Farm records data base for management and education

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Several farm records packages are available for use by farmers and consultants on microcomputers. These are limited in flexibility, recording and processing capacity, and in the detail of possible output. They do not adequately meet the requirements of an educational institution. Queensland Agricultural College (QAC) operates several commercial size farm enterprises and uses these for the development of technical, practical and managerial skills in educational programs. To meet farm managerial and educational requirements a comprehensive data base was developed using the "Powerhouse" fourth generation language. It operates on a Hewlett-Packard HP3000 computer.

System Description

The major features of the data base are:

• comprehensive recording of both farm inputs and outputs;

• capability of expansion to incorporate additional records;

• user friendliness for staff and students.

The system is menu driven and contains 23 data entry screens, 28 parameter screens and produces 28 (including 8 master (or index) set) reports. Reports are developed by creating links between various data sets, and selecting required items from within the sets.

The data base, in addition to master sets contains details of paddocks, soil analyses for sites within paddocks, details of crops, crop planting, chemical, fertilizer and irrigation use, irrigation water analysis, fertilizer and chemical product analyses, field operations, equipment and tractor use, and detail of harvest procedures, crop quality and end use.

Reports currently prepared for an individual crop give details of crop history, equipment use, tractor use, irrigation history and crop operations. Individual paddock reports cover crop, fertilizer and chemical histories, equipment use, tractor use and paddock operations. Other reports include labour use, crop yield and soil and water analyses.

Discussion

The data base was initially developed for recording and reporting data on field crop production. It has subsequently been successfully used, after some modification in pasture and fodder crop production activities. Further development of the latter use will allow animal production data to be incorporated. For both applications, the data base could be interfaced with data held on input cost and output values to provide up to date financial analysis of the various enterprises.

Importantly the data base holds records over an extended time. This history of individual paddocks can be built up, and differences in performance examined. The regular recording of soil and water analysis data will facilitate examination of changes in soil fertility and irrigation water quality over time.

The data base has been very useful for managerial decisions and has provided a ready source of data and information for use in educational programs. It has been used in teaching in agricultural systems, agronomy, soil and irrigation management, agricultural mechanisation and farm management. In production management it has been invaluable in budget preparation, performance review and in providing information to support capital expenditure proposals.

The further development of the data base to interface with files on current input costs and output values will enhance its use as an educational and management resource.