

Title Developing models systems for testing the sensory properties and consumer acceptance of new fruit cultivars: The example of kiwifruit

Author Sara R. Jaeger, Lauren G. Axten, Amy G. Paisley, Mark W. Wohlers, Ken B. Marsh, Michael B. Sullivan and F. Roger Harker

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Abstract

Horticultural industries, like most consumer goods industries, pursue new product development, but face the significant additional challenge that prototypes for consumer testing are not readily available. One possible solution involves the development of realistic model systems in which sensory qualities can be systematically altered to mimic the proposed new cultivars. The present research tests a model system for assessing taste/flavour innovations in fruit, using kiwifruit as an example. Flavour/taste solutions were injected into pieces of fruit tissue. These fruit samples were subjected to descriptive sensory analysis and consumer acceptability testing to reveal that systematic changes in the sensory characteristics of fruit could be achieved and novel flavours introduced. The response patterns in the data fit expectations (e.g., samples injected with sucralose were higher in sweetness) and consumer participants evaluated the model system favourably in terms of ability to provide a good approximation of what it would be like to eat a whole kiwifruit with the novel flavour characteristics. Limitations and advantages of the tissue-based model system are compared with other possible model systems and the relevance of this approach to other types of fruit in guiding new product development is discussed.