

AN AUTOMATED CENTRAL MILK RECORDING AND REPORTING SYSTEM

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Milk recording systems are under increasing cost pressures which tend to reduce farmer participation in them; and so reduce the effectiveness of breeding programs that use these records. The future adoption and success of dairy herd improvement principles lays with herd improvement systems that optimize the balance between minimum labour cost and maximum accuracy of the data that is used by breeders and geneticists who make decisions affecting the implementation of a breeding program's genetic design.

A first step is the introduction of central testing laboratories with equipment to analyse milk automatically and rapidly for economically important characters. Few laboratories in Australia have taken the logical next steps - electronically capturing results from this equipment, entering other information directly to computer files, and providing same day production reports for dairymen.

The Tasmanian Herd Improvement Organisation (THIO) is operating a milk recording system for 48,000 dairy cows (42% of the total population) based on alternate AM/PM sampling by casual milk samplers who collect pedigree, calving, termination and incidental data; record milk volumes and forward milk samples to a central testing laboratory. In remote areas owner-samplers perform the same tasks.

The system employs a Foss Electric Milko Scan 300 to analyse samples for milkfat and protein and a Fossomatic to count somatic cells; both interfaced directly to a Digital Equipment PDP 11/34 mini computer. Consequently, errors of transcription from instrument to data sheet; and entry from data sheet to computer file are eliminated.

Concurrently labour required for data capture, preparation and input is cut by approximately 66% so increasing record accuracy while minimising data processing labour cost.

Pedigree, calving, termination and incidental information is entered directly to computer files through visual display units, using interactive programs, employing the usual edit routines at herd, cow and sire levels. Simultaneously milk analysis data has been captured automatically from the milk testing instruments so enabling files to be updated progressively. Reports are produced and mailed for farmers whose files have successfully passed edit routines and been updated during the previous half day.

Consequently, the maximum time needed to mail processed results to producers is eight days from sampling and the average is expected to be four or five days. Reports are therefore more current than those obtained under a typical batch data processing system (average Tasmanian turnaround with weekly processing on CSIRO's CYBER 76 was 18 days at low input loads and 35 days at heavy loads).

Farmers benefit directly by making management decisions two weeks earlier than previously - an important consideration in the Tasmanian context where stocking rates are high and pasture management is critical, particularly during the calving season.

Enhanced genetic benefits are seen through increased participation in the breeding program and increased reliability of data generated within the system.

THIO's choices of computer installation, file and program design were made with the expectation that the National Dairy Herd Improvement Scheme will eventually provide advanced procedures to identify superior individuals within the Tasmanian and Australian dairy cattle populations, together with the support needed for their continual refinement.

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