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Secondary plant metabolites - influence on food quality and flavor

Numerous epidemiological studies have revealed a reverse trend between the amount of fruit and vegetable consumption and the appearance of chronic diseases. Plant compounds that are at least responsible for this health-promoting effect are secondary metabolites. Currently, more than 100,000 phytochemicals are described and many thousands are found in our food including alkaloids, carotenoids, glucosinolates, phytosterols, polyphenols and saponins.

In recent years, demands concerning the quality of foods are changing and consumers expect safe, high-quality plant foods. Food quality characteristics are related to appearance, aroma, and taste, but increasingly also to functional and nutritional benefits such as concentration and composition of secondary plant metabolites.

In our focus are secondary metabolites, relevant for plants consumed as food, e.g. carotenoids and derived key scent compounds. We will be looking at selected examples of the elucidation of biosynthesis pathways and the effect of ecophysiological conditions on physiological and biochemical processes in plants. In addition, we will present how secondary plant metabolites can impact aroma and food quality.

CV

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- 2009 - 2011 Research Associate, Graduate School of Science and Technology Shizuoka University, Japan
- 2007 – 2009 JSPS Post-Doctoral Fellow, Shizuoka University, Japan
- 2003 – 2007 Doctoral Studies at the Institute of Food Chemistry, TU-Braunschweig, Germany with research visits at the National Institutes of Health, Bethesda, USA (2006) and Shizuoka University, Japan (2003)
- 1996 - 2002 Study of Food Chemistry, TU-Braunschweig and Practical Education for Food Chemists in Lower Saxony, Germany