

Session II Lecture 3

Development of Food Products Integrating Palatability and Health Benefits Through the Utilization of Vinegar

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Summary

Since antiquity, vinegar has been integral to human civilization. In ancient Babylon, vinegar was produced from dates and dried grapes, with its acetic acid component serving preservative functions. Hippocrates reportedly utilized vinegar therapeutically for disease treatment and post-illness recovery. Building on this historical foundation, we have investigated the diverse health benefits of dietary vinegar consumption, substantiating its effects on blood pressure reduction and visceral fat decrease—key factors in lifestyle disease prevention. Our recent research extends beyond disease prevention to elucidate the mechanisms by which blood acetic acid concentration changes translate into health benefits. However, vinegar's characteristic sourness—stronger than other organic acids at equivalent concentrations—inherently reduces palatability. We have identified spice-derived compounds, including cardamomin, that suppress acetic acid's pungent effects. Leveraging the sweet-and-sour flavor combinations found globally, we continue optimizing the palatability of health-promoting vinegar. Importantly, while acetic acid contributes to health, balanced nutrition remains essential. Vinegar facilitates nutrient absorption from food, amplifying its nutritional role. The integration of traditional fermented foods with contemporary taste science may achieve the dual objective of health and palatability—much as vinegar has been valued since ancient Babylon.