Influence of texture on the perception of saltiness in wheat bread

As a basis for sodium reduction in bread, the influence of crumb texture on the intensity of saltiness and the release of sodium ions during chewing was investigated. A coarse-pored bread crumb was created by extending the proofing time (90/120 min vs 20/40 min as control), whereas the omission of proofing resulted in a fine-pored crumb (0/0 min). A significantly faster sodium release from the coarse-pored bread compared to the fine-pored bread (constant sample weight) was measured in-mouth and in a mastication simulator. This explained the significantly enhanced salty taste of the 90/120 min bread. Corresponding experiments with constant sample volumes revealed a significantly enhanced saltiness despite similar amounts of extracted sodium during the first seconds of chewing. Therefore, saltiness was influenced both by the velocity of sodium release and by crumb texture. Appropriate modification of crumb texture thus leads to enhanced saltiness, suggesting a new strategy for salt reduction in bread.