

HEALTH AND MASTITIS

A DATABASE FOR THE HEALTH OF COWS IN TRANSITION FROM CONVENTIONAL TO ROBOTIC MILKING

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An EU project investigating automatic milking systems includes a study of the health of cows over the period of transition from conventional milking system to a milking robot (automated milking system or AMS). Data are collected for up to 12-months prior to installation of an AMS and for the succeeding 12-months. Records come from previous farm databases, paper records and from study of the animals. Post installation, most records will come from the AMS management system as well as regular study visits. To manage this data, from up to 45 farms in Denmark, the Netherlands and the UK, a database has been constructed that is due to go live in spring 2001.

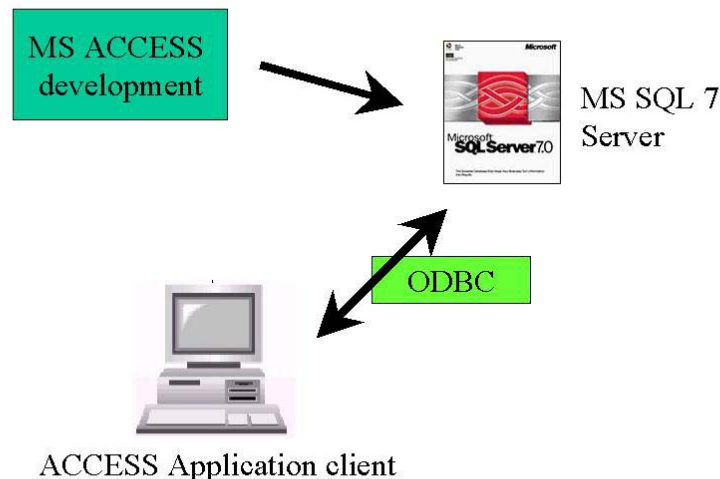


Fig. 1 Structure of database components

Data input is by a graphical user interface both direct and indirect from observations and records using standardized reporting forms, spreadsheet templates and export files from farm management systems. There are restricted entry protocols controlled by predefined lists, input masks and highlighting of suspect entries. Updating of the database is manager controlled. The

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user interfaces only with a static version. Periodic updates are carried out for remote users with restriction to their data as required.

The farm, herd, and animal identifiers are linked to all records within a relational structure. The data fields include farm and herd. Within the cow identifier the fields include breeding, teats, machine milking, milk, mastitis, body condition, lameness, other diseases and various parameters related to veterinary attentions.

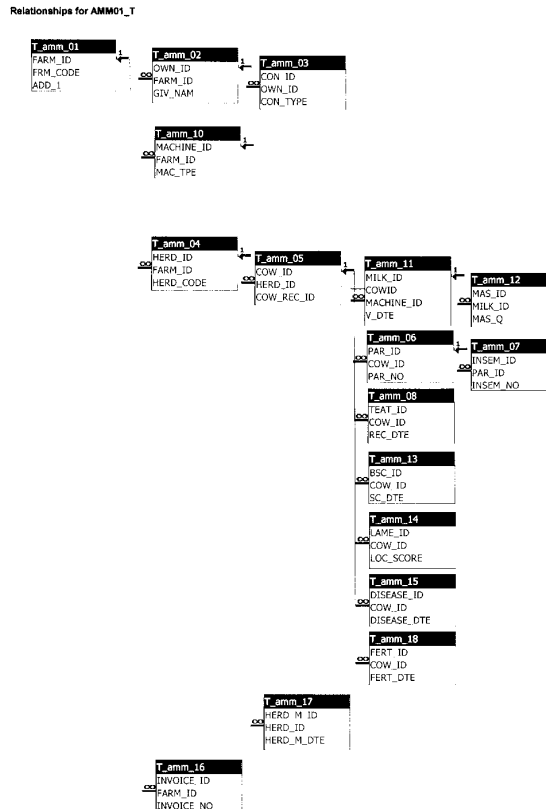


Fig. 2 Hierarchical relationships of data fields

This database allows analyses of all health parameters and comparisons of the performance to the individual criteria before with after installation of the AMS, between herds, between AMS types and between countries. It may be interrogated interactively by the user using the application, by predefined reports or with bespoke queries by the Database Administrator, as shown in Fig. 3.

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Example - Select Search Criteria

General Data

Milking Data

Individual Cow Data

Health Data

Legend:

- Text Search
- Date Search
- Number Search
- Yes/No Search

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SELECT I_sname, U1.FARM_CODE, I_sname, U4.HERD_CODE, I_sname, U5.COW_ID, I_sname, U6.HERD_ID, I_sname, U9.COW_REC_ID,
I_sname, U6.PAR_ID,
FROM EE_sname, U3.RIGHT JOIN T_sname, U4 ON T_sname, U1.FARM_ID = T_sname, U4.FARM_ID, U3.RIGHT JOIN T_sname, U5 ON T_sname, U6.COW_ID = T_sname, U6.COW_ID,
WHERE (U1_sname, U5.COW_REC_ID, U3.RIGHT JOIN T_sname, U4.HERD_ID) AND (U1_sname, U6.HERD_ID)
  
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Fig. 3 Interactive field selection for reporting.

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ROBOTIC MILKING AND THE DAIRY INDUSTRY