcomings, it is unlikely that the margin of error exceeds 10% in any case.

It is expected that the figures for the six monthly period July to December, 1944, will be much more accurate as operators have now had considerable experience in keeping the records. The Bowthorne Company is also keeping detailed records of all repairs and replacements and figures from this company should, in future, be particularly valuable.

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\* In the case of the Bega Co-operative Creamery Co. Ltd., the records analysed covered the four months April to July, 1944.



It is hoped that the analysis of the records for this period will be available for publication in February or March.

### Costs per Hour.

The costs and the charge per hour of the four co-operating factories were as follows:-

	<u>Cost</u>	<u>Charge</u>
<u>Bowthorne:</u>		
1 H.C. W4 Tractor and 3 furrow disc plough	13/10	13/6
Farmall H. Tractor and 3 furrow disc plough	13/8 $\frac{1}{2}$	13/6
Farmall H. Tractor and bog and bush harrow	13/7	13/6
Howard DH22 Rotary Hoe	13/10	15/-
<u>Nowra:</u>		
1 H.C. W6 Tractor and 3 furrow disc plough	16/5	17/6
1 H.C. W6 Tractor and tandem disc harrow	16/3 $\frac{1}{2}$	17/6
<u>Hastings:</u>		
Massey Harris 203 Tractor and 5 furrow disc plough	15/3	15/-
Massey Harris 203 Tractor and tandem disc harrow	15/1 $\frac{1}{2}$	15/-
<u>Bega:</u>		
Howard DH22 Rotary Hoe	14/3 $\frac{1}{2}$	*

These costs are not comparable as between different factories as the "general expenses" varied very greatly depending, largely, on the charge made by the co-operative for office and administrative expenses.

The general expenses, per hour, were:-

Bowthorne	1/8
Nowra	7.2d
Hastings	11.3d
Bega	4.3d

In the case of the Bowthorne Co-operative the pool bore all costs associated with the Scheme and the 1/8d per hour included the wages of a full-time office assistant, a factory management administration charge, cost of stamps and stationery and the rent of the office and office equipment.

On the other hand Nowra's 7.2d per hour did not include any charge for office or administrative expenses.

\* The Bega Co-operative Creamery Co. Ltd. charges on an acreage basis:- New land 30/- per acre, Stubble land 25/- per acre, Freshly ploughed land 20/- per acre.



In the case of the Hastings Co-operative a small charge for these services was made, while at Bega the only charge made was 5/- per month for stamps and stationery.

### Wages.

The most important item in costs was wages. These varied from about 5/- to 5/9 per hour and comprised from 34-40% of total costs.

The Bowthorne and Nowra Co-operatives kept detailed records of the way in which the operator's time was made up. Time was divided into four classes:

- (i) Working time.
- (ii) Travelling time.
- (iii) Other time (i.e., all other time spent on pool work, including repairs, greasing, etc.).
- (iv) Outside time (i.e., time worked by the operators on work not connected with the pool. This consisted of work done for farmers when weather did not permit of operations being carried on and of work done in the factory when it was not possible to operate tractors).

In the case of the Bowthorne Co-operative all outside time was paid for by the factory or the farmer concerned. In the case of the Nowra Co-operative the factory did not pay the pool for work done by its operator, and outside time was paid for only when it was done for a farmer.

The Bega Co-operative recorded time taken in travelling

The records of time worked show that for every hour spent on actual operations, the remaining time was occupied as follows:-

<u>Bowthorne</u>	<u>Nowra</u>	<u>Bega</u>
9	13	6 minutes travelling time
26	44	- minutes "other time".
11	4	- minutes outside time (paid)
-	11	- " " " (unpaid)

Thus, for every hour spent in actual operations, the pool paid operators for an additional 35 minutes' work at Bowthorne and for an additional 1 hour 8 minutes at Nowra.

### Kerosene Consumed.

Kerosene was the second largest cost item. It varied considerably, depending on the size of the tractor. The cost for Bowthorne's W4 Tractor was just over 2/- per hour while the cost for the W6 Tractor at Nowra was 4/5 per hour. Kerosene accounted for from 15-26% of the total costs.



## Depreciation.

Depreciation is also an important factor in costs, and for the present can be based only on the opinions of persons qualified to estimate the life of the machinery under the special conditions applying.

The rate used in ascertaining costs is 25% per annum on all tractors and implements with the exception of the Rotary Hoe, the rate for this being 33 $\frac{1}{3}$ %.

These rates were decided upon after consultation with the four co-operating factories and several officers of the Department.

## Costs per Acre.

The times taken to work an acre, and consequently the cost per acre, varied very considerably, as will be seen from the table which follows:-

	<u>Cost per Acre</u>	<u>Time taken to work one acre.</u>
	£ s. d.	hrs.
<u>Bowthorne -</u>		
1 H.C. W4 Tractor and 3 furrow disc plough	1. 7. 0	1.95
Farmall H. Tractor and 3 furrow disc plough	1. 4. 5	1.79
Farmall H. Tractor and bog and bush harrow	14. 1	1.04
Howard DH22 Rotary Hoe	1.11. 6	2.28

### Nowra -

1 H.C. W6 Tractor and 3 furrow disc plough	1. 0. 0	1.22
1 H.C. W6 Tractor and tandem disc harrow	6. 8	.41

### Hastings -

Massey Harris 203 Tractor and 5 furrow disc plough	18. 8	1.20
Massey Harris 203 Tractor and tandem disc harrow	9. 3	.61

### Bega -

Howard DH22 Rotary Hoe	(a)	(a)
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(a) In the case of Bega costs varied considerably according to the gear in which the tractor worked; as far as can be ascertained they were as follows:-

	<u>Cost per Acre</u>	<u>Time taken to work one acre</u>
1st Gear -	£2.11. 5 $\frac{1}{2}$	3.6 hours
2nd " -	1. 8. 7	2.0 "
3rd " -	1. 7. 10 $\frac{1}{2}$	1.95 "
4th " -	1. 0. 8 $\frac{1}{2}$	1.45 "



From these figures it would appear that it is more economical to operate a larger tractor, such as the I.H.C. W6 or the Massey Harris 203, than one of the smaller types. However, too much importance should not be attached to this conclusion, at least until it is verified by more accurate records, records which it is hoped will be available shortly.

## RECENT PRODUCTION TRENDS IN NEW SOUTH WALES.

(R.B. McMillan, B.Com.).

The agricultural outlook in New South Wales is now completely dominated by the extending drought. The greater part of the last quarter of 1944 was hot and dry, and strong winds with dust storms occurred all too frequently. All districts have suffered, and rain is needed everywhere, even in the coastal districts which not so long ago were looking forward to a summer of high production.

The areas most seriously affected are the northern, western and southern inland parts of the State - predominantly cereal-growing and sheep-farming areas. However, because livestock numbers at the beginning of 1944 were already at a very high level, the effects of the drought will be noticed much sooner in the disastrously poor cereal crops than in the trend of meat production. But meat production must suffer to some extent during 1945, inasmuch as there will be little feed, and no reserves, to carry animals through the year.

### Dairy Products.

The outlook for dairying at the beginning of the summer was quite good. During the last few months, however, dry conditions have spread their influence to the coastal districts and this has caused a serious setback to production of butter and milk. Production of butter for November was 3,650 tons, which is 136 tons lower than for the previous month. The output for the first five months of 1944-45 was only 12,303 tons, compared with 14,134 tons for the same period of 1943-44; the pre-war average for these five months was just under 16,000 tons. Good rains during December might have saved the situation, but these did not eventuate. In the Milk Zone, conditions have deteriorated badly: Pastures have dried off, water supplies have dwindled, and the growth of fodder crops has been brought to a standstill. Supplies of milk have already been below requirements, and rationing will have to be introduced quite early in the season this year.

### Cereals.

The wheat harvest is expected to yield between 17 and 18 million bushels of grain. In northern districts, the yields