

SPICES/CONDIMENTS

NPARR 3(3), 2012-0301, Effects of high hydrostatic pressure on color of spinach purée and related properties

Changes in instrumental color parameters, chlorophyll *a* and *b*, activity of chlorophyllase, Mg-dechelataase, peroxidase and polyphenol oxidase, total phenolic compounds and pH of spinach purée were assessed after high hydrostatic pressure (HHP) (200, 400 and 600 MPa for 5, 15 and 25 min) treatments at room temperature. HHP treatments induced a better retention of visual green color ($-a^*$ and L^* values) and chlorophyll contents of spinach purée. As for chlorophyll degradation-related enzymes, the results indicated that chlorophyllase activity decreased at all pressures; however, Mg-dechelataase activity was dramatically activated after HHP treatment at 400 and 600 MPa. Peroxidase exhibited higher resistance to HHP; however, polyphenol oxidase, which is responsible for enzymatic browning, was suppressed progressively with increase in pressure level from 200 to 600 MPa. In addition, the pH value of HHP-treated spinach purée was increased to be close to neutral pH, which could effectively inhibit chlorophyll degradation. No significant differences ($P > 0.05$) were found after extending the treatment times at the same level of pressure. HHP treatments effectively prevent chlorophyll degradation and enzymatic browning in spinach purée and retain a better original fresh green color of spinach compared with conventional thermal treatment [Rongrong Wang, Tingting Wang, Qian Zheng, Xiaosong Hu, Yan Zhang* and Xiaojun Liao (College of Food Science and Nutritional Engineering, China Agricultural University, Beijing 100083, China), *Journal of the Science of Food and Agriculture*, 2012, **92**(7), 1417-1423].

NPARR 3(3), 2012-0302, An important spice, *Pimenta dioica* (Linn.) Merrill: A Review

Pimenta dioica (Linn.) Merrill. Family: Myrtaceae, well known for its berries called Pimento, has been used as an important spice since time immemorial, for its culinary as well as medicinal qualities. It is also known as Allspice due to its intricate aroma which is a medley of aroma from spices such as Clove, Nutmeg and Cinnamon. In India, the leaves of *Pimenta* are used to flavor rice which gives it a typical aroma. Traditional culinary practice uses the dried berries for marinating meat. Various compounds have been isolated from the plant which belongs to categories like phenylpropanoids, tannins, glycosides and essential oil. The present article is a humble effort to study the work done till date on this important spice [Priya S Rao, Sheth Navinchandra, KN Jayaveera, *International Current Pharmaceutical Journal*, 2012, **1**(8), 221-225].

NPARR 3(3), 2012-0303 Chemopreventive effects of cardamom (*Elettaria cardamomum* L.) on chemically induced skin carcinogenesis in Swiss albino mice

The chemopreventive potential of cardamom was evaluated on 7,12-dimethylbenz[*a*]anthracene-initiated and croton oil-promoted mouse skin papillomagenesis. A significant reduction in the values of tumor incidence, tumor burden, and tumor yield and the cumulative number of papillomas was observed in mice treated orally with 0.5 mg of cardamom powder in suspension continuously at pre-, peri-, and post-initiation stages of papillomagenesis compared with the control group. The average weight and diameter of tumors recorded were also comparatively lower in the cardamom-treated mouse group. Treatment of cardamom suspension by oral gavage for 15 days resulted in a significant decrease in the lipid peroxidation level of the liver ($P < .01$). In addition, the reduced glutathione level was significantly elevated in comparison with the control group ($P < .05$) following cardamom suspension treatment.

Taken together, these findings indicate the potential of cardamom as a chemopreventive agent against two-stage skin cancer [Samir Qiblawi, Awdah Al-Hazimi, Mohammed Al-Mogbel, Ashfaque Hossain, and Debasis

Bagchi*(Department of Pharmacological and Pharmaceutical Sciences, University of Houston College of Pharmacy, Houston, TX 77204, USA), *Journal of Medicinal Food*, 2012, **15**(6), 576-580].