Title Evaluation of a non-destructive dry matter sensor for kiwifruit

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Abstract

In this work we studied the relationship between kiwifruit dry matter (DW) measured using the destructive method with a fruit dehydrator (Nesco/American Harvest®, Wisconsin, USA) and a non-destructive Kiwi meter sensor (Turoni Inc., Forli, Italy). This was an approach to develop a reliable non-destructive method to predict harvest and postharvest quality based on dry matter. There was a significant, but low correlation between DM determined non-destructively using the Kiwi meter and destructively using the fruit dehydrator (industry standard). Classification models with discriminant analysis were used to segregate kiwifruit into groups according to DM. Using this statistical approach rather than the relationship between the two methods, kiwifruit were consistently segregated into two DM groups, but classification into three groups yielded lower scores. These results indicate that the Kiwi meter is a reliable and fast sensor to segregate kiwifruit according to their DM content that could be considered as a consumer quality at harvest and/or postharvest index. Further work on the optimization of this non-destructive sensor as a tool to define consumer kiwifruit quality is being carried out by our group.