BEVERAGES (incl. Juices, Tea /Coffee, Yoghurt and other natural soft drinks)

NPARR 4(2), 2013-0120 Non dairy probiotic beverages (Short Survey)

The beneficial effects of food with added live microbes (probiotics) on human health are being increasingly promoted by health professionals. Probiotic products available in the markets today, are usually in the form of fermented milks and yoghurts; however, with an increase in the consumer vegetarianism throughout the developed countries, there is also a demand for the vegetarian probiotic products. And, owing to health considerations, from the perspective of cholesterol in dairy products for the developed countries, and economic reasons for the developing countries, alternative raw materials for probiotics need to be searched. Considering the above mentioned facts cereals, legumes, fruits and vegetables may be potential substrates, where the healthy probiotic bacteria will make their mark, both in the developing and the developed countries. This review aims at highlighting the research done on probiotic beverages from non dairy sources. These non dairy probiotic beverages can serve as a healthy alternative for dairy probiotics and also favor consumption by lactose intolerant consumers [Vasudha, S. and Mishra, H.N.* (Agricultural and Food Engineering Department, Indian Institute of Technology, Kharagpur-721 302, India), International Food Research Journal, 2013, 20(1), 7-15].

NPARR 4(2), 2013-0121 Studies on the preparation and storage stability of blended ready-to-serve from ber (Zizyphus mauritiana Lamk.) and jamun (Syzygium cumini Skeels.) pulp

An experiment was conducted to study the feasibility of blending of ber and jamun fruit juices in different blending ratios and recipes for the preparation of blended ready-to-serve (RTS) beverage and asses their storage life at ambient temperature. The prepared blended RTS were organoleptically evaluated by adopting 9 point Hedonic scale. Among the different blending ratios and recipes tried for RTS beverage, 10% blended pulp (25% ber pulp + 75% jamun pulp) with, 13% TSS and 0.2% acidity was found to be the best on overall sensory score. Blended RTS stored in glass bottles and physico-chemical changes during storage were also studied at monthly intervals. Total soluble solids and acidity did not change upto one month and two month, respectively then increased gradually whereas browning increased continuously during storage. Ascorbic acid content did not change upto one month and then decreased gradually whereas organoleptic score decreased continuously during entire period of storage. The appearance, colour, flavour, taste and overall acceptability of blended RTS were found to be good upto five months of storage at ambient temperature [Jakhar, M.S. and Pathak, S.* (Department of Post Harvest Technology, College of Horticulture and Forestry, Narendra Deva University of Agriculture and Technology, Kumarganj - 224 229, Faizabad (U.P.), India ), Plant Archives, 2012, 12(1), 533-536]

NPARR 4(2), 2013-0122 Development of a cost-effective, palatable and shelf-stable blended beverage of pummelo (Citrus grandis Linn.)

Natural beverages face strong competition from synthetic drinks in the open market. Creation of diversity in natural products is a key strategy to withstand this competition. Pummelo (Citrus grandis Linn.) is one such potential fruit which could be exploited on a commercial scale if processed properly. The bitterness of pummelo juice is a serious handicap in its utilization. The present study aimed at preparation of a cost-
effective, palatable blended beverage of pummelo. To overcome this problem, pummelo was blended with mango ginger and kokum juice in the ratio of [65:30:5] for the preparation of syrup. The product was stored for 120 days in ambient conditions of storage and analyzed for changes in its physicochemical constituents. Total soluble solids and total sugar increased during storage, while titratable acidity and ascorbic acid content decreased slightly during storage. Organoleptically, the best recipe was 25% juice, 70 °Brix total soluble solids and 1.5% acidity with a score of 6.3 out of 7.0 for overall acceptability. Mango ginger juice suppressed the bitter aftertaste of pummelo juice and imparted its characteristic taste and flavor to the product. The product was shelf-stable and had important medicinal constituents in it. The [total revenue/total cost] ratio of the product was 2.90 [Bohra, P., Sreenivas, K.N., Sreeramu, B.S* (Univ. Agric. Sci., GKVK Campus, Bengaluru-560065, India), Fruits, 2012, 67(4), 249-256].

NPARR 4(2), 2013-0123 Cashew apple (Anacardium occidentale L.) extract from by-product of juice processing: A focus on carotenoids

Cashew apple fibrous residue is a by-product of the cashew juice industry. After pressing using a helical type continuous press followed by crossflow microfiltration, an aqueous extract was obtained from these cashew apple fibres. It was characterised by an intense yellow colour due to carotenoid pigments. Carotenoids were identified and quantified in the cashew apple before extraction, in its aqueous extract and in the concentrate obtained by microfiltration. Cashew apple aqueous extract and its concentrate presented a carotenoid profile with 11 carotenoids, most of them were tentatively identified by HPLC-DAD-MS and are xanthophylls present under an esterified form. Auroxanthin and β-cryptoxanthin represented around 50% of total carotenoids. Concentration of the extract by microfiltration led to epoxy-furanoxy rearrangement of violaxanthin and antheraxanthin. The process allowed an increase of 10 times total carotenoid content compared with initial cashew apple. Total carotenoid content of the final concentrated extract reached 54 mg/kg [De Abreu, F.P., Dornier, M., Dionisio, A.P, Carail, M., Caris-Veyrat, C., Dhuique-Mayer C* (CIRAD, Montpellier SupAgro, UMR QualiSud, TA-B95/16, 34398 Montpellier cedex 5, France), Food Chemistry, 2013, 138(1), 25-31].

NPARR 4(2), 2013-0124 Studies on development of soymilk based mango RTS beverage

In the present investigation aim to reduce the beany flavor of soymilk and develop fruit flavored soy beverage. The RTS (Ready-to-serve) beverage was prepared by blending soymilk with mango pulp in different combinations such as 80:20,70:30, 60:40 and 50:50 and analyzed for various physico-chemical and sensory characteristics for its overall acceptability. The study revealed that the RTS beverage prepared by blending the soymilk and mango pulp in the equal proportion (50:50) was found better in almost all physico-chemical and sensory quality parameters as compared to the other combinations [Sakhale, B.K*. Pawar, V.N. and Ranveer, R.C. (Food Technology Division, Department of Chemical Technology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad-431004 (MS), India), Electronic Journal of Environmental, Agricultural and Food Chemistry, 2012, 11(5), 523-528].

NPARR 4(2), 2013-0125 Utilization of Whey for the Production of Instant Energy Beverage by Using Response Surface Methodology

Whey is obtained from dairy industries. It is generally disposed into sewage which creates major problem of pollution besides the loss of valuable nutrients. The process of whey utilization involves higher processing cost. Therefore, the aim of the present work was to
develop low cost nutritious whey beverage for hard working group of people. Instant energy Ready To Serve (RTS) whey beverage was prepared by hydrolyzing lactose with immobilized β-galactosidase enzyme, isolated from yeast culture Kluyveromyces marxianus. Sensory attributes, appearance, taste, aroma, overall acceptability and viscosity were the quality control parameters employed for beverage evaluation. Mango pulp concentration, stabilizer and sucrose added in beverage were optimized by the utilization of Response Surface Methodology (RSM). Based on contour plots and variance analysis, optimum values for mango pulp, stabilizer and sucrose were found to be 17.72, 0.17 and 12.0% respectively. The final product exhibited viscosity 1.753 cp. The energy value of prepared beverage was 322±3.08 KJ per 100 mL of product. The electrolyte composition was also found to be almost similar to the desired level [Singh, A.K and and Singh, K* (Biochemical Engineering and Food Technology Department, Harcourt Butler Technological Institute, Nawabganj, Kanpur (U.P.) 208002, India), Advance Journal of Food Science and Technology, 2012, 4(2), 103-111]

NPARR 4(2), 2013-0126  **Innovative use of sweet sorghum juice in the beverage industry**

Sweet sorghum juice, obtained from low water consuming, drought resistant, short duration and seed-propagated sweet sorghum crop, was explored as a source to obtain syrup which can be used as sugar alternative for meeting certain requirements of the beverage industry. Value addition, through conversion of the juice to syrup and beverages, offers farmers an excellent opportunity to improve farm income and productivity in semi arid regions. In this study a new method to produce clarified sweet sorghum juice is demonstrated. The sweet sorghum juice was clarified using pre heating followed by vacuum filtration using a filter aid. The clarified juice was concentrated to syrup with acceptable sensory qualities. Flavoured beverage formulations were optimised using the clarified juice and syrup. Nutritional and sensory properties of the developed beverages showed that the samples were acceptable to the consumers and rated at par with a commercially available beverage. This work has immense industrial and social significance. [Datta Mazumdar, S.*, Poshadri, A., Srinivasa Rao, P., Ravinder Reddy, C.H., and Reddy, B.V.S. (NutriPlus Knowledge (NPK) Program, Agribusiness and Innovation Platform AIP, India), International Food Research Journal, 2012, 19(4), 1361-1366].