Identification of Natural Sweeteners and Sweetness Enhancers in Citrus

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Palatability is a critical contributor to food acceptance and to consumer judgement of food quality. For example, fruit cultivars with a higher sugar content are often preferred over less sweet varieties, while healthy fruits with relatively low sweetness (e.g., grapefruit) are less accepted. However, increased sugar consumption is a significant risk factor for developing obesity and obesity-related diseases and for dental concerns. Therefore, new fruit cultivars that are sweeter tasting but that do not contain more sugar would be more widely accepted and would promote healthier eating. Additionally, consumers show a growing preference for natural products and for sweeteners that more closely resemble the sensory profile of sugar. Therefore, the identification of natural sweet taste compounds that could be used in processed foods and beverages in lieu of added sugars or artificial sweeteners could increase consumer acceptance of healthier foods and drinks. Our studies indicate that certain citrus cultivars contain non-carbohydrate sweeteners and/or sweet taste enhancers. In the past year, we tested some sweeteners qualitatively and quantitatively in the unreleased citrus cultivars developed by the UF/IFAS CREC breeding team. Together, these studies will expand markets for citrus, and will create a new category of citrus products (natural sweet taste compounds) for the food and beverage industries.

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