more) sub-period yields at any one time – a vast saving even with the added need for large tables of correction factors. However, it can only make allowance for those factors which have been previously isolated and for which correction factors have been found.

For the small sample provided both methods give good estimates in some cases but not in others. Further work is needed to establish a method which will consistently provide a good 300 day estimate, efficiently and with a minimum number of measurements.

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THE DATA PROCESSING TECHNIQUE FOR DAIRY CATTLE PRODUCTION RECORDING IN VICTORIA

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This paper outlines the data preparation and data processing technique for dairy cow production records in Victoria, in particular:-

(1) Data preparation.

(2) Data processing for monthly reports.

(3) Annual reporting

(4) Data preparation at Herd Improvement Centres.

(5) Outlook for 1979/80.

The 1978/79 dairy cattle production year saw the establishment of the Victorian Dairy Herd Performance Recording Scheme on the State Government Burroughs B7700 computer. This recording scheme has been computerised since 1975/76 and on the transfer to the State computer the system was revised to:

a) make efficient use of a much larger computer; and

b) to implement the calculating of cow production indexes (production of cows expressed as a percentage of herd average production).

1. Data Preparation

Cow production and history information is forwarded to the Department of Agriculture after being produced by a herd recorder or Herd Improvement Centre. The information supplied contains combinations of the following:-

a) Cow history data; cow identification, cow name, birth date, sire, dam, breed, artificial breeding code and registration code.

b) Test day, cow production data; cow identification, milk yield, butterfat %, protein %, calving date, test date, somatic cell count, termination and exclusion codes.

The Department of Agriculture has a data preparation complex comprising an 8 key-station, key-to-disk system which produces magnetic tapes for the production and history information received.

2. Data Processing for Monthly Reports

On a weekly basis, maintenance (corrections and cow histories) and production data is used to update the master files.

The processing system maintains a data bank using indexed sequential files. These are maintained on reserved disk, offline at the computer centre. The data bank files are:

File	Current Size (records)
Herd Master File	5,427
Cow History Master File	467,278
Lactation Detail Master File	319,424

The lactation detail file contains all daily production information for each cow. This allows for easier production maintenance and simplifies the calculating of the cow production index. This daily production data is used during each herd update to calculate progressive lactation yield.

A typical weekly processing run would involve:-

a) Herd Master File maintenance.

b) General maintenance and addition of cow history data on the cow and lactation file.

c) Production update and production of monthly reports.

d) Summary report of herd performances.

This procedure uses four programs, two of which are relatively large and complex. The bulk of editing and all calculations are performed by these two programs. The implementation of production index calculation for cows and efficiencies in file usage were the main reasons why an indexed sequential file design was developed.

The computer processing cost for the production of farmer monthly reports for 1979/80 is estimated at 1.24¢/cow/test.

3. Annual Reporting

During August each year, all completed lactations or lactations having reached 300 days are used to produce annual cow production reports for individual herds.

An annual lactation history file is produced at this time and used to produce State and Shire production statistics as well as Relative Breeding Values for all dairy sires having daughters milking during the year.

4. Data Preparation at District Centres

The centralisation of the herd recording procedures has developed over the past five years and currently there are 11 Herd Improvement Centres which control over 70% of all cow production recording and artificial breeding usage. Data preparation at these centres utilizing minicomputers interfaced with testing equipment is currently being investigated. This could reduce the large data entry workload currently borne by the Department of Agriculture. This facility would also promote greater flexibility in operating procedures at these centres.

5. Outlook for 1979/80

A substantial increase in the number of farmers utilizing the dairy herd performance recording scheme is anticipated (estimated in excess of 300,000 cows). The basic data processing and reporting procedures are well established and accepted by the dairy Industry. Hence 1979/80 will see a consolidation of the service offered with improvements in data preparation and usefulness of information, not only to the farmer but also to other interested parties.

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N.S.W. DAIRY HERD IMPROVEMENT PROGRAM: INFORMATION PROCESSING SYSTEM

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SUMMARY

Data processing for the N.S.W. Dairy Herd Improvement Program is currently undergoing extensive revision, upgrading and expansion, as a result of the inadequacy and obsolescence of the present system. Purchase of new hardware by the N.S.W. Department of Services provided an added stimulus to undertake the revision.

Reports from the revised system will be provided for three facets of the Program, viz., herd recording, selection and contract mating of elite cows and the Sire Evaluation Plan.