

Poster 14: TropGENE-DB, a multi-tropical crop information system

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At the Centre de Coopération Internationale en Recherche Agronomique pour le Développement, (CIRAD), a public French research centre which mandate is to contribute to rural development in tropical and subtropical countries through research, experimentation, training operations, transfert of scientific and technical information, primarily in the fields of agriculture, forestry and agrifoods, researchers gather a lot of various data, especially on the genetic, molecular and phenotypic characteristics of tropical plants of important economic interest for many people in developing countries.

A crop information system called TropGENE-DB has been developed as a tool for the researchers to store and query their data. The most common data stored in TropGENE-DB are information on agro-morphological data, parentages, allelic diversity, molecular markers, genetic maps, results of quantitative trait loci analyses, data from physical mapping, sequences, genes, as well as the corresponding references.

TropGENE-DB is organized on a crop basis with currently nine running modules (banana, cocoa, coconut, coffee, cotton, oil palm, rice, rubber tree, sorghum, sugarcane), with plans to create additional modules for taro, yam and citrus.

TropGENE-DB has been developed using the object-oriented AceDB database management system (J. Thierry Mieg and R. Durbin, 1996). It is based on a generic database model with standardized class and tag names. The same object classes were created for all the species allowing easy comparison and interoperability between the different modules.

TropGENE-DB is accessible for consultation via the internet at <http://tropgenedb.cirad.fr>. Web interfaces have been designed to allow quick consultations as well as complex queries. Each crop module has several interfaces to carry out specific requests. Molecular Marker, QTL or Parentage query sections have been created to be used for all crop modules. They are implemented with Perl/ CGI scripts using modules of the AcePerl Application Programming Interface (API) and the AceBrowser generic web interface.

Standard Excel files corresponding to the various types of data that can be submitted have been created to allow standardized and easy data submission. These files and a web form to post the standard data files for their incorporation in TropGENE-DB are available on our internet TropGENE-DB website. Current TropGENE-DB data have been submitted by different CIRAD teams and by scientists from other institutions working on tropical crops. Potential submitters can contact us at the following address tropgene@cirad.fr.

TropGENE-DB is being moved to a relational MySQL database which offers more possibilities for future developments since the ACEDB system is no longer maintained.