

NZ researchers release Kiwi Fruit DNA Sequences

Researchers at New Zealand-based fruit science company HortResearch and New Zealand-listed biotech company Genesis Research and Development Corporation have announced that they are completing the public release of the world's most extensive collection of kiwifruit DNA sequences.

The release comprises over 130,000 kiwifruit gene sequences - referred to by scientists as expressed sequence tags (ESTs). These are DNA sequences from active genes in the plant; genes that govern such characteristics as flavor, color, shape, vitamin content and aspects of fruit development such as ripening and storage life.

HortResearch and Genesis have released a similar number of apple ESTs in March 2006. Those genes are now part of HortResearch's apple and pear breeding program.

A paper detailing the discovery and analysis of the Kiwifruit EST's was published by US-based peer-reviewed journal BMC Genomics.

HortResearch scientist Dr William Laing said the kiwifruit ESTs were identified over an eight-year period and will be used by the company's breeders to speed up development of new kiwifruit varieties through a technique known as Marker Assisted Selection (MAS).

In a MAS breeding program, breeders use traditional crossing techniques to breed new varieties - which are then assessed for their commercial potential by searching their DNA for markers that indicate the presence of genes linked to desirable fruit traits. ESTs are essential in helping scientists identify the genes they're looking for.

The genus Actinidia, to which all kiwifruit belong, is incredibly diverse and contains many colors, shapes, flavors and other attributes beyond the two most prominent industry cultivars, the green-fleshed Hayward and yellow-fleshed Hort16A.

HortResearch acting Chief Executive Dr Bruce Campbell said New Zealand researchers were the first to publish such a large body of data on kiwifruit biology would pay significant dividends for New Zealand's billion-dollar kiwifruit industry.