

Germinate CPC

The Commonwealth Potato Collection Database at SCRI

Paul Shaw, Gaynor McKenzie, Gavin Ramsay, Glenn Bryan, Karen McLean, Andy Flavell* and David Marshall

SCRI Genetics Programme: Scottish Crop Research Institute, Invergowrie, Dundee, DD2 5DA

Plant Sciences Division: University of Dundee at SCRI, Invergowrie, Dundee, DD2 5DA*



http://germinate.scri.ac.uk/germinate_cpc

cpc@scri.ac.uk

The Germinate CPC database contains information on the UK's genebank of landrace and wild potatoes, the Commonwealth Potato Collection. The collection is one of a network of international potato genebanks (<http://www.potgenebank.org>), and is held in trust for humanity by SCRI with the support of the Scottish Government.

The collection comprises around 1500 accessions of about 80 wild and cultivated potato species. Passport, evaluation and molecular data for each accession is available in a fully searchable online database based on the Germinate platform developed at SCRI.

We hope to further enhance the value of the data contained within this database by including metabolomics data for 116 metabolites across the CPC accessions in addition to an extensive image library of wild potato species.

The Germinate CPC database is the first publically available database built on the Germinate platform <http://germinate.scri.ac.uk/germinate>.



Passport Data Interface

Passport Item	Value
Accession Number	7234
Accession Name	7234
Genus	Solanum
Species	cabanense
Plant Transport	Yes
Accession Date	11/04/1973
Updated On	2008-03-04 14:05:17
Other ID	CGP 14876; name: 6728
Birmingham Potato Collection	BPC 0420
Request Stock	Yes
Series	TUBEROSA
Habitat	By the potato on the acre.
Spices Code	CAI
Quarantine Testing Year(s)	1988
Seed In Stock	Yes

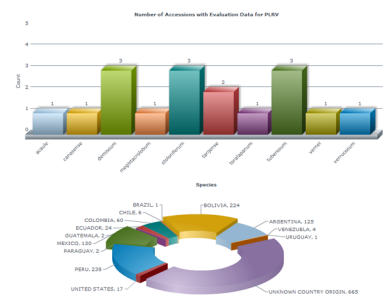
Geographic Data

Geographic Item	Value
Country Code (2 letter)	FE
Country Code (3 letter)	PERU
Country Name	PERU
State	CUSCO
Collecting Site	CALCO, Ruins of Puc.
Latitude	-13.26
Longitude	-78.51
Elevation	3200

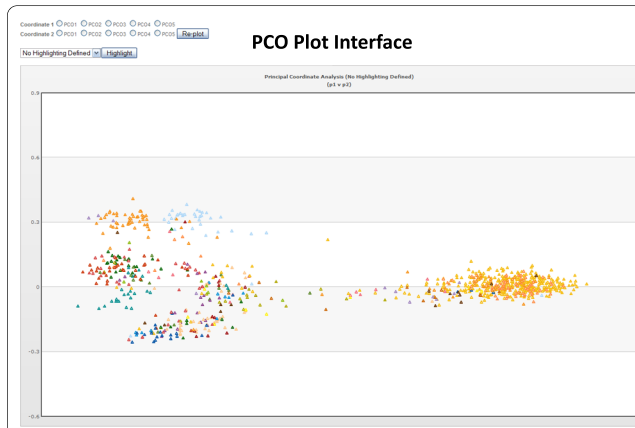
Collection Site Map

Graphical Reports

Interactive graphical reports show overview statistics about the accessions held in the database. These range from the number of species that have resistance to a particular pathogen to the number of accessions collected in individual countries.



Database Graphical Reports



Principal Coordinate Analysis

Generated from AFLP data the PCO plots allow targeted interrogation of data held within the database. Users can decide using a simple interface which coordinates to plot in addition to selective highlighting of groups of interest for easier identification on the plot. Principal Co-ordinate Plots were generated using Genstat Ver9.0 using the Jaccard coefficient of similarity. Data from 6 AFLP primer combinations was combined to generate a similarity matrix from which plots were constructed in the first 5 dimensions.

Evaluation Grid for Species *Solanum acaule*

CPC ID / Evaluation	R01	R02	R03	R05	PA1	PA3	BLIGHT	PVK	PVY	PLRV	FROST
82							1				
129							1				
1427							1				
1468							1				
2107							1				
2109							1				
2113							1				
2440							1				
2456							1				
2522							1				
2923							1				
2925							1				
3494							1				
3497							1				
3499							1				
3902							1				
3942							1				
3758							1				
3760							1				
3769							1				
3775							1				
3923							1				
7001							1				
7002							1				
7003							1				
7004							1				
7094							1				
7094							1				
7099							1				

Evaluation Grid

The evaluation grid utility allows the visual representation of resistance or susceptibility to pathogens and environmental factors across species. Our resistance data is based on a 6 point scale each assigned a corresponding colour to quickly show patterns across datasets. Colour schemes can be customised to suit the individual user and we offer various predefined colour palletes.

The grid is fully interactive and dynamic with mouseovers showing the exact evaluation score for a particular accession and links to passport information. Columns can also be sorted to arrange accessions with particular evaluation scores together. Displaying new data is done with a simple drop down list containing logical data groupings held in the database.



Acknowledgements

The authors gratefully acknowledge the financial support of the BBSRC and RERAD