

**15th International Conference on Food Processing & Technology
October 29th, 2016 - Rome, Italy**

Title: Naturality and Processing of Stevia



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Biography

She has completed her PhD from Rheinische Friedrich-Wilhelms-Universität Bonn, Germany. She is a food chemist and tenured academic Councilor in the Department of Nutrition and Food Sciences, University of Bonn. Her academic research is focused on steviol glycosides, the natural origin sweet compounds of the stevia plant. She has published several papers on the analysis of steviol glycosides and their stability in food. Dr. Ursula Wölwer-Rieck is also a board member of the European Stevia Association (EUSTAS).

Abstract

Steviol glycosides, natural sweeteners of the shrub *Stevia rebaudiana* Bertoni, have been authorised in Europe as sweeteners with a purity of more than 95%, since 2011. Their use is widespread worldwide in the food industry and is still growing as they are, in contrast to high intensity artificial sweeteners, of natural origin and stable during food processing. Their manufacturing process is laid down in the EU Regulation 1131/2011 and starts with hot water extraction of the dried leaves, followed by several purification steps to remove further constituents of the plant. After crystallisation and spray drying a white powder with a purity of 95% is obtained. The purpose of this work was to show that all processing steps do not affect the chemical identity of steviol glycosides. Three different sample batches provided by PureCircle, each containing the dried leaves, the first water extract and the end product with more than 95% purity of the same production batch were analysed by UV-HPLC on a RP- and a HILIC-column as well. The USP-standard containing nine steviol glycosides as described by JECFA (2010) was used as reference. It was possible to separate and identify eight steviol glycosides on the RP-phase within seven minutes, while rebaudioside D was clearly detected on the HILIC-column. All of the nine steviol glycosides required by JECFA were detected in the leaves, water extract and the 95% high purity end product of each of the corresponding production batches. These data indicate that steviol glycosides are not affected nor is their chemical identity modified by the manufacturing process, providing evidence for the naturality of high purity stevia leaf extract sweeteners.