



Effect of maturity and shelf life on taste perceptions of Strawberries

Maturity at harvest has an essential influence on the taste of strawberries. Taste perception of unripe strawberries does not improve during shelf life and never achieves the test scores of ripe strawberries. This is the main conclusion drawn from Work Package 3 by Wageningen Food & Biobased Research carried out within the GreenCHAINge project. The findings highlight the importance of harvesting strawberries at the optimum, not-too early, stage of ripeness. GreenCHAINge, successfully completed in 2018, established a 'smart chain' that allows fruit businesses to improve the intrinsic quality of on-sale fresh fruit. Research aimed to increase understanding of factors affecting the quality of strawberries in order to optimize taste – perhaps the major contributor to how consumers perceive the quality of this popular soft fruit.

Taste development

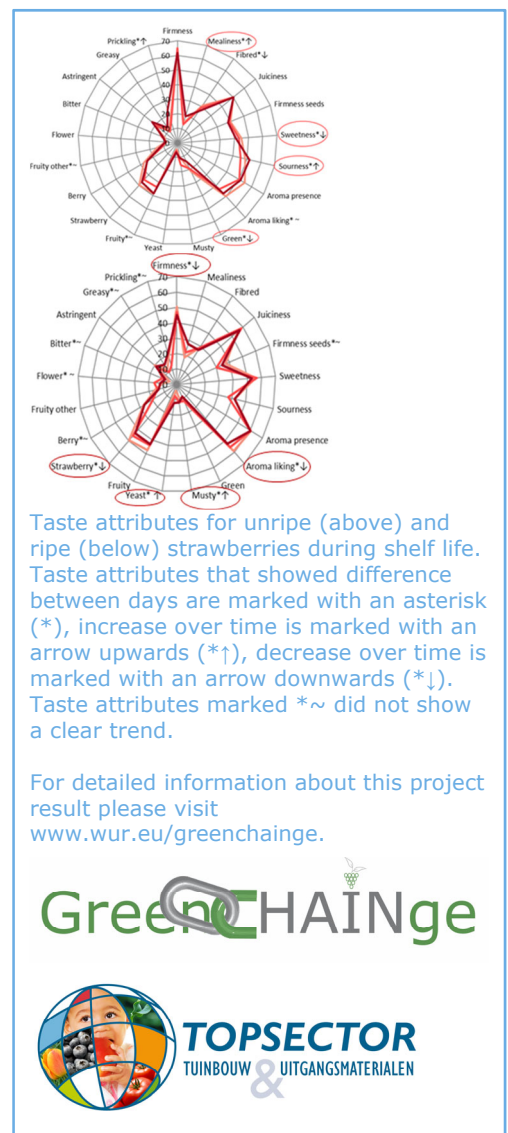
The scientists measured the effect of maturity stages on consumers' taste perception of strawberries. They assessed the development of taste throughout shelf life and identified key sensory attributes in strawberry-taste perception.

From juiciness to prickling

Ripe strawberries scored high on the sensory attributes of juiciness, sweetness, aroma presence, aroma liking, fruity aroma, strawberry aroma. These attributes contribute positively to taste perception. unripe strawberries scored higher for negative aspects such as sourness, green aroma, bitterness and astringency. In addition unripe strawberries showed high score for overall firmness and seed firmness whereas ripe strawberries scored higher for mealiness. For ripe strawberries - during shelf life - the scores for firmness, aroma liking and strawberry aroma decreased. For unripe strawberries, during storage time, sweetness, green aroma and fibred (fibrous mouth feeling), decreased, while mealiness, sourness and prickling increased.

Maturity stage

The effect of maturity stage on taste and flavour is far stronger than the effect of length of storage. Ripe strawberries correlated with the perception of pleasant fruity aromas and sweetness. The changes in flavour and taste perception during shelf life differ significantly between ripe and unripe strawberries. Ripe strawberries lose strawberry aroma and are less appreciated by the consumer. Unripe strawberries are perceived as even less sweet. The score, for pleasant aroma of unripe strawberries, does not increase over storage time.



Information

Fatima Pereira da Silva
T +31 (0)317 48 02 32
E fatima.pereiradasilva@wur.nl
www.wur.eu/greenchainge