



**E505**

### **Comparison of traditional and virtual reality sensory testing**

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Virtual Reality (VR) applications in the food industry are considered innovative to enrich the interactions among consumers, food products, and context. The study aimed to compare the differences between traditional and VR sensory booths (SB) on the sensory responses of consumers towards lemonades with different sweetness levels. HTC Vive Pro Eye headset and Leap Motion Sensor were used to set up a virtual SB. Forty-two (42) participants had been recruited from the Hungarian University of Agriculture and Life Sciences, Hungary. All participants were needed to test in traditional and virtual SB in two separate days at least a day apart from each other. The lemonade samples had three (3) different sugar concentrations (10%, 20%, and 30%), and the participants rated them on a nine (9)-point hedonic scale (sweet, sour, and overall liking) where 9 is the highest and 1 is the lowest were measured under traditional and virtual SB. The results showed that the liking scores of virtual SB were slightly higher than traditional SB, but there is no significant difference between the traditional and virtual SB ( $p$ -value  $> 0.05$ ). Based on the hedonic score, 20% sugar concentration was preferred as the mean rating for sweet, sour, and overall liking was the highest, 30% sugar concentration was next in line and 10% sugar concentration was the least preferred. Meanwhile, a short question regarding the mechanics and user experience which 9 is the highest and 1 is the lowest [1. The level of immersion ( $7.4 \pm 1.7$ ); 2. The quality of the graphics ( $7.3 \pm 1.5$ ); 3. Pick up and/or place items in the virtual environment ( $7.1 \pm 1.9$ ); 4. The quality of the VR technology overall ( $7.9 \pm 1.1$ ); 5. Overall experience with VR ( $8.2 \pm 1.2$ )] in the virtual SB also had been asked. Based on the mean score the virtual SB it was a positive response from the participants on the acceptability of the virtual SB. This research gives an insight into the first-of-its-kind approach for the investigation of VR in a fast-changing scientific worldview to include context. VR has a significant potential to develop practical, advanced immersive applications in the food industry.

**E506**

### **Estimation of important milk constituents from milk samples using artificial intelligence**

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Milk quality is an important factor both for the farmers to be able to sell their product and for the milk industry to be able to plan its production based on quantity and quality. Milk quality and hygiene has a direct link with cow health, more specifically with udder health. One of the most common udder disease is mastitis. One of the widely used marker for udder health is the somatic cell count (SCC) which is considered to be the most suitable indicator trait for mastitis. Milk protein products are widely used in food industry because of their unique properties that cannot be replaced by other proteins in certain food application. Milk composition affects for eg. cheese yield and quality. Casein is the protein utilized to make cheese.

We choose to predict casein and SCC in milk samples which would yield a great economical benefit. In our presented research we use collected historical milk data from different milking robots. We built a model using machine learning technique to predict the casein and SCC content of milk samples ahead of time. With this result we can help farmers and producers to better plan their productivity.

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