

The Plant Genomics Database Infrastructure at the Scottish Crop Research Institute



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Background

At the Scottish Crop Research Institute (SCRI) we are developing an integrated and modular set of databases both to directly support our research & to integrate our internal research infrastructure with external informatics resources in our major target species (barley and potatoes). In addition, we are developing a targeted set of databases which encapsulate key domain knowledge from SCRI based scientists

All of the current development of web-based applications are based around a common operating environment of Perl, MySQL and Apache using Unix-Based operating systems. Initially this was Sun/Solaris based but recently we have begun a migration to Linux

We are presenting here some examples of the databases we currently support.

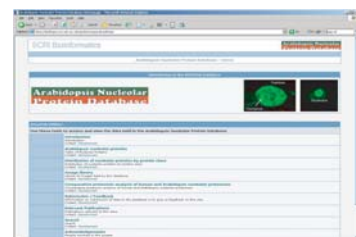
Arabidopsis Resources

Plant snoRNADB



SnoRNADB has been developed in collaboration with Dr John Brown in the Gene Expression Programme at SCRI and encapsulates information about snoRNA genes in Arabidopsis and related plant species. We are currently updating the information it contains to take account of new information from rice and plant ESTs

AtNOPDB



AtNOPDB is a project database which focusses on the nucleolar proteome of Arabidopsis, together with comparative information with the yeast and human nucleolar proteome. This is a collaboration with Dr John Brown from SCRI and Dr Peter Shaw's group at JIC.

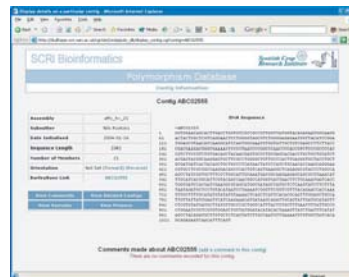
ProtLocDB



ProtlocDB has been developed in collaboration with Dr Karl Oparka of the Cell-Cell Communication Programme at SCRI to support a high throughput protein localisation project in Arabidopsis and Nicotiana based on GFP/Viral Vector constructs. It contains both high resolution confocal images and supporting data.

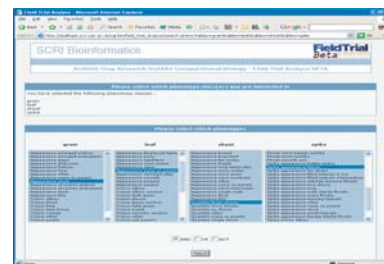
Barley and Wheat Resources

Poly_DB



Poly_DB has been developed to support the barley SNP development project at SCRI. It contains information on the EST sequence information on which individual SNPs have been developed as well as assay details and the actual sequence polymorphism that have been found in a range of barley lines.

FieldTrialDB



The FieldTrialDB and associated LIMS system have been developed together with members of the Genome Dynamics Programme at SCRI to support a barley mutation scanning project. They provide information systems to underpin both the field trialling of mutant lines and the molecular discovery of mutations in individual genes.

InsituDB



The InsituDB has been developed together with Dr John Doonan at JIC and Colleagues at Syngenta to support high throughput *in situ* analysis of Wheat ESTs in developing cereal grains. It contains both high resolution *in situ* images together with supporting sequence information and will be linked with other cereal resources on publication.

Future Developments

We are currently in the process of migrating many of our systems from a Solaris to a Linux based platform. Associated with this migration we are developing a portal interface to all our resources at SCRI. This now provides a common point of access through:

<http://germinate.scri.sari.ac.uk>

In addition we are currently investigating routes to making our informatics and analytical resources at SCRI available as a series of web services both to provide a more modular framework for our own internal needs but also to make our resources more generally available to relevant user communities. A major focus of our current activities is to provide support for developing SNP markers and the storage at utilisation of the genotype information that will be subsequently obtained.



Acknowledgements

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