

# Germinate 2: An Evolving Platform For Experimental Plant Genetics



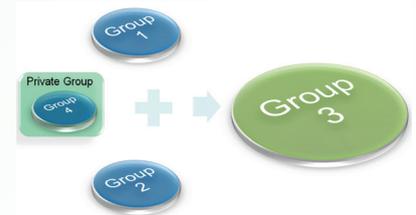
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## Introduction

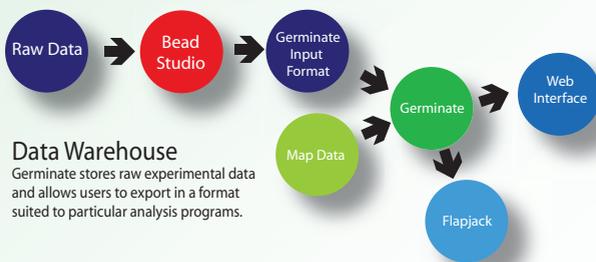
Germinate is a generic plant data management platform designed to hold phenotypic, genotypic and passport data. Germinate is easily extendable to include other data types if required. The database has been specifically developed and optimised to deal with high throughput genotyping technologies.

Germinate acts as a platform onto which complex applications can be structured. Recent work on Germinate has centred on optimising the database structure to allow easy integration with external analysis tools and other databases.

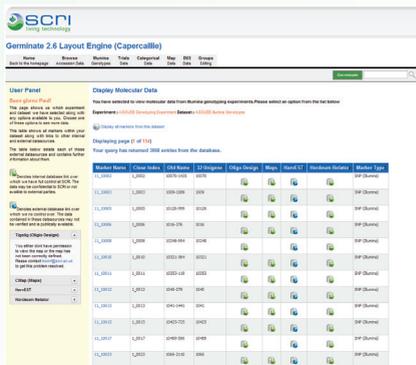


**Data Compartmentalisation**  
Germinate groups allow data from collaborative projects to be easily identified and selectively exported.

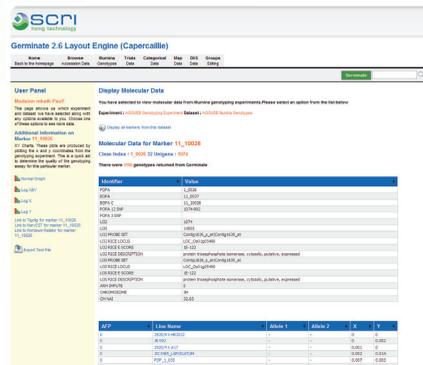
## Design and Technologies



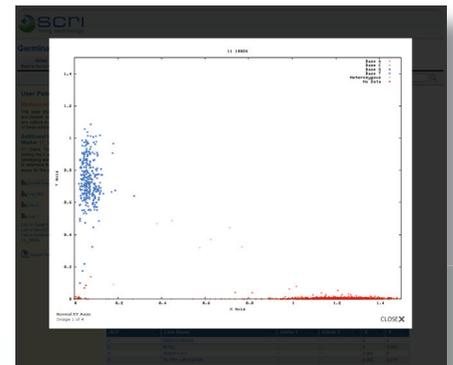
The Germinate platform has been developed using standard Open Source tools. MySQL is used as the backend database and Perl and Java for the interface and data export utilities. The use of these common tools allows us to develop a high throughput and high performance system. The modular design allows the easy addition and integration of new components and analysis tools quickly across different Germinate installations.



**Data Pooling**  
Information sources for markers are brought together in one place including both internal and external data sources.



**Marker Information**  
All information that we have for a particular marker is displayed together.



**Generated X/Y Signal Plot**  
In order to determine the quality of called genotypes Germinate can generate scatter plots on the fly from raw experimental data.

## Implementations

The Germinate Barley database here at SCRI currently contains phenotypic, genotypic and basic passport data for around 5,000 barley lines, 100 phenotypes and in excess of 7.5 million genotypes based on the Illumina Golden Gate assay.

The Germinate CPC Database contains information on the UK's gene bank of landrace and wild potatoes, the Commonwealth Potato Collection.

The collection comprises around 1500 accessions of about 80 wild and cultivated potato species. Passport, pathogen evaluation and molecular data for each accession is available via an easy to use web interface.

In addition to the barley and potato databases Germinate also supports data for the AGOUEB project and for the EU BIOEXPLOIT project.

Germinate is under evaluation in a number of other institutes around the world including the University of Riverside, California, EEAD in Zaragoza, Spain, ICRISAT in India and the John Innes Centre in Norwich.

