SPICES/CONDIMENTS

**NPARR** 4(4), 2013-0399 *Impact of blanching on polyphenol stability and antioxidant capacity of innovative coriander (Coriandrum sativum L.) pastes*

Fresh coriander leaves were steam- and water-blanched at 100 °C and at 90 and 100 °C, respectively, for 1–10 min, and subsequently comminuted to form a paste. Pasty products obtained from coriander fruits were processed after water-blanching applying the same time-temperature regimes. Among the 11 phenolics characterised in leaves by high-performance liquid chromatography coupled to mass spectrometric detection, several caffeic acid derivatives, 5-feruloylquinic and 5-p-coumaroylquinic acids were tentatively identified for the first time. In fruits, 10 phenolics were detected, whereas rutin, a dicaffeic acid derivative and two feruloylquinic and caffeoylquinic acid isomers were newly detected. Upon steam-blanching for 1 min, phenolic contents and antioxidant capacities remained virtually unchanged. In contrast, water-blanching and extended steam-blanching even yielded increased levels compared to the unheated control, whereas short-time water-blanching resulted in higher values than prolonged heat treatment. Thus, short-time water-blanching is recommended as the initial unit in the processing of coriander leaves and fruits into novel pasty products [Andrea Kaiser*, Dietmar R. Kammerer and Reinhold Carle (Hohenheim University, Institute of Food Science and Biotechnology, Chair Plant Foodstuff Technology, Garbenstrasse 25, D-70599 Stuttgart, Germany), Food Chemistry, 2013, 140 (1-2), 332–339].

**NPARR** 4(4), 2013-0400 *Impact of Cumin variety (GC-4) under semi-arid conditions of Rajasthan*

Impact assessment of demonstrations was carried out on cumin (variety-GC-4) and net additional return over farmers practice during Rabi seasons of 2010–11 and 2011–12. The data revealed that the yield in demonstration plots increased from 16.22 to 18.91% over farmers practice during the study period. Similarly, the economic analysis of data indicated higher B:C ratio. The adoption of variety GC-4 ranged from 78 to 98% in operational as well as in nearby villages. The use of improved variety GC-4 of cumin under semi-arid conditions of Nagaur proved superior with respect to adoption by farmers and productivity levels [GarhwalOmprakash*, Arora Dinesh, Jakhar Mohan Lal*, Choudhary Mali Ram, (Department of Plant Breeding and Genetics, SKN College of Agriculture, Jobner, Jaipur, Rajasthan, India), International Journal of Life Sciences, 2013, 2(2), 97-99].

**NPARR** 4(4), 2013-0401 *HPTLC Profile of Important Indian spices used in Ayurvedic Formulations*

Plant derived spices are generally used in foods for flavoring and medicinal purposes. Spices have been shown to possess medicinal value, such as antimicrobial activity, antioxidant, anticancer, anti-inflammatory activity etc. Several spices particularly Tejpatta (Cinnamomum tamala), Souff (Foeniculum vulgare), Jeera (Cuminum cuminum), Methi (Trigonella foenum-graecum), Ajwain (Trachyspermum ammi), Dhaniya (Coriandrum sativum), Kali Mirch (Piper nigrum), Kalonji (Nigella sativa) are used extensively in the Indian diet and in ayurvedic medicines. Development of standard procedure through HPTLC is a new approach which may lead to proper standardization of different spices and ayurvedic drugs based on fingerprinting characteristics. HPTLC Fingerprinting technique is widely employed in pharmaceutical industry in process development, identification and detection of adulterants in herbal product and helps in identification of pesticide content, mycotoxins and in quality control of spices and herbs. The

NPARR 4(4), 2013-0402 Post harvest storage losses by cigarette beetle (*Lasioderma serricorne* Fab.) in seed spice crops

A laboratory study was conducted to determine the damage and reproductive potential of *Lasioderma serricorne* Fab. on some seed spice crops, viz., cumin, coriander, fennel, *ajowan* and dill at different storage conditions. The result showed that beetle causes huge storage losses which were maximum in fennel seed (58.02%) and minimum in dill seed (39.0%). Population growth was also related to damaging potential on different seed spices. Maximum population of insect was recorded in fennel seed and minimum in dill seed. In case of quarter monthly observation, maximum damage and reproduction was noticed in July to September and minimum in the month of January to March in seed of coriander, *ajowan* and cumin and April to June in case of fennel and dill [Kant Krishna*, Ranjan J.K., Mishra B.K., Meena S.R., Lal G., Vishal M.K. (National Research Centre on Seed Spices, Tabiji, Ajmer 305206, Rajasthan), Indian Journal of Horticulture, 2013, 70(3), 392-396].

NPARR 4(4), 2013-0403 Potential health benefits of major seed spices

The seed spices constitute an important group of agricultural commodities and play a significant role in our national economy. Historically, India has always been recognized as a land of spices. The crops covered as major seed spices are coriander, cumin, and fennel are the member of umbelliferae and fenugreek is belongs to family Fabaceae. These spices are collections of a wide variety of volatile and non-volatile staple dietary additives. These spices have been known for ages as effective therapeu tic food. The power of seed spices to impart biological activity is now slowly re-emerging as an area of interest for human health. Seed spices produce numerous secondary metabolites or phytochemicals, these are naturally occurring, biologically active chemical compounds in plants, where they act as a natural defence system for host plants and that have historically been used as pharmaceuticals, fragrances and flavor compounds. They are a gold mine of possibilities in our search for beneficial bioactive compounds for pharmacology and other health related issues. Seed spices influence various systems in the body such as gastrointestinal, cardiovascular, and reproductive and nervous systems resulting in diverse metabolic and physiologic systems. Seed spices have a diverse array of natural phytochemicals that have complementary and overlapping actions, including antioxidant effects, Anticancer, Antidiabetic, Antimicrobial Activity, Hypolipidemic effect, Insecticidal, useful in menstrual disorders, helping in digestion, Hypertension, Modulation of detoxification enzymes, stimulation of immune system, reduction of inflammation, modulation of steroid metabolism and helps in improve other several human disorder. The present review is an effort to present a consolidated report on the current status of research related potential human health benefits of four major seed spices namely Cumin, Coriander, Fennel and Fenugreek [S. S. Rathore*, S. N. Saxena and Balraj Singh (National Research Institute on Seed Spices, Tabiji, Ajmer-305206 (Raj.), International Journal of Seed Spices, 2013 3(2), 1-12].