

Sodium reduction: Optimizing product composition and structure towards increasing saltiness perception

Abstract

Three main principles towards sodium reduction in food products can be discriminated: chemical stimulation to increase the saltiness perception peripherally, cognitive mechanisms towards increasing awareness or shifting the saltiness preference, and designed product structures that attempt to optimize the delivery of salt to the taste buds. Such designed product structures affect the way salt is released from the product structures or transported to the taste receptors during mastication and may be based on the format or the spatial distribution of the salt, its encapsulation methods or the bulk texture of the product. This review provides an overview of the different principles for sodium reduction in food products, with further elaboration on the third principle which has gained increasing attention in the past few years. In particular, the different methods and mechanisms underlying these product structure designs and their reported successes and challenges are discussed.