



**Potato Genome Sequence published in the journal Nature**  
***Genome sequence will assist in faster breeding of new varieties***

**Auckland, New Zealand. 11 July 2011...**The Potato Genome Sequencing Consortium (PGSC), an international team of scientists including Plant & Food Research, has published its findings in the international journal *Nature*.

Potato is the world's third most important food crop. It is a key member of the Solanaceae family of plants and a close relative of tomato, capsicum and eggplant. The potato genome sequence, the “genetic blueprint” of how a potato plant grows and reproduces, will assist potato scientists and breeders improve yield, quality, nutritional value and disease resistance of potato varieties, a process that has been slow in this genetically complex crop. The potato genome sequence will also permit potato breeders to reduce the 10-12 years currently needed to breed new varieties. The potato genome is the first sequence of an Asterid to be published, a group of flowering plants encompassing around 25% of all plant species.

Analysis of the genome sequence data has revealed that the potato genome contains at least 39,000 protein coding genes. For over 90% of the genes the location on one of the 12 chromosomes is now known. The analysis reveals that the potato genome has undergone extensive genome duplication through evolution. The data also show clear evidence for how expansion of particular gene families has contributed to the evolution of the potato tuber – the edible storage organ that is the most striking feature of this important crop.

The PGSC was initiated in 2006 by the Plant Breeding Department of Wageningen UR (University & Research Centre) in the Netherlands, and developed into a global consortium of 29 research groups from 14 countries, including New Zealand's Plant & Food Research. In late 2009, the PGSC released a high quality draft sequence of the genome online. Since that time the PGSC has been refining the genome assembly, as well as performing exhaustive analysis and interpretation of the data.

Scientists at Plant & Food Research contributed genetic sequence data to the project, and were instrumental in constructing the gene map that forms part of the whole genome sequence. Plant & Food will use the genome sequence to identify genes of key interest to the potato industry – such as high health, yield, and pest and disease resistance - and use these as markers in screening seedlings in their natural breeding programme, reducing the time taken to deliver new commercial cultivars to market.

The potato genome assembly and other resources are now available in the public domain at [www.potatogenome.net](http://www.potatogenome.net), where a complete listing and contact details for all PGSC members can be found.

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