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This paper describes the design and development of a structured methodology to store, maintain, statistically analyze and manage data collected in sugarcane research. It also explains the implementation of the designed system using microcomputers and standard software packages generally available at smaller research organizations. The broad aim of this system is to assist researchers and senior managers of such institutes to quickly view and analyze appropriate data as and when required. It can also be used to query data through a user-friendly interface which is developed for this purpose.

The advantages of a relational database management system (RDBMS) in developing information systems are discussed. The database for the system is created as a relational system by an in depth analysis of the functions of the Sugarcane Research Institute (SRI).

A prototype of part of the system was implemented on a an IBM PC compatible machine using three software packages, namely, dBASE IV to implement the database functions, SAS for statistical data analysis and LOTUS 1-2-3 for graphical representation of data and for some of the statistical analyses. Each of this have their own programming languages and facilities to communicate with each other. Usage of relational database is normally limited to business database applications. However, the success of this project suggest that relational database management system (DBMS) and the appropriate software packages which are available can be effectively utilized to develop flexible computer systems for research data analysis as well.