Prediction of New Zealand Sauvignon blanc aroma properties from aroma chemical composition

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Poster Abstract

The aromatic components of a wine are closely related to its sensory quality, which determines how acceptable the wine is to the consumer. The aim of this work was to create mathematical models which will describe the relationship between the content of aroma-active compounds in New Zealand Sauvignon blanc wines and the sensory properties of these wines. To create such a model six 2009 wines with different levels of aroma compounds and sensory properties were chosen. In order to obtain more diverse samples, these wines were left for aging at two different temperatures (10 and 28 C). After four months of storage, chemical and sensory analyses of these 12 wines were undertaken, together with one more 2010 Sauvignon blanc wine. With the help of principal component analysis (PCA) and partial least squares regression (PLSR), a model for the sensory properties of the wines was obtained. Relationships between nine sensory attributes, typical of New Zealand Sauvignon blanc wine, such as banana lolly, canned asparagus, caramel/spirit, flinty/mineral, floral/rose, fresh fruit salad, stalky, passion fruit/sweaty and capsicum/fresh green, and concentrations of varietal thiols (3-mercaptohexanol and 3-mercaptohexanol acetate), methoxypyrazines and volatile esters was found. In some cases a single chemical compound dominated the aroma descriptor, while in other cases groups of aroma compounds were involved. The obtained model is able to explain more than 70 % of the original sample variance.