**Off Flavour Development and Viscosity Changes in high Oat Fibre UHT Model Beverages**

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Ultra-high temperature (UHT) processed liquid breakfast beverages represent a growth area in the breakfast cereal category. The nutritional profile of these types of products can be improved by adding dietary fibre or using whole grain ingredients. To preserve the insoluble fibre component yet provide acceptable mouthfeel properties, cereals added as beverage ingredients are usually finely ground which greatly increases the rate of oxidation and hydrolysis of constituents after UHT processing. As a result significant changes in the organoleptic properties of the beverage can occur during shelf life. Few studies of these changes related to whole grain high fibre cereal ingredients in model food systems after UHT processing have been reported to date.

 Oats are a widely consumed breakfast grain and a prime candidate for inclusion in liquid breakfast formulations. In this study finely ground orange fibre, kibbled wheat, oat flour or oat fibre whose particle size distribution ranged over an order of magnitude from 372 to 35 microns were added to a model liquid breakfast formulation. UHT processing resulted in significant changes in particle size and viscosity occurring during storage time. Chromatographic analysis of a wholegrain oat model beverage system confirmed the production of significant levels of the malodourous compounds hexanal and p-vinyl guaiacol (PVG) during storage. A trained sensory panel was able to quantify the hexanal and PVG levels with consistent correlation between sensory and Chromatographic analysis. Ratio of the odour activity values (OAV) plotted against time shows that although PVG aroma initially is dominant, hexanal aroma, with a ratio of about 0.5, has twice the intensity of the PVG aroma for the remaining 29 days.

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