Sheep Farm – a User-Friendly Database Management System for a Small Farm

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Livestock research and breeding farms require a database management system (DBMS) to facilitate accurate and organised documentation and easy access of data. Many available DBMS are neither custom-made nor user-friendly. They also, generally, lack in-built data validation feature that ensures the validity of the stored information. This project aimed to develop a user-friendly DBMS for a sheep research farm, with in-built data validation features.

The DBMS developed is called SHEEP FARM (Figure 1). SHEEP FARM is based on the operational and research activities of sheep breeding programmes in two universities. It caters for records on general information of individual animals, breeding activities, and reproductive and growth performance (Figure 1). It is structured using Microsoft Access. SHEEP FARM is a user-friendly DBMS with screen displays and dialogues designed to facilitate easy data entry and access (Figure 3). Programs have been incorporated for auto-generation of related information. An important feature of SHEEP FARM is that it automatically validates the data upon entry by conducting range, plausibility and sequence tests, and by testing for duplication (Figure 4). In addition to storage of data, the SHEEP FARM may be used to generate reports on herd structure and herd dynamics, and list data in the form as required for statistical analysis (Figure 5).

SHEEP FARM has logical data independence; application programs may be modified without affecting the data storage and the programs, in turn, are unaffected by extension to the data structure. This feature enables SHEEP FARM to be customised for sheep research farms under management systems other than the one for which it was developed, and even for farms with different research requirements. Although SHEEP FARM has been developed for research purpose, it may be extended to meet more farm management requirements. A security control procedure may also be incorporated into the system to prevent unauthorised access to all or part of the database.

Figure 1. The main menu of SHEEP FARM

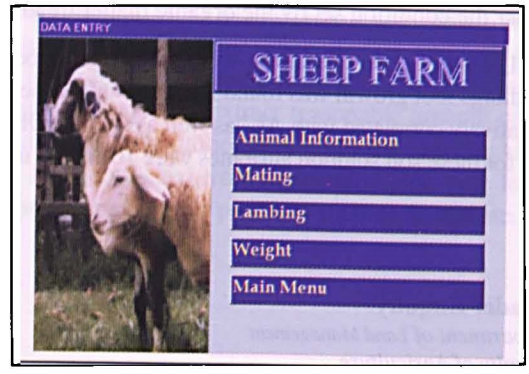

Figure 2. The data entry menu showing the types of data stored

Figure 3. User-friendly data entry menu, facilitated with pop-up menu

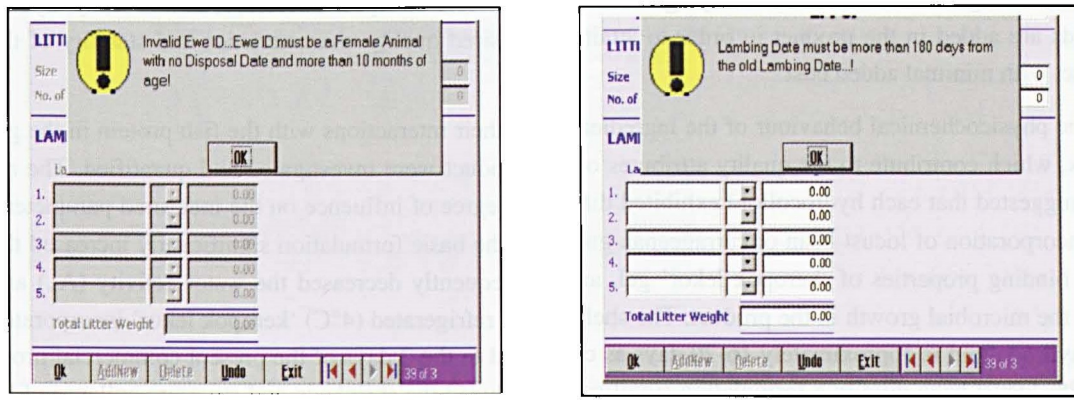

Figure 4. Auto-validation of data upon entry

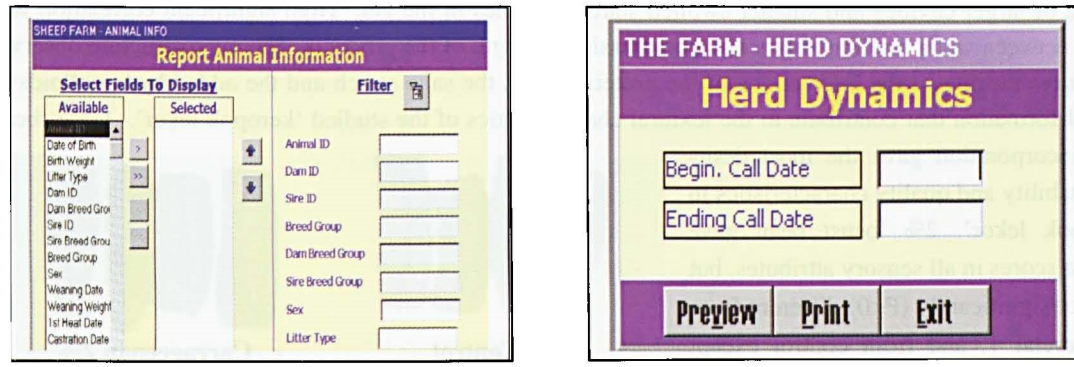

Figure 5. Easy retrieval of selective data and generation of reports

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