



Tropentag, September 19-21, 2012, Göttingen -
Kassel/Witzenhausen

“Resilience of agricultural systems against crises”

Carotenoids and Carotenoid Derived Compounds in *Pandanus amaryllifolius* from Indonesia

ANDRIATI NINGRUM, NHUT NGUYEN MINH, MATTHIAS SCHREINER

University of Natural Resources and Life Sciences (BOKU), Institute of Food Science, Austria

Abstract

In Indonesia, several herbal leaves also generally for condiments to improve aroma and flavor in foods e.g. pandan leaves. *Pandanus amaryllifolius* leaves, commonly known as pandan, are often used to give a refreshing, fragrant flavor to both sweet and savoury South-East-Asian dishes (rice, chicken, jellies, drinks, puddings, custard or sweets). Pandan leaves are also used in cooking ordinary non-aromatic rice to imitate the more expensive aromatic Basmati and Jasmine rices. As a traditional herbal this leaves are generally used to treat the typhus illness in Indonesia. The effect of antimicrobial effect of *Pandanus amaryllifolius* leaves have been investigated on the preservation of stored milk.

In this research the general objective is to investigate the formation of natural aroma compounds (norisoprenoids) from carotenoids as an approach for “green technology” application that can be applied for further application in flavors or fragrance industries. At the beginning we used *Pandanus amaryllifolius* leaves from Indonesia as a model plant. Several natural resources in Indonesia as one of developing countries have not yet been fully utilised and have low economical values, so that give further impact for the food security in Indonesia and thus correlated to the sustainable development.

In our preliminary research, we have investigated carotenoids (β -carotene and lutein as major carotenoids) which are potential as enzymatic precursors by HPLC RP-C18. Carotenoid derived compounds or norisoprenoids (α -ionone and β -ionone) as putative enzymatic reaction products are identified by HS-SPME GC-MS as one approach for solvent-less flavor analysis which is suitable to green chemistry. These analytical approaches are used to investigate the enzymatic reaction activities in this model plant.

Keywords: Indonesia