

PUBLICATIONS

2002

TEXAS BEEF INDUSTRY DATABASE (BEEFSYS)

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Background: The Texas Beef Industry Database has been developed to provide researchers and extension specialists a comprehensive warehouse for data concerning all phases of beef cattle production including forages, supplemental feeding, carcass, and meat products. Preliminary procedures for entering or uploading, managing and reporting data have been developed using data generated from several research projects. As new users come on board, necessary modifications will be made to fit individual needs. The goal is to continue developing the database so it is as useful as possible to all interested users.

The software used to maintain the Texas Beef Industry Database is MySQL. MySQL is the world's most popular open source database server, and is designed for speed, power and precision in mission-critical, heavy load use.

The primary objectives of this project are as follows:

1. Develop and maintain a Texas Beef Industry database to store animal-pasture-feedlot-carcass information derived from research and extension projects;
2. Use existing and develop new methodologies to analyze available beef industry data to identify factors affecting cost of production, animal value and risk;
3. Develop appropriate decision aids and models for evaluating beef production alternatives, grazing systems, and marketing strategies;
4. Identify more effective methods to motivate producers to analyze and change production, marketing, and management systems;
5. Identify appropriate educational delivery methods for targeted audiences.

Currently, templates for organizing animal-pasture-feedlot-carcass data have been created in Microsoft Excel, and can be used by researchers to prepare their data for uploading into the Texas Beef Industry Database.

Research Findings: Since the initiation of this project in February 2000, the TBI database and BeefSys have been developed to store animal research data. The database is now home to data for more than 5500 Overton pasture research cattle. The data for these experiments include cow-calf, stocker, feedlot, and carcass traits. The database also includes the full reproductive histories for more than 700 Overton cows. Recently added to the database has been extensive research data for more than 500 stockers from a 2-year study between Overton, Uvalde, McGregor, College Station, and Texas Tech.

The 2-year study has aided in creating a database structure that can accommodate, or be easily adapted to accommodate, other researchers' data. The robust privacy system allows the researcher to keep his data private. Although data privacy is a big concern among researchers, one of the biggest assets of a centralized database is the ability to share data. Since all data in the TBI database have the same structure, data among researchers can easily be combined, compared, contrasted, sorted, and analyzed for biological and economic purposes.

A comprehensive database backup and recovery process has also been developed and tested for the TBI database. This process protects users' data in the event of data loss or data corruption by allowing the system administrator to restore the data in the database back to its original state. Since the database lives on a server running the Linux operating system, computer viruses are not an issue.

BeefSys, which is the internet-based system that allows access to the TBI database, allows users to: add data to the database by either manually entering it directly into the system, or uploading it from existing files; view an animal's entire history using only the animal's ID; and create customized reports and graphs based on the criteria selected and easily download them into Microsoft Excel for further formatting. A user's manual for BeefSys is currently in development.

Application: Use and implementation of BeefSys is now ready for widespread, multi-diverse dataset entry to test the database storage and retrieval system.

Some of the plans for the upcoming year are as follows:

- Re-evaluating file structures, screens, etc. as new users come onto the system.
- Upgrading the database software as new versions are released.
- Re-evaluating all data audits and eliminating any loopholes, which might allow "bad" data into the database.
- Allowing users to set up profiles in BeefSys so that screens are dynamically built based on user preferences.
- Adding more functionality to the reporting and graphing screens.

Also planned for this year is to begin developing a non-internet version of BeefSys. This version would be located on an individual's computer, and allow them all the functionality of the Internet version of BeefSys without actually having to connect to the Internet. Instead of accessing the TBI database, the non-internet version of BeefSys would use a local database located on the user's own computer. The local database would mirror the TBI database in structure, so that the user could periodically (weekly, monthly, etc.) refresh the TBI database with data from their local database. This would allow the user much faster access to his own data, as the Internet version of BeefSys will only be as fast as the user's Internet connection.