

HERD RECORDING IN SOUTH AUSTRALIA.

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Herd recording in South Australia has been under the control of the Minister of Agriculture since its inception.

The Department of Agriculture has been responsible for the keeping and processing of all production records, and the supervision of grade herd testing. The official testing of registered stud dairy cattle was the sole responsibility of the Department until 1954, when the grade and official systems were combined.

From 1920 to 1924, the individual grade herd testing associations were responsible for running their own association under rules set out by the Minister.

In 1924, the Advisory Committee for the Improvement of Dairying became responsible for recommendations to the Minister for changes to the rules governing herd testing and the financing of associations from the Dairy Cattle Trust Fund. In 1954, they also became responsible for recommendations regarding the Rules governing Official testing.

The first regular Regional Conferences on Herd Recording were held in April and May, 1969, and the first State Conference on Herd Recording was held on July 29th, 1969.

From these Conferences, and later ones, resolutions were forwarded to the Advisory Committee to discuss and to make recommendations to the Minister of Agriculture for improvements to the herd recording system.

This has allowed members of the herd recording movement to act on a State wide basis rather than as individual members or associations.

*Referenced in article on herd improvement*

## EARLY HISTORY - GENERAL

Most of the early efforts to establish herd recording during the years 1913 to 1920 would appear to be the result of the efforts and enthusiasm of Mr. P.H. Suter who was the Government Dairy Expert.

Mr. Suter during these years constantly advocated the production testing of dairy cows in articles in the Journal of Agriculture and from the 1915 report to the Director of Agriculture he did the same at Agricultural Bureau meetings.

It would seem that the offer by the Department of Agriculture, in January 1916, to test owners samples was also the result of his work.

The first Official testing was done under the supervision of Mr. Suter, who published the results of the 1913-1914 tests of the herd of Mr. H.C. Toppin of Plympton, in the May 1915 Journal of Agriculture.

From 1918 to 1920 the Advisory Board of Agriculture, Agricultural Bureau Congress and the State Advisory Council of Science and Industry all strongly advocated that the Government give financial assistance to encourage the formation of herd testing associations.

In May 1920 such an offer was made and the first association commenced operations in October that year.

The first record of herd recording is the official testing of the herd of Mr. H.C. Toppin of Plympton commencing in December 1913.

The first association for grade testing was the River Murray Herd Testing Association which commenced operations in October 1920.

Official testing of stud herds was carried out as a separate system from Grade testing until April 1954 when the two systems were combined.

### Major Dates in Herd Recording.

December, 1913	First Official Testing commenced.
January, 1916	Departmental offer to test owner's samples.
May, 1920	Offer of Government assistance to form herd Testing Associations.
October, 1920	First association commenced - River Murray Assoc.
December, 1921	Dairy Cattle Improvement Act assented to.
June, 1922	First meeting of the Advisory Committee for the Improvement of Dairying.
November, 1924	Assistance to herd testing associations transferred to the Advisory Committee. Payment from the Dairy Cattle Fund instead of Government.

1926/27	Levies on cows first paid into the Dairy Cattle Fund and first Commonwealth Subsidy received. Association prizes discontinued.
June, 1940	All grade testing on a bi-monthly basis. Financial and labour problems.
March, 1946	Monthly grade testing resumed.
July, 1947	Period of calculations for grade testing reduced, from 319 to 273 days to obtain Commonwealth assistance.
October, 1947	First increase in recorders wages since 1920.
February, 1948	Grade testing changed from separate p.m. and a.m. butterfat tests to daily composite sample.
1950	Mr. H.H. Shillabeer retired after 21 years service on the Advisory Committee.
July, 1950	Relieving recorder recommended.
December, 1950	Holidays for recorders recommended.
April, 1954	Grade and Official testing combined - Regular Check tests for official herds. Recording year for all associations to commence in April.
	Period of calculations of production raised to 300 days for both systems.
	Power Samas punch cards first used - mechanical recording of all figures.
October, 1954	Mr. L. Cowan retired after 32 years service on the Advisory Committee.
	Major change in the composition of the Advisory Committee.
November, 1954	First major review of recorders wages and conditions.
1956	Herd size changed from 60 to 70 cows.
	Female herd recorders approved at 75% of male rate.
	Tattooing of grade heifer calves introduced.
1965/66	Bi-monthly testing became available.
April, 1966	Records change from Power Samas to computer.
1969	Regional and State Conferences on herd recording held. State Conference asks to nominate a representative to the Advisory Committee - granted.
1969/70	Trial of milk meters in Ambleside Association. Associations commenced using meters during the 1970/71 year.
1971/72	All associations supplied with meters.
	Commonwealth subsidy \$20,000 to be cut out over 4 years - first reduction June 1972.
January, 1973	First female recorder commenced duty on full pay.

September, 1975

Herd recording programme changed for different computer. Introduction of metric measurements and the test interval method of calculation.

### THE ADVISORY COMMITTEE FOR THE IMPROVEMENT OF DAIRYING.

The Advisory Committee for the Improvement of Dairying is a Committee appointed by the Minister of Agriculture to advise him on aspects to improve the dairy industry in South Australia. The Committee held its first meeting in the Office of the Director of Agriculture on June 20th, 1922.

Members were:

Professor A.J. Perkins - Director of Agriculture - Chairman  
Mr. W.S. Kelly - representing the Advisory Board of Agriculture  
Mr. L.T. Cowan, representing the Royal Agricultural Society  
Mr. W.J. Colebatch, Principal, Roseworthy Agricultural College  
Mr. P.H. Suter, Dairy Expert, Agriculture Department  
Mr. P.D. Jeffery, Secretary, pro tem.

The composition remained similar until 1954. Members who retired were replaced except Mr. Colebatch who was not replaced. In October 1954, the Committee recommended to the Minister of Agriculture that the composition of the Committee be changed to -

Director of Agriculture  
Chief Adviser in Animal Husbandry  
Chief Dairy Instructor  
2 nominees from the United Stud Dairy Cattle Breeders Association  
3 dairymen's nominees from the South East, Murray Swamps and Adelaide Hills.

In 1968, the United Farmers and Graziers Association of South Australia obtained permission to nominate names for a further member. In 1969, the herd recording movement through the State Conference, obtained permission to nominate names. From 1969, the Committee has consisted of 9 members as the position of Chief of the Division of Animal Industry was dispensed with and the vacancy on the Committee has not been filled.

Four members who served long periods on the Advisory Committee were -

Mr. L.J. Cowan from 1922 to 1954 - 32 years service.  
Mr. H.H. Shillabeer from 1929 to 1951 - 21 years service.  
Mr. W. Craton from 1950 to 1966 - 16 years service.  
Mr. B.H. Bashan from 1954 to 1969 - 15 years service.

At the first meeting of the Advisory Committee, the Chairman briefly outlined the duties of the Committee which were, he said, to decide -

- a. How money collected under the Dairy Cattle Improvement Act should be spent.
- b. The conditions under which proposed sales of bulls were to be carried out.

The proposals made by a special sub-committee on "Improvements of Livestock", called together by the Governor prior to the drafting of the Dairy Cattle Improvement Act, were then read out. These were -

#### REPORT OF SUB-COMMITTEE ON IMPROVEMENT OF LIVESTOCK.

Your Sub-Committee has held three meetings, at the last of which representatives of the following Livestock Associations were present:

The Friesian Cattle Club of South Australia  
 South Australian Wholesale Milk Producers Association  
 Royal Agricultural and Horticultural Society  
 Stock Owners Association  
 Adelaide and Suburban Dairymen's Association  
 The Australasian Jersey Herd Society.

The need for the improvement of our Dairy Cattle is too obvious to require discussion. The Sub-Committee recognises that improvement must come through the use of pure bred bulls of approved milking strains, and that every effort should be made to discourage the use of mongrel bulls and to check bulls of this description being allowed to run at large as is the case in many districts of the State.

A knowledge of the milk producing records of their cows will induce the majority of dairymen to make every effort to breed only from the best and to improve their stock by the use of bulls from tested milking strains. For this reason the Sub-Committee recommends that every effort should be made to encourage herd testing under official supervision. The Sub-Committee, with the support of the representatives of the Livestock Association previously referred to, recommends that the Government be asked to introduce legislation to provide for:-

- (a) The registration of all bulls of nine months of age and over. An annual fee of ten shillings is suggested. This will not only discourage the keeping of mongrel bulls but will provide the necessary funds to enable Recommendation No. 3 to be given effect at little cost to the public fund.
- (b) That an annual sale or sales of pure bred dairy bulls be held under the auspices of the Minister of Agriculture.
- (c) That with a view to encouraging herd testing and the use of bulls of tested milking strains the Government should grant a subsidy on the cost of such bulls purchased by breeders who are prepared to place the bulls at the service of the owners of other dairy cows.

Your Sub-Committee submits the following suggestions as the basis of the scheme, full details of which would require to be settled by a Departmental Committee:-

#### I. REGISTRATION OF BULLS.

- (1) All bulls over nine months of age inside of Hundreds must be registered at an annual fee of ten shillings.

#### II. SALES OF PURE BRED DAIRY BULLS.

- (1) There should be annual sales of pure bred dairy bulls at such centres as the demand justifies, the bulls to be offered at such sales must comply with the following conditions:-
  - (a) The bull shall be pure bred or eligible as foundation stock for Australian Herd Book Entry.
  - (b) No bull shall be subsidised which is not the progeny of officially tested stock with satisfactory performance records according to standards to be fixed.
  - (c) The bull must be well grown and true to type.
  - (d) The bull must have passed the Official Tuberculin Test.

#### III. SUBSIDY TO PURCHASERS OF APPROVED DAIRY BULLS.

Subject to the following conditions the Government shall offer to approved purchasers of such bulls, provided for in II (1.b.), a bonus of 25% of the purchase price at the end of the first year, provided that such bonus does not exceed £25, and 12½% of the purchase price at the end of each of the two subsequent years, provided that such payment does not exceed £12/10/- per year.

- (a) The application for bonus to be made on forms supplied at the sale and endorsed by the auctioneer and Government representative.
- (b) That the owner allows the bull to be available for other owners of cows for service at a fee not exceeding 10/- per cow. The owner shall in the case of bulls under two years of age at the time of sale be prepared to accept up to 20 cows during the first year and the bull must have served up to 10 cows for the same year for which the bonus is paid and for bulls of greater age he shall be prepared to accept up to 40 cows for the first and subsequent years and must have served up to 20 cows for the first and subsequent years.
- (c) The owner to supply to Department of Agriculture a list of names of owners of cows and dates of service.
- (d) The bulls shall be kept under conditions satisfactory to the Department of Agriculture.
- (e) The owner of the bull shall have the right to refuse to allow cows, which he may have reason to believe to be suffering from contagious disease, to be served by the bull; this to be subject to appeal to the Department of Agriculture. The purchaser shall take precautions against the spread of contagious abortion by regularly disinfecting the bull.

The Dairy Cattle Improvement Act was assented to on the 7th December, 1921 and provided for the licensing of bulls. The licence fees were paid into the Dairy Cattle Trust Fund which was set up under the Act.

The Dairy Cattle Fund was to be used for improving the standard of dairy cattle, promoting and encouraging the dairy industry of the State. One of the first uses was the provision of a subsidy for the purchase of bulls and early meetings of the Advisory Committee were mainly concerned with conditions for the sale of subsidy bulls and the standards of production for the dams of these bulls.

In 1924, the Committee was made responsible for the assistance to herd testing societies (5 during 1924), such money to come from the Dairy Cattle Fund.

In 1926, levies were first paid in to the Dairy Cattle Fund and the Advisory Committee had full control of the financial side of grade herd recording.

The Committee also became responsible for recommendations to the Minister of Agriculture for the rules and conditions governing herd recording and the first set of rules recommended by the Committee were drawn up in June 1926.



## GRADE HERD TESTING - EARLY HISTORY

The first offer of grade herd testing was made by the Department of Agriculture in the January 1916 Journal of Agriculture.

The Department undertook to carry out all work including receiving samples, testing these samples, keeping full records for the whole period of the lactation and supplying each owner with a monthly cow record sheet for his information.

A charge of 30¢ per cow was to be made, for each cow put under test, to cover testing, cartage, stamps, stationery, etc.

Owners desiring to have their cows tested under this arrangement to agree to the following conditions.

1. To weigh the milk from each cow, morning and evening for two consecutive days each month for the whole lactation.
2. Keep a sample (proportionate to the supply) from each milking of these two days.
3. Forward such samples to the Department within two days after taking.
4. Pay freight.
5. Purchase box and bottles necessary (approx. cost 6-10 cows \$1.00, 11-20 cows \$1.25).
6. Forward, with samples, weights of milk given by each cow.

There is no record of the response to this offer.

On 14th August 1918 the Advisory Board of Agriculture made recommendations to the Government on the dairying industry including:

"It was decided on a motion by Professor Perkins, seconded by Mr. C.J. Tuckwell, that with a view to encouraging the formation of herd testing societies the Government be recommended to offer special prizes of say \$200 (£100) for any herds, forming part of a herd testing society the total yearly output per cow of which exceeded a certain standard to be fixed from time to time by the Department of Agriculture." (Journal of Agriculture, Sept. 1918.)

On 11th September 1919 the Advisory Board of Agriculture decided that the attention of the Minister of Agriculture should be directed to the fact that up to the present the Board had received no reply to its communication covering a report and suggestions relating to the dairying industry.

On 9th October, 1919, a resolution of the 30th Annual Congress of Agricultural Bureaux was forwarded to the Minister of Agriculture with the strong support of the Board.

Points were:

- "b. That the Government appoint dairy instructors to travel at regular intervals to instruct and advise dairymen in a way similar to the present horticultural experts.



- d. That in the opinion of this Congress more Government aid should be given to the dairying industry and that the improvement of dairy herds should be the first move." (Journal of Agriculture, Nov. 1919.)

The following report appeared in the Journal of Agriculture January 1920.

#### Herd Testing

At a meeting of the State Advisory Council of Science and Industry, held on December 11th, the following report, on the values of herd testing, was presented by the Agricultural Committee. It was pointed out that herd-testing societies in various parts of the world carried out work of this character with marked results in raising the standard of dairy cattle.

1. The committee is of opinion that the output of milk and butter in the State could be considerably increased if herd testing were generally adopted throughout the State.
2. A few herds - chiefly those of breeders of pedigree stock - are at present being tested under Government supervision.
3. In the committee's opinion, however, the practice is not likely to become general, except under the stimulus of the formation of district herd testing societies.
4. It is recognised that the isolation of many dairymen will render the formation of such societies very difficult in certain districts, nevertheless, the committee believes that efforts should be made towards the establishment of such societies in the more densely settled areas, such as Mount Gambier, Glencoe, River Murray, &c., and that subsequently the results achieved will probably influence the more sparsely populated districts in a similar direction. The committee believes that the numerous country branches of the Agricultural Bureau could be used to great advantage as centres from which these societies could be formed.
5. The advantages of society tests over individual tests are mainly:
  - (a) Local supervision of results;
  - (b) Emulation between neighboring and associated dairymen;
  - (c) Better guarantee of continuity of results;
  - (d) Elimination of useless cows from the district, and prevention of local exchange of such cows.
6. It is recommended that the Government offer the following inducements towards the formation of such societies:
  - (a) Subsidise £1 for £1 the expenses of such societies, on the understanding that such subsidy shall not exceed £200 per annum per society.
  - (b) Offer yearly special prizes for herds forming part of a herd-testing society on the basis of butter fat produced in the course of a year.

It is recognised that as our herds improve in quality the standards adopted will have to be varied. For present purposes, after consultation with departmental officers, the committee recommends annual prizes for the following purposes:

In each herd-testing society a first herd prize of £50, a second herd prize of £25, and a third herd prize of £10, provided in each case the herd attains an average output for

the year of 300 lbs. or more of butterfat, provided also in each case that if the average output of butterfat of the herd for the year exceeds 350 lbs. the prize is to be increased by 50 per cent, and provided that in each case if the average output of butterfat of the herd for the year exceeds 400 lbs. the prize is to be doubled. A champion prize for South Australia of £100 provided that the average output of butterfat of the winning herd for the year is 400 lbs. or over.

The prizes should be allotted at the end of each season, and the standards, if necessary, reconsidered at the beginning of each new season.

7. It is assumed that ultimately each society will have its own paid tester; it is suggested, however, that at the outset it might be advisable to make the tester a Government official, working under instructions from the Department of Agriculture. Under the latter arrangement no subsidy would be paid to the society, whilst the society would pay the Government half the estimated annual cost of work. As soon, however, as the department is satisfied that the society is able to take charge of testing operations the State should undertake to pay £1 for £1 for a period of five years, dating from the inception of the society, provided that the total amount of the subsidy shall not exceed £200 per annum per society.
8. The committee is of opinion that if these proposals are adopted and vigorously pushed, they will do much towards improving the dairy output of the State.

After some discussion, the recommendations of the committee were endorsed by the council, and the matter has now been forwarded to the Government for consideration.

In the May 1920 issue of the Journal of Agriculture the Government gave details of assistance and Rules and conditions for forming herd testing societies.

#### Regulations Governing the Award of Government Subsidies and Prizes to Herd Testing Societies.

- I With a view to the systematic improvement of dairy returns in the State, the Government is offering special inducements towards the formation of local Herd Testing Societies on the line indicated below:
  - (a) A pound for pound subsidy of the expenses of such societies for a period of not more than three years, on the understanding that such subsidy shall not exceed £200 per annum per society.
  - (b) The offer of special yearly prizes to herds forming part of approved Herd Testing Societies on the basis of butter fat produced during the course of the year, and on the following lines:  
In each Herd Testing Society a first herd prize of £50, a second herd prize of £25, and a third herd prize of £10, provided in each case that the herd attains an average output for the year of 300 lbs. or more of butterfat; provided also, in each case, that if the average output of butterfat of the herd for each year exceeds 350 lbs. the prize to be increased by 50 per cent, and provided that in each

case if the average output of butterfat of the herd for the year exceeds 400 lbs., the prize is to be doubled.

A champion prize for South Australia of £100, open to members of Herd Testing Societies only, provided that the average output of butterfat of the winning herd for the year is 400 lbs. or over.

The above butterfat standards are subject to revision from time to time at the Minister's option.

- II Herd Testing Societies wishing to take advantage of the subsidy and prizes indicated above must conform to general conditions summarised below:
- (1) The society must notify the Director of Agriculture of its intention to apply for the subsidy and compete for the prizes not less than one month prior to the date when its year of operations opens.
  - (2) The society must supply the Director with a copy of its rules, which should, in the main conform to those suggested here, together with a list of its members and the number of cows owned by each one of them at the time.
  - (3) Deaths, sales, new purchases, or cows on their first calves, must also be notified from time to time with the exact dates of same.
  - (4) The society shall consist of not less than 10 members, each one of whom shall own not less than 10 cows in milk.
  - (5) It shall be a disqualifying misdemeanor for a member to neglect to register any cow in his possession that has dropped her first calf.
  - (6) No local residents owning not less than 10 cows in milk shall be excluded from the society, except for moral turpitude or other good reason which may be allowed by the Minister.
  - (7) It shall be compulsory upon all members of the society to keep milk records of every cow in their possession. The milk of two consecutive milkings of each cow must be weighed separately evening and morning, not less frequently than once a week during the whole period of lactation, and on the same days in each week.
  - (8) The milk shall be weighed on a spring balance with a dial of a type to be approved of by an officer of the Department of Agriculture.
  - (9) The milk records shall be kept on special forms to be supplied by the Department of Agriculture.
  - (10) The society shall appoint a recorder, whose main duty it will be to check the milk records of members. The recorder shall not be a member of the society, nor have any financial interest in the business of any member of the society. The recorder's appointment shall be subject to the approval of the Department of Agriculture, and his work subject to the Department's supervision.
  - (11) The recorder must be allowed at any time free access to the herds and records of members, and have the right to mark every cow of a member with an identi-

fyng mark and number.

- (12) The society shall determine the date from which its year of operations shall commence, and from that date the milk yield of every cow owned by members shall be recorded by its owner for a complete calendar year, or for such portion of the year as it continues in a member's possession. The milk yielded six weeks prior to calving and during the first four days after calving must not be included in this record.
- (13) Registered cows of members will be expected to calve at normal intervals; failure to do so may lead to disqualification of individuals so far as prizes are concerned, and, if frequent, loss of subsidy on the part of the society concerned.
- (14) The society must furnish the Department of Agriculture with certified copies of the yearly milk yields of every cow belonging to its members not later than four weeks after the closure of the society's year. Special forms for the purpose will be supplied by the Department.
- (15) At the end of each quarter the society shall supply the Director of Agriculture with a detailed certified copy of expenditure incurred for that quarter, and as soon as he is satisfied with the statement submitted, the Director shall authorise payment to the society of a sum equal to one-half of the expenditure incurred, provided that not more than £200 per annum in the way of subsidy shall be paid in this connection, and provided the society has complied with all rules dealing with the matter.
- (16) The methods of keeping the society's accounts shall be determined in agreement with the Department of Agriculture, and Departmental officers shall at all convenient times have access to such accounts for the purposes of inspection and verification.
- (17) At the end of each year the various milk records and butterfat percentages will be carefully compared by officers of the Department of Agriculture, and in due course the Director will make recommendation to the Minister as to the allocation of prizes.
- (18) The Minister of Agriculture reserves the right to refuse, suspend, or cancel any claim to subsidies or prizes under these regulations, and his decision in the matter shall be final.
- (19) The decision of the Minister of Agriculture as to the awarding of the prizes and the payment of the subsidies, and as to all matters in connection therewith shall be final.

## Suggested General Rules for Herd Testing Societies

### Name and Constitution

1. The society shall be called the ..... Herd Testing Society, and shall consist of original members determining to form this society and of members elected subsequently under these rules.

### Objects

2. The objects of the society are the improvement of the standard of local dairy cattle and of general feeding practices. Towards these ends members will be expected to keep regular and careful records of:
  - (a) Individual milk yields;
  - (b) General quality of milk; and
  - (c) Food consumed by cows.

### Management

3. The society's affairs shall be administered by a committee of management, consisting of not less than three members elected at the annual general meeting, and of such officers as may be appointed from time to time. Special general meetings shall be called to fill committee vacancies arising from death or a resignation.

### General Meetings

4. An annual general meeting shall be held at the beginning of each year of the society's operations:
  - (a) To receive the committee's report and statement of accounts,
  - (b) To elect officers and committee of management, and
  - (c) To transact general business.
 Special general meetings may be called at any time during the course of the year by the committee, or at the signed request of not less than 5 members.

### Subscriptions

5. Members shall pay annually such subscriptions as may be determined by the society. In addition, they shall pay half-yearly such sums as may be needed to defray the expenses of the society, individual payments being determined by the committee proportionally to the number of cows owned by individuals at the time of apportionment.

### Duties of Members

6. Members shall weigh periodically the milk of each cow in their possession on such days and at such intervals as the committee may direct, and supply the committee with a signed annual record of all such weighings. They shall also afford all facilities for the weighing and sampling of milk and examination of records by officers of the Department of Agriculture, or by officers appointed by committee for the purpose, and for the marking of their cows by the society's officers for purposes of identification.

### Resignation

7. Resignation of members shall take effect only at the end of the year of the society's operations. Resigning members shall have no claim to the assets of the society.

### Expulsion of Members

8. On the recommendation of the committee, it shall be competent for a general meeting to expel a member guilty of unbecoming conduct, or one who, notwithstanding repeated requests, has failed to meet his liabilities to the society.



Addition, Repeal, or Amendment of Rules

9. On due notice being given, any rule may be amended or repealed, or any new rule may be adopted at a general meeting, provided always that such amendment, repeal, or addition must be confirmed at a subsequent general meeting.

Closing Society

10. No dividend or bonus shall be paid to members; but in the event of the society ceasing operations, any surplus of assets over liabilities shall be divided between existing members in such a manner as a general meeting shall determine.

General Duties of Recorders

1. Whenever circumstances permit of it, recorders should be asked to assume responsibility for the secretarial work of the society. In this capacity it would be their business to call committee and general meetings, and to be responsible for general correspondence, and the keeping of records and accounts.
2. It will be the duty of recorders to mark each cow in the ear with a distinctive identifying mark.
3. Not less than once in each six weeks and without prior notification to owners, recorders shall inspect each herd under their supervision during two consecutive milkings, morning and evening, or evening and morning, whichever is most convenient.
4. During the course of such visits of inspection recorders shall see each cow milked and the milk weighed, and shall compare these results with the most recent ones previously recorded by the owner.
5. On forms supplied by the Department of Agriculture and to be returned to the Department of Agriculture when completed, recorders shall indicate the registration number of each cow in the herd, her name (if any), her description, her age, her breeding, the date of last calving, expected date of next calving, the weights of milk noted at each milking by the recorders, the weights of milk previously recorded by the owners, and any other information that might be required by the Department of Agriculture or the committee of management.
6. At each visit of inspection recorders shall collect samples of milk from all cows in the herd, from both morning and evening milkings, and forward the same at the society's expense to the Department of Agriculture for butterfat determination. The Department will supply detailed instructions as to how these samples are to be collected and handled.
7. At each visit of inspection recorders shall, on forms provided for the purpose, indicate nature and quantities of rations and foodstuffs fed to cows, and the general condition and health of the herd.
8. Should recorders have good reason to believe that from ignorance, carelessness, fraudulent intent, or any other reason, the milk records of individual owners are not being kept in a proper manner, they shall forthwith draw the attention of owners to the facts, and subsequently draw up a report in duplicate on the subject, one copy

of which shall be submitted to the committee of management, of the society, and the other forwarded to the Director of Agriculture.

9. At the end of each year of the society's operations, recorders shall check additions and calculations and countersign the returns of owners before submitting them to the committee of management and the Department of Agriculture.

In October 1920 the first herd testing association, the River Murray herd testing association, commenced operations. A report in the December Journal of Agriculture states that the Murray Bridge Agricultural Bureau brought about the formation of this association.

The first recorder was Mr. F.O.H. Martin who held a diploma of the Roseworthy Agricultural College.

The main problem during the first year arose from the rule that all cows in the herd must be registered and tested, to obtain overall herd improvement and also because owners were competing for cash prizes.

This was complicated by some members being dealers and only keeping cows for 1 or 2 months. This rule was amended in 1921 to enforce registration if the animal had been in the owner's possession for one month or more.

Following is a copy of the report of the first year's operation of the association.

Other early associations were:  
 Mt. Gambier and District in August 1922  
 Glencoe in October 1923  
 Milang in May 1924  
 Narrung in October 1924.



## SUMMARY OF RULES UNDER WHICH THE TESTS HAVE BEEN CONDUCTED.

1. Every cow past her first calf in possession of a member of the Association is registered, and so long as she continues in his possession, whether in milk or dry, whether in health or in sickness, she is taken into account in determining the mean output per cow of the herd. Thus, suppose a dairyman to have 10 registered cows, but only eight in milk, yielding a monthly total of 620 galls., the mean yield for the month would be 62 galls.
2. Should a member decide to fatten and sell a registered cow which has proved unsatisfactory, on notification to the Association Recorder he is given one month's grace to do so; this period may be extended to three months on good cause being shown.
3. Members weigh morning's and evening's milk of each cow at least once a week.
4. The Recorder, who is a paid servant of the Association, weighs morning's and evening's milk of each cow in the Association once a month, and determines its percentage of butter fat.
5. Milk drawn six weeks prior to calving and four days after calving is not credited to cows concerned; and in one calendar year one cow is never credited with more than 319 days' milk.
6. The Recorder forwards each month to the Department of Agriculture all the above results, together with full details concerning individual herds, including feeding methods, calvings, sales, deaths, etc. It is upon these data that the final results are determined.

## MEAN 1920-21 OUTPUT OF ALL HERDS COMPRISED IN THE ASSOCIATION.

Both the number of herds and the number of cows in each herd have varied from time to time during the course of the year. Between October 1st, 1920, and September 30th, 1921, the Association consisted of 18 herds. Of these, however, 13 only were continuously under test for the full period of 12 months, the remaining five being connected with the Association for fractions of the year only. Similarly in the 13 continuously tested herds, not all registered cows were present in the herds for the full period of 12 months. From time to time some were sold, some died; others again were purchased, whilst heifers coming in on their first calves were equivalent to new cows. All these variations have had to be taken into consideration in the final calculations. In this connection the variations in the continuously tested herds may be set out as follows:-

Present, 1/10/20 .....	246 head	
Purchases .....	24 head	
Heifers on first calf .....	22 head	
Sales .....		33 head
Deaths .....		2 head
Total .....	292 head	
Less reductions .....	35 head	
Present, 30/9/21 .....	257 head	

Eighteen cows calved twice between October 1st, 1920 and September 30th, 1921. Complete details concerning the combined aggregate output of all the herds in the Association have been summarised in Table I.

Attention should first be drawn to the general output of all herds comprised within the Association over a period of 12 months. This was represented by 209,377.7galls. of milk and 91,238.02lbs. of butter fat from an average of 305.52 ordinary dairy cattle. If these figures are reduced to individual mean output, we get 685.32galls. of milk and 298.63lbs. of butter fat per annum. Or, if we adopt an estimate common among farmers, we have an approximate mean output of 6lbs. 10ozs. of butter per week per cow throughout the year.

This general mean output from 18 herds compares very favorably with the most recent results issued by the Commonwealth Statistician concerning State general mean outputs. These data have been summarised below in Table II.

Table II. - Showing Mean Milk Yields per Cow. 1914-18.

	1914.	1915.	1916.	1917.	1918.	Means.
	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.
Victoria .....	306	268	397	391	368	346
South Australia ...	223	261	363	353	323	305
New South Wales ...	305	243	304	326	277	291
Queensland .....	257	194	256	284	224	243
Tasmania .....	209	209	267	266	256	241
Western Australia .	190	215	220	210	213	210
Commonwealth .....	287	240	320	333	293	264

It is further of interest to note that according to the report of the Central Council of Milk Recording Societies of Great Britain, representing 30 affiliated societies, 46,593 cows yielded between October 1st, 1919, and September 30th, 1920, an aggregate output of 22,694,106.35galls. of milk; representing a mean output of 487.07galls. per cow, which is considerably below the mean output of the River Murray Herd Testing Association.

As might have been expected, milk production during the course of the year has varied more or less from month to month. These variations are influenced mainly by feeding facilities available at the time, although no doubt the usual exposure to rough weather or extreme heat will not have been without effect. The months of September (62.54galls.), October (63.93galls.) and November (60.01galls.) would appear to have been the best milking months; whilst February (49.84galls.), March (53.03galls.), and June (51.92galls.) were the worst. More enlightened feeding practices and reasonably adequate shelter would no doubt tend to improve milk yields during these months.

## RETURNS FROM INDIVIDUAL HERDS.

We may now pass on to the returns of individual herds. Importance attaches to the latter in view of the award of special Government prizes to the three best performers. Details concerning them have been shown below in Table III.

In the first place it should be noted that out of the 13 herds that completed the 12 months' test practically 12 of them showed a mean output per cow of 600 galls. of milk or over. Again, out of the same 13 herds, five yielded over 300 lbs. of butter fat per cow, which renders them eligible for Government prizes, and one over 350 lbs. These general results are highly creditable to the society in its first year of operations, and there is every reason to believe that they will be improved upon in future years.

GRADE HERD TESTING - FINANCIAL

The first association started in October 1920 after an offer by the Government in May 1920 to assist the formation of herd testing societies.

This was:-

A £1 for £1 subsidy of expenses for 3 years - not to exceed £200 per annum.

Yearly prizes in each association provided a herd has been a member for the full year.

First herd	£50	}	If the average output per cow is 300 lbs. of butterfat or over.
Second herd	£25		
Third herd	£10		

If over 350 lbs. butterfat average plus 50%.

If over 400 lbs. butterfat average prize doubled.

Champion prize for South Australia of £100 open to members of herd testing societies provided the average output of butterfat is over 400 lbs.

At the meeting on 9th October, 1923, the River Murray herd testing association requested assistance from the Dairy Cattle Fund as the usual 3 year's Government subsidy had ceased.

The principle of assisting herd testing associations was favored by the Committee and it was agreed that assistance, to be decided how much, would be granted.

As general policy the Committee approved of subsidizing all associations after the third year, but each case must receive separate consideration.

The meeting on 9th January, 1924, was informed that the Minister of Agriculture agreed to the principle of assisting associations after 3 years operation.

At the meeting on 25th November, 1924, the Minister directed the transfer of funds to the Dairy Cattle Fund from the "Encouragement in the formation of herd testing societies A/c." and all amounts which would be debits against the latter A/c. instead be charged to the Dairy Cattle Fund.

In the year 1924/25 the Advisory Committee made the first subsidies to herd testing associations.

In 1926/27 the levies were first paid into the Dairy Cattle Fund and the first Commonwealth subsidy received. The financial records of associations were kept by the Department of Agriculture, which acted for the Advisory Committee, after 1926.

The original offer from the Commonwealth was of a subsidy of £70 to £100 per annum for each association. Correspondence in the Advisory Committee minutes of 23/2/45 suggests that from 1927 to 1931 the Commonwealth subsidy was on the basis  $\frac{1}{3}$  Commonwealth,  $\frac{1}{3}$  State Government,  $\frac{1}{3}$  herd owners. The levy per cow from 1926 to July 1935 was 3/6.

## METHODS AND PERIODS OF CALCULATIONS OF PRODUCTION.

The first rules and conditions of herd testing were issued in May 1920 - Bulletin 137. No major change occurred until 1940 when bimonthly testing was introduced.

Bulletin 137  
May 1920

All cows in the herd to be registered for testing. Members to weigh and record milk weights from two consecutive milkings at least once a week and on the same day each week.

### Recorders to:

Mark each cow in the ear with a distinctive mark and to register such markings and other details of all cows in the herd.

Visits not less than once in 6 weeks for 2 consecutive milkings.

Note milk weights from each cow at both p.m. and a.m. milking.

Take p.m. and a.m. samples and forward these samples to the Department of Agriculture for butterfat testing.

Yields calculated for a complete calendar year for the date the herd testing society commences operations.

Production based on the number of days in the month a cow was actually producing. Weights for 4 days after, and 6 weeks prior to calving not included.

Only production on the farm to be credited to purchased cows.

### Amendments

1921 Recorders to visit not less than once in 6 weeks, but 12 times a calendar year.  
Recorders to test samples.  
No record to include more than 319 days in one calendar year.  
First 4 days after calving excluded.

1924 Change from 319 days in calendar year to 319 days in one lactation.

Bulletin 199 - 1926. Reissued 1934, 1936, 1937 and 1938.

Owner weighing deleted.

Purchased cows record continued but previous production not credited to new owner.

1940

Bimonthly testing replaced monthly testing.

Visits not less than once in the period between 50 days and 70 days after the last test.

Year divided into 60 day periods. First test will represent production from the 5th day after calving to the day prior to the next test inclusive.

Succeeding tests will represent the day of test and the succeeding 59 days (60 days periods).

Production in each lactation still to be calculated excluding the first 4 days after calving to a maximum of 319 days.

1946  
(January)

Monthly testing resumed.

Visits at intervals of not less than 25 days nor more than 35 days during a lactation period of 273 days and 12 times in a calendar year for two consecutive milkings.

Records not to include the first 4 days after calving up to a maximum of 273 days (Advisory Committee approved rule in 1947).

1948

Proportional composite samples used to test for butterfat instead of separate p.m. and a.m. samples.

Visits to be nights milking following mornings milking where possible.

1954

Weights of p.m. and a.m. milk each to be recorded in pounds and tenths of a pound. Total daily milk to be taken to nearest pound. Lactation period to be 300 days calculated from and including the fifth day after calving. Lactation period will comprise 10 sub-periods each of 30 days.

1965

Bi-monthly testing introduced as an option. Calculation of production for months when no testing was carried out was based on assessment factors. The assessment factors had been calculated from a study of sub-period production over a number of years.

1969

The averaging of abnormal production ceased except for special circumstances and production could be accepted where a herd was tested outside prescribed limits.

1970

The introduction of milk meters brought measurement of milk by measuring flask instead of weighing by scales and bucket.

1975

The method of measuring milk by weight (pounds) was changed to measurement by volume (litres) at the same time as the units of measurement changed to metric. The calculation of production was changed to the test interval method where the number of days from calving to first test, between tests and from last test to termination is used in place of 30 day calculations for each test.