A SUGARCANE GENETIC DATABASE

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A database is being built to rationalise storage and to improve accessibility to breeding and genetic data on sugarcane germplasm. It aims to gather pedigree information, agronomic information and also information on sugarcane genetic maps (AFLP genetic maps, QTL information, AFLP reference patterns, and microsatellite characteristics). This database uses the AceDB platform (AceDB software for Microsoft windows; R Durbin, J Thierry-Mieg, R Bruskiewich) designed for genomic data management.

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The database, which aims to gather sugarcane germplasm and genome information, is a powerful but user-friendly system with many specific displays and tools designed for genomic data management. This software is used for many plant genomic databases[2].

It contains:

- Information about sugarcane germplasm[3] :
- Cultivar pedigrees (5000 entries)
- Disease resistance (850 entries)
- Agronomic value (1200 entries)

Information about the sugarcane genome (example shown in Figure 1):

- AFLP genetic map of R 570 with 900 markers (CERF/CIRAD)
- Reference AFLP electrophoretic patterns
- QTLs for yield components
- Microsatellite characteristics (sequences, primers etc.)

We will soon add new genetic maps (built with RFLP, STMS and AFLP markers) and cultivar STMS fingerprints. As this growing database is supplied with more and more information about the organisation of the sugarcane genome (genetic and physical mapping of interesting traits, syntenic relationships etc.), it should become an interesting and useful tool for sugarcane breeders and geneticists.

1 See http://www.acedb.org/

2 See http://genome.cornell.edu/

3 Sources: COPERSUCAR variety notes, WISBEN, BSES, SASEX, Florida Sugar League, MSIRI, CERF, CIRAD
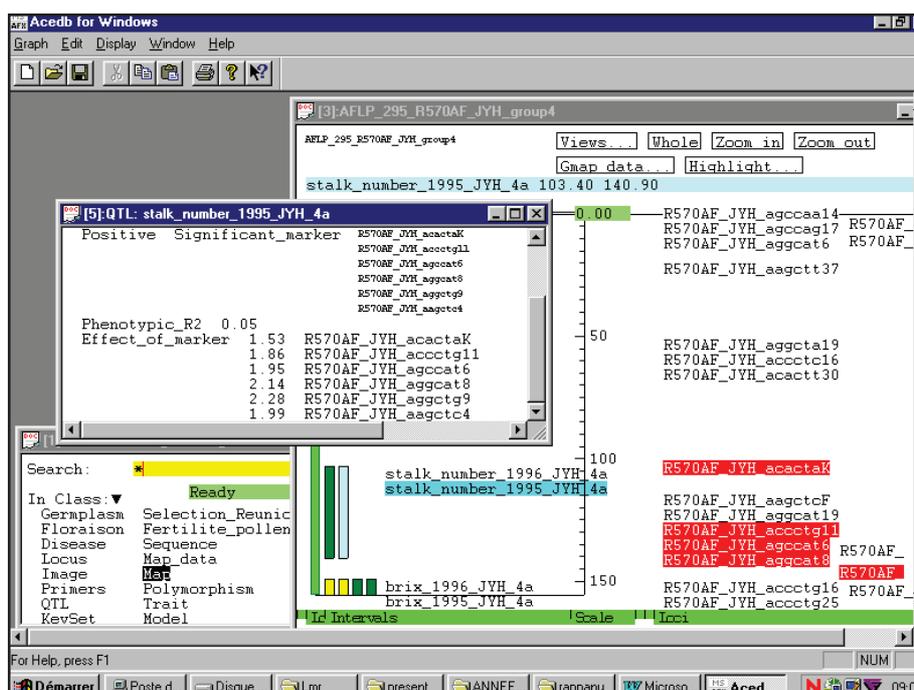

Figure 1. Screen shot of a genetic map display in AceDB showing markers and QTL positions.