

Sensory Evaluation of the Appearance Quality of Broccoli Using Digital Photographs.



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Objetive

The objective was to compare appearance quality evaluation of broccoli using trays of the real product on the one hand and using digital photographs of the same trays on the other.

Methodology

A panel of 8 assessors was trained in the use of a 6-point degree of quality scale, with 0 corresponding to fresh broccoli (Figure 1) and 5 to a completely spoiled broccoli (Figure 2). Samples with different storage times (0, 4, 6, 11 and 26 days at 10C) were used for evaluation. Three trays were used for each storage time; this made a total of 15 trays. Each tray contained approximately 300 g of broccoli heads. The 15 trays were presented to assessors coded with 3-digit numbers and in randomized order. As soon as the real trays had been evaluated, their photographs were taken with a Sony DSC-W55 digital camera under the same standardized lighting as used by assessors to evaluate the real trays. A week after having evaluated the real trays, the same 8 assessors measured the appearance quality of the digital photographs on PC monitors. Assessors were not aware of any relationship between the real trays and the corresponding photographs.

Results

Analysis of variance showed that there were no significant differences between evaluations of the real tray and the corresponding photograph. As an example, for 11 days storage the quality averages for the real tray evaluation and the photograph evaluation were 3.6 and 3.7, respectively; standard error of the difference was 0.17. Figure 3 shows the results of both methodologies.

Conclusion

There are a number of situations in which the possibility of evaluating a photograph instead of the real product would be advantageous. One of many examples would be if a market-place survey of broccoli quality were to be conducted in different cities; the use of photographs would be more practical than transport and storage of samples.



Figure 1: Fresh broccoli



Figure 2: Spoiled broccoli

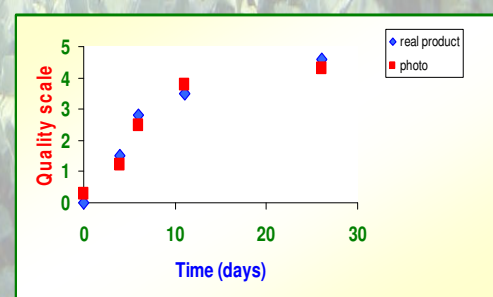


Figure 3: Results of both methodology, real product and digital photographs