321 - Strategies to enhance saltiness in food involving cross modal interactions

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This review presents a series of results on cross modal odor-taste interactions as a mean to enhance salty taste in food. Salt-related odors can enhance salty taste in water solutions containing a low level of sodium chloride through odor-induced changes in taste perception. Odor-induced saltiness enhancement (OISE) depends on salt concentration (intensity) and was no more significant in high salt-content water solutions. OISE was also found effective in low-salt content solid model cheese, but modulated by texture. A significant saltiness enhancement induced by the comté cheese and sardine odors was observed for softer textures only. In ternary odor-sour-salty solutions, sourness enhanced saltiness additively with salt-related odors. Finally, in real food systems, a strategy combining OISE and heterogeneous distribution of stimuli was found to compensate for over 25% decrease in salt-content without significant loss of acceptability. These results will be discussed with regard to diffusion and sodium mobility in food matrices.

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