

Quality determining loci in grapevine

Franziska Huber¹, Rudolf Eibach¹, Florian Schwander¹, Reinhard Töpfer¹

¹Julius Kühn-Institut, Institute for Grapevine Breeding, Siebeldingen

Email of corresponding author: franziska.huber@jki.bund.de

Nowadays, wild vine accessions are valuable sources for all kinds of pathogen resistances and therefore are important resistance donors in grapevine breeding. With the aim of reducing chemical plant protection products, they are used to generate new resistant cultivars. Usually, several pseudo backcrossings with *V. vinifera* cultivars are necessary to re-establish a wine quality comparable to the traditional cultivar's while introgressing the pathogen resistances. All in all decades are required to complete backcross and selection for wine quality.

In this study, a population of the hybrid 'Catawba' and the elite cultivar 'Lemberger' is investigated concerning the Labrusca-typical ("foxy") flavors which are frequently appreciated in table grapes but undesired in wines. This study aims at developing quality-correlating genetic markers that are applicable for marker-assisted selection.

For almost 200 years there were several assumptions about the origin of 'Catawba'. Among these, 'Catawba'

was supposed to be the result of a cross between a high-quality European cultivar (*Vitis vinifera*) and a native North American wild grape (*Vitis labrusca*).

The *Vitis vinifera* parent could be identified by genetic fingerprinting. This old hybrid is very popular in North America and is still used for juice and table grape production in the region of New York State. Besides this, the parent-child relationship between 'Catawba' and 'Concord' could be confirmed by SSR marker techniques.

This knowledge promotes the search for genomic areas responsible for the biosynthesis of Labrusca-typical aromas such as Furaneol ("strawberry") and methyl anthranilate ("mothball") in the offspring of the cross 'Lemberger' x 'Catawba'. Anyway, this finding is a gain in the field of genetic resources in viticulture and to implement new traits into the breeding program.