Dairy herd recording

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Fifty-five per cent or 320 of Western Australia's dairy farmers participate in dairy herd recording, the highest percentage of dairy farmers who use herd recording in any Australian State.

Herd recording provides the dairy farmer with an accurate measure and record of individual cow and herd performance. Information on milk, fat and protein production, the level of mastitis infection and breeding values assists the dairy farmer with his herd management and selection of cows. The herd recording facility is provided by the Herd Improvement Service and the fees are based on an annual herd fee and a lactation fee for each cow.

Higher production

Western Australia’s average milk production for 1985-86 was 3 870 litres per cow lactation. The average production for non-recorded cows was 3 120 litres while cows that were herd recorded in that year averaged 4 800 litres, a difference of more than 1 000 litres. If the average price for milk received by the farmer was 20 cents per litre, herd recorded cows had a gross productive advantage of $200 per cow.

Improved management

Herd recording assists a farmer to improve his herd production efficiency by stimulating greater interest in his herd. This can lead to better feed management, the sowing of improved pastures, improved breeding...
practices, more careful selection of replacement heifers and better rearing and feeding of replacement stock.

**Recording systems**

Seventy-seven per cent of Western Australia's recorded herds are sampled on a monthly basis. The remainder are sampled every alternate month. The herds are recorded by one of two systems.

**Owner sampling.** Ninety-five per cent of farmers who undertake herd recording sample their own herds. On test day milk samples are collected from each cow during both the evening and morning milkings. Farmers are given milk meters and flasks which make the milk collection simple and accurate.

The flasks and meters are delivered to, and collected from, the farmer and placed in an insulated courier truck. They are then returned to the central laboratory at Bunbury, along with individual cow and herd information.

**Recorder sampling.** Five per cent of farmers who herd record have their cows' milk sampled by a professional recorder. The recorder is responsible for placing the milk meters in the dairy and for the collection of milk samples. He forwards the milk samples, together with cow and herd information, to the central laboratory. A higher fee is charged for this service.

**Laboratory analysis**

Upon delivery to the central milk testing laboratory, the morning and evening milk samples for each cow are automatically weighed and the results entered into a computer. The computer converts the sample weight to an equivalent 24 hour milk production yield, in litres.

A composite sub-sample is taken from the morning and evening samples for analysis of milk composition and somatic cell count. The milk analysis determines the fat percentage, the protein percentage and the percentage of total solids. The somatic cell count is an indicator of the level of mastitis in a cow's udder.

**Using the information**

As a result of herd recording, the farmer receives a wide range of cow and herd information on a monthly, annual and lactation basis. **Monthly summary.** Farmers receive monthly summaries shortly after the completion of a herd test. The monthly summary provides the following information:

- Individual cow test day production information. Each cow's test day milk yield, fat yield, fat percentage, protein percentage, total solids percentage and somatic cell count are listed. To help the farmer to identify differences in milk production between consecutive test days, the previous test day's milk yield is listed. This test day information can be used to improve herd management.

- Adjustment of feed management. Often fluctuations in milk yield and composition can be corrected by adjusting a cow's diet. The quantity of concentrates and conserved fodder fed can be matched with an individual cow's requirements, based on her production. Expensive concentrates are then used more efficiently.

- Identification of cows to be dried off. Many farmers set production levels below which cows are dried off and removed from the herd. This is particularly important during summer when high levels of costly concentrates are fed to cows.

- Identification of cows with sub-clinical mastitis. These cows can be examined for signs of clinical mastitis. If present, cows can be removed from production and treated during lactation with the correct antibiotic.

- Estimation of the production of milk, fat and protein for the period from calving to the day of recording. Cows are listed in decreasing order of the number of days since calving.

- A production index for milk and fat which enables a more accurate comparison between cows in the herd by adjusting for age, stage of lactation and time of calving. The production index can be used to cull low producing and inefficient cows from the herd.

- A cumulative score of somatic cell counts which shows the level of mastitis infection in a cow for the lactation. If a cow has one or more cell counts above 200,000, she is treated with antibiotic dry cow therapy at the completion of her lactation.

- A summary of the average performance of the herd on the test day. Information on the average performance of herds in the farmer's region and in the State for the previous month is included for comparison. A region includes dairy farms with similar soil types and climatic environment.
Production graphs
Milk production and fat percentage graphs are produced each month. The graphs show a herd's milk production and fat test for the previous 12 months, and compare them with a graph of the production of all herds in a farmer's region. These graphs enable a farmer to indentify his herd's production variation throughout the year and to compare it with production variations of all herds in his region. Calving patterns and feeding management can be adjusted to overcome some of the herd's fluctuations in milk production.

Annual summary
The annual summary presents the productive performance of all cows that have completed a lactation in the previous financial year. The cows are listed in order of descending lactation milk production, within age groups. The annual summary provides the following cow and herd details:
- each cow's age and calving date;
- 300-day lactation milk, fat and protein;
- a production index for milk and fat;
- each cow's sire;
- length of lactation;
- average milk, fat and protein production and lactation length for the herd; and
- calving interval.

The annual summary is a record of the performance of a herd for the year. It is often used to compare the herd's performance with that in other years.

Lactation history
At the completion of a cow's lactation, a lactation history report is produced. This provides the farmer with a summary of all lactations a cow has completed in her lifetime. Milk, fat and protein production details are provided for a lactation of up to 300 days and for the complete lactation, if the cow was milked for longer than 300 days.

A summary of the cow's cumulative somatic cell counts and production indices for all previous lactations is given.

Calving dates and calving intervals are shown. The calving interval is the number of days from the last calving date to the previous calving date. When considered with the lactation length, calving interval can indicate the time a cow was dry. Excessively long dry periods result in production inefficiencies; the ideal calving interval is 365 days.

The lactation history also presents a lifetime production summary and an average milk production figure for every day since that cow first calved. This figure indicates a cow's lifetime production efficiency.

Monthly milk production and somatic cell count figures and breeding details are presented.

Australian Breeding Value report
Australian Breeding Values (ABVs) for dairy cows were first produced in 1984. An ABV for a cow is an estimate of a cow's breeding value and hence an expression of her genetic value for breeding replacement dairy cattle. The ABVs enable a farmer to compare the breeding value of cows within his herd, and with those in other herds throughout Australia.

Farmers who undertake herd recording and who provide cow breeding information receive an annual ABV report. This report, when used in conjunction with other herd recording information, provides an accurate method for selecting future replacement cows for the herd.

□ Virginia Miller edits cow test results while the milk test samples are automatically analysed.