

# Development of an international grapevine identification system

## FINAL REPORT to GRAPE AND WINE RESEARCH AND DEVELOPMENT CORPORATION

Project Number: CSH 95/2

Principal Investigator: Dr M R Thomas

Research Organisation: CSIRO Division of Horticulture

Date: 1996

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Organisation:	CSIRO Division of Horticulture Location: Adelaide
Supervisor:	Dr Mark R. Thomas
Funding:	GWRDC

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#### Summary:

This project was funded by GWRDC, the CRC for Viticulture and CSIRO to purchase a UNIX Computer System for storage and manipulation of the DNA typing database and the addition of ampelographic material as it becomes available.

The computer has been installed and the first trial of the DNA typing system has been completed by the Australian Wine Research Institute. A second trial program will be run during the 1996/97 season and it is planned that further development of the grapevine identification system should be funded from testing revenue.

#### **Background to the Project:**

This project follows on from the successful development of the DNA typing system in the experimental phase through projects funded by the GWRDC, the DFRDC and CSIRO and development of the technologies ready for commercial trial, in a project as part of the CRC for Viticulture, funded by the GWRDC and the CSIRO. On completion of these two projects a robust and reproducible DNA typing system had been completed for identification of grapevine varieties and all the major grapevine varieties used in wine, dried fruit, table grape production and including the rootstocks used by grapevine growers had been DNA typed and their DNA type recorded on a database. The analytical and developmental requirements of the database were such that conventional PC's were unsuitable for further manipulation and management of the data and this project was developed to provide a UNIX computing environment.

#### **Objectives:**

To purchase a UNIX computing system and transfer grapevine identification material from a PC environment to the UNIX environment.

#### **Technical Information and Results:**

As well as DNA typing information, genetic information, photographs and ampelographic information would all be incorporated in the grapevine identification system as it develops. In current computing environments these types of mixed data systems are best handled by the UNIX system rather than PC based systems, thus for this project a successful result has been the transfer of the grapevine identification material to a UNIX based system and with that transfer the objectives of the project have been achieved.

This system provides the Australian industry with a reliable objective method of identifying grapevine varieties and complements the subjective methods already available.

No direct cost benefit can be placed on the value of this system. However, access to export markets in particular, requires an audit trail, which can confirm grapevine varieties. The availability of this system means that the Australian wine export industry can be confident that it can identify any grapevines used in production of export wine with accuracy. It also allows for the incorporation of ampelographic data into the system and is the first system set up by the wine industry anywhere in the world.

### **IP Issues:**

Initially the DNA typing system was the subject of a provisional patent but economic analysis indicated that insufficient revenue could be returned from DNA typing, to make this patent viable and patent proceedings were discontinued. Nonetheless the grapevine identification system database has commercial value and has been restricted to research use only for international collaborators and limited access to sections of the database allowed on the worldwide web. In an agreement with the Australian Wine Research Institute, CSIRO has licensed the procedure to the A WRI and give technical support to the A WRI in providing the grapevine identification service based on the technology developed in these linked projects.

The charging for provision of the grapevine identification service includes payment of a royalty to the contributors of establishment of the service, that is the GWRDC, the DFRDC, the CRC for Viticulture and CSIRO.

No new technical information has been developed since the start of this project.