

## FSL-3417: DEVELOPMENT OF DATABASE MANAGEMENT SYSTEM FOR MULBERRY GENETIC RESOURCES

**Period:** April, 2008 - March, 2010

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### **Introduction:**

The project was initiated to develop mulberry germplasm database with photo documentation of habit, leaf, flower and fruit of each accessions and was successfully completed during the year under report. In order to handle huge data, CSGRC has developed a database namely, Window version of Mulberry Germplasm Information System (Win-MGIS) incorporating various facilities for data storage along with retrieval facilities including photo documentation.

### **Objectives:**

- To develop window version of Mulberry Germplasm Database System including pictorial presentation this will help the mulberry breeders/scientists to select the germplasm resources suitable for development of improved genotypes.
- Easy identification of similar accessions based on morphological features
- Preparation of Mulberry Germplasm Database CD

### **Features of Win-MGIS**

The project was successfully completed as per the objectives. The database system is now installed in mulberry division and data has been updated as on date. The facilities of the system are as follows:

**A. Data Entry:** This module has the facility of entering passport, characterization, evaluation data etc. In order to enter the data entry, easy and error free descriptors states were provided in combo boxes.

### **B.Reports:**

**a. Frequency of collection:** This option gives the frequency of mulberry collection based on country, state, species, donor etc or on multiple combinations.

**b. Listing of collection:** This option lists out mulberry collection based on country, state, species, donor etc or on multiple combinations.

**c. Data listing:** This option lists out the data on selected parameters / selected accessions. The list can be stored in Excel file also.

**d. Accession profile:** Accession Profile of mulberry germplasm gives complete information about an accession, which includes passport data, morphological data, anatomical data, reproductive data, growth and yield attributes and biochemical data. In addition to this, it gives the photo images of plant view, leaf, flower and fruit, which help the scientists to select the germplasm for their further research work. The sample page print is given below:

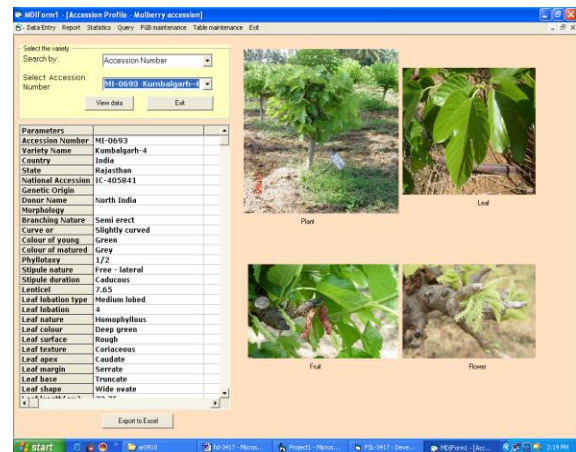
**e. Similar accessions:** This option list out the accessions those are morphologically similar to the accession, which is entered in the text box.

**f. Compare Accessions:** This option displays all descriptor values in two columns so that it is easy to compare the values for further selection.

**g. High and low performing accessions:** This option list out the accessions, which are performing better for the particular parameter. Also it will display the low performing accessions.

**h. Qualitative frequency table:** This option displays the frequency table for morphological and reproductive parameters

**i. Query:** This option displays the accessions, which are satisfying the input selected criteria. This option is very useful for selection of mulberry accessions for further research based on multiple parameters.



## CD on Mulberry Germplasm

CD on mulberry germplasm database is also prepared for the use of Scientists, Breeders and Researchers which contains facilities like View Accession Profile, listing of similar accessions, comparing mulberry accessions, general statistics, frequency table, better performing accessions and query etc. Further, digital images of habit, leaf, flower and fruit of mulberry accessions were recorded from Mulberry Field Gene Bank of CSGRC and stored along with the database. The users can view the data of individual accessions along with the photo images of mulberry accessions.

Data of 700 accessions, which has been published in the form of printed catalogue in Volume 1, 2, 3 and 4, have been stored in the CD along with digital images of the accessions.

