

Chronological change of sensory evaluation characteristics of rice

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【Aim】

Temporal Dominance of Sensations (TDS) is a technique for assessing the sensory perception of food samples. Participants assess repeatedly which sensory attribute is dominant among sensory attributes in the sensory examination. It has attracted much attention in recent years. In this study, we examined the characteristics of cooked, famous Japonica rice using this method.

【Methods】

The three types of samples, Koshihikari (Unuma), low protein rice (Niigata prefecture) and Milky Queen (Shiga) were used in the experiment. Twenty female college students participated in the experiment. Nine texture attributes were used as sensory attributes.

In the case of TDS, the sensory participants put approximately 10g of rice in their mouth at first, then they clicked the Start button at the same moment as they began chewing. Then they selected the dominant attribute within one minute. They clicked the End button concurrently with finishing a sample.

Moreover, the samples were examined in another way using the Check-all-that-apply (CATA) method. Eleven attributes were used to make a checklist of sensory attributes. The sensory participants checked all attributes that applied to each given sample. The frequency of checked attributes was summed up for each sample and a correspondence analysis was conducted. The three types of samples and the eleven attributes are expressed in the two dimensional map by the analysis.

【Results】

The cooked rice of Koshihikari was evaluated as chewy first and resilient second. The cooked low protein rice was evaluated as sticky first and chewy, resilient and soggy second. The cooked Milky Queen rice was evaluated as chewy first and light second. From these results the examination was able to capture the characteristics of each sample.

The results of CATA are shown in the two dimensional map. The cooked Koshihikari rice was close to the attributes of resilient and hard, the cooked low protein rice was close to the attributes of dislike and sticky, the cooked Milky Queen rice was close to the attributes of sweet smell, sweet and sour on this map.

【Conclusions】

In this evaluation of cooked rice by using TDS, it was found that the sensory characteristics of cooked rice change over time. The relationship between the results of TDS and those of CATA is a problem left for the future.