Comparison of Descriptive Analysis Panels, Projective Mapping and Sorting Performed on Pictures of Fruit and Vegetable Mixes

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Aim

Aim of this picture based study was to compare the outcomes of:
• Quantitative descriptive analysis (QDA) performed in Denmark (DK) and California (US).
• Sorting and Projective Mapping (PM) performed in California.

Procedure

Conclusions

• Pictures were successfully evaluated by QDA, sorting and PM. Both QDA panels differentiated among pictures. The Danish QDA panel was better at differentiating pictures on freshness whereas the Californian panel had better panel performance.
• Results from sorting and PM were similar but PM gave a more detailed picture and was more comparable to QDA.
• Sorting and PM did not give as detailed a picture as QDA. Especially the difference in freshness was not detected.

Sensory methods

Increasing focus is put on developing and testing faster and less restricted methods compared to QDA. Two of these methods are sorting and projective mapping (PM). During sorting, samples are grouped while in PM samples are dispersed in a two dimensional space.

Results

V1 V2 V3 V4 V5 V6 V7 V8
F1 F2 F3 F4 F5 F6 F7 F8
F1+4 F2+4 F3+4 F4+4 F5+4 F6+4 F7+4 F8+4

QDA – DK
N=10
Evaluated in triplicate
Self generated terms

QDA – US
N=11
Evaluated in triplicate
Danish generated terms

Sorting
N=11 (same as for PM)
Evaluated in duplicate
No attribute guidelines given
Groups and descriptors

PM
N=11 (same as for Sorting)
Evaluated in duplicate
No attribute guidelines given
Coordinates and descriptors

Canonical Variate Analysis (CVA)
Multidimensional Scaling (MDS)
→ Multifactor analysis (MFA)

8 pictures of bell peppers varying in cut and color (V1-V8)
8 pictures of fruit varying in cut, mix of grapes and presence of blueberries (F1-F8)
8 pictures of the same 8 fruit mixes as above but stored for 4 hours (F1+4-F8+4)
8 pictures of fruit and vegetables varying in color of bell peppers presence of grapes, blueberries and

Better separation of fresh fruit (F) samples and 4 hours old fruit (F+4) samples by the Danish panel
Agreement between DK and US panel but better separation of samples and larger explained variation by the Californian panel

QDA: 4 distinct groups found with QDA.
PM: Similar 4 groups found with PM. One group divided in two according to the presence of vegetables in the mix
Sortig: Less separation of samples. Separation of samples according to the presence of fruit and vegetables in the mix

Acknowledgements

This study is part of the project Cool Snacks sponsored by FØSU who we gratefully acknowledge.