ISTITUTO AGRARIO
DI SAN MICHELE ALL'ADIGE

PROVINCIA AUTONOMA DI TRENTO

PRESS RELEASE

GRAPEVINE GENOME SEQUENCED

After six years of research, a team from the Agricultural Institute of San Michele all'Adige has succeeded in deciphering the entire DNA sequence of the grapevine genome

The grapevine is the first fruit plant and the second crop plant, after rice, to have its genome sequenced.

The genetic code of the grapevine is no longer a secret. After six years of research, a team from the Agricultural Institute of San Michele all'Adige has deciphered the grapevine genome, using as a model the Pinot Noir vine, one of the world's most important cultivars.

Researchers embarked on the current experimental journey six yeas ago, when the Fondazione della Cassa di Risparmio di Trento e Rovereto provided backing for an advanced biology project in the grapevine and apple, laying the foundation for further scientific investigation aimed at uncovering the mechanisms that regulate plant biology.

The next step was made possible by specific funding from the Trento Autonomous Provincial Council and led to the production in 2004 of the first "Physical map of the grapevine", which was subsequently employed to reconstruct the 19 grapevine chromosomes. The following step was obvious: deciphering the entire grapevine genome, which has now been formally announced to the national and international scientific community.

At its current state, the project has sequenced 5 *genome equivalents* for a total of two and a half billion nucleotides, which comprise 99% of the plant's genes, creating a first draft of the grapevine DNA sequence which contains approximately 500 million nucleotides. This journey was enabled by funding from the Trento Autonomous Provincial Council and was a joint venture between researchers from the Agricultural Institute of San Michele all'Adige and the American firm, Myriad Genetics Inc.

The project presented today was begun last spring and is scheduled to end in a few months' time with the completion of the sequencing and assembly of the grapevine genome which will be published for use by the entire international scientific community. In the meantime enquiries concerning genes of interest can be addressed to the Institute.

The results obtained by the Agricultural Institute of San Michele all'Adige create a foundation for improving quality traits of currently cultivated grapevines and for establishing new varieties that are more capable of adapting to the soil and weather conditions of specific wine-growing regions worldwide.

Increased knowledge of the biological mechanisms of the grapevine will allow targeted approaches to reduce the number and impact of parasites enabling a sustainable, environmentally-sound, farming policy.

The release of the grapevine genome and associated data is a historic event which will undoubtedly herald a new era for viticulture.

Press Office

Trento, 20 March 2006

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