

Abstract:

Measures of quality of horticultural produce are often categorical. This means that the quality parameter scale is not continuous and only a fixed number of outcomes are possible (e.g., a consumer accepts a product or not, only two outcomes are possible). In other cases the quality parameter is in principle continuous but difficult to measure and for pragmatic reasons the product is classified in a few categories. Often percentages are calculated from the categorical data to have a continuous measured value (e.g., 85% of the consumers accepted the product) or the categorical data, if they are ordered, are assumed to be continuous and regression models are derived. Often one comes into problems when predictions are made on the basis of a linear regression. For instance, a negative percentage or a percentage higher than 100 is predicted.

If one wants to use this data for modelling and/or prediction purposes, equations relating categorical response variables to continuous explanatory variables are needed. This contribution wants to show the benefits of logistic regression that takes into account the binomial distribution of these data on two case studies: red discoloration of chicory chicons under CA-conditions and the occurrence of brown heart disorder in 'Conference' pears stored under CA-conditions.