Proceedings of the Nutrition Society (2009), **68 (OCE1)**, E55 doi:10.1017/S0029665109001967

OCE Malnutrition Matters, Joint BAPEN and Nutrition Society Meeting, 4–5 November 2008, Harrogate

The effect of saccharide type on sweet perception and preference of oral nutritional supplements by elderly individuals

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Six of ten older individuals are at risk of becoming malnourished or their situation becoming worse in hospital[(1)]. Oral nutritional supplements (ONS) can have beneficial effects on nutritional status; however, the compliance of consumption is poor. It has been found that the greatest wastage is on elderly care wards, with patients reporting disliking the taste (72%) and sweetness (56%)[(2)]. A further study has reported age-related differences in preferred sweetness level, which are in line with increased detection and recognition thresholds for sweetness, an overall dislike of ONS and dislike of the sweetness level of ONS vanilla products[(3,4)].

The hypothesis of the present study was that reducing the sweetness of ONS would alter older individual's perception and preference of the products. Alternative saccharides were used in a model recipe of vanilla ONS. The sensory profiles of the modified ONS were evaluated by an analytical sensory panel (n 8) and correlated with acceptability data (nine-point hedonic scale) collected from a healthy older volunteer group (n 25; age range 65–84 years). Complete replacement of sucrose with Palatinose^{TM} (BENEO-Palatinit GmbH, Mannheim, Germany), resulted in a profile of reduced sweetness ($P<0.001$) and dairy flavour ($P=0.05$). Changing 25% glucose syrup for low-dextrose equivalent maltodextrin (LDMD) further reduced sweetness, but significantly increased viscosity ($P=0.007$).

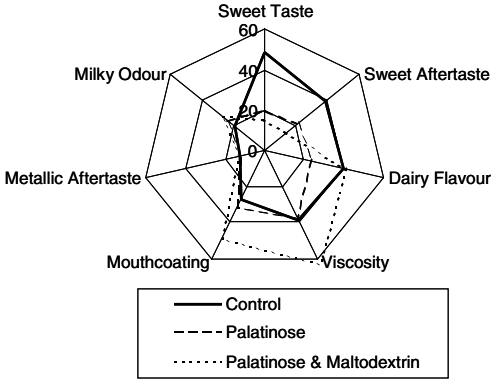

Figure 1. Effect of Saccharide on Profile on ONS.

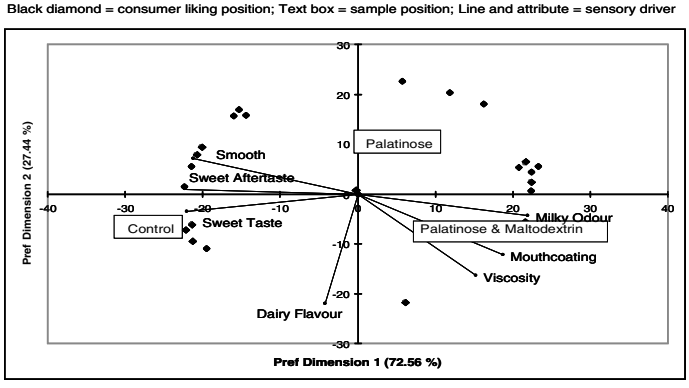

Figure 2. Preference Map of ONS Vanilla Modifications.

Older consumers perceived the reduction in sweetness ($P<0.0001$). Preference was split between consumers who preferred less-sweet variants and those who preferred the sweeter control. The viscosity of the LDMD modification was not liked. It would appear that altering the saccharide content of these products is a viable route that may increase their acceptability and ultimate consumption. Further work will investigate if there is a difference in preference between ONS of different sweetness levels on consumption of greater quantities, in line with the typical pack size (200 ml).

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