

# The use of a new explanatory methodology to assess maturity and ripening indices for kiwiberry (*Actinidia arguta*): preliminary results

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## Abstract

Harvesting quality is a latent concept that is often summarised by several attributes, which in turn may be described as complex parameters due to their multicomponent structure. Multivariate techniques such as Multiple Factor Analysis (MFA) and Partial least square (PLS) analysis represent suitable tools to investigate quality indices as they are able to compute systems of composite indicators, providing more accurate knowledge than a single attribute. Therefore, the goals of this work are: to describe the evolution of different quality parameters during the harvesting period of new cv Tahi and cv Rua and to analyse their correlations in order to create a model that will highlight new potential harvesting and maturity quality indicators. This will provide knowledge for development of a harvesting index of *A. arguta* fruit, for which the harvest period is still determined by traditional quality traits. Data from physicochemical, colorimetric and nutraceutical assays were analysed with ANOVA and MFA and fused in a PLS model. We created a PLS model with an  $R^2$  value of 0.83 for cv Rua and of 0.44 for cv Tahi. Our results suggest that composite colorimetric parameters may enhance the sensitivity of Hue changes during the harvesting period and are less cultivar-specific than nutraceutical ones. It is suggested that this methodology is applied to larger sample sizes in order to extend the results to the population. Further studies should pay more attention to the use of colorimetric indices and their combination.