

Studies on Nutritional Value and Health Benefits of Citrus Fruit Crops

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Citrus, the largest genus in the family Rutaceae is widely consumed around the world and has become an inseparable part of human diet. Recent developments in horticultural through improved analytical technology have helped to establish the biochemical parameters analysis of citrus fruit chemical constituents. Characterized by their distinctive flavor, citrus fruits are good source of carbohydrates, dietary fiber, many vitamins, minerals, and biologically active phytochemicals such as carotenoids and flavonoid, pro-vitamin 'A' activity and purported antioxidant benefits, respectively. Such nutrient density, the low-fat, low-sodium profiles and associations between citrus fruit intake and prevention of chronic diseases make promotion of citrus consumption important in improved human health. Citrus contains no fat, sodium or cholesterol. Citrus plants synthesize and accumulate in their cells a great variety of phytochemicals including low molecular phenolic hydroxy benzoic and hydroxyl cinnamic acids, acetophenones, terpenoids, flavonoids, stilbenes and condensed tannins. There are about 40 limonoids in citrus with limonin and nomilin being the principal ones. Limonoids possess the ability to inhibit tumor formation by stimulating the enzyme glutathione S-transferase (GST). Flavonoids are another phytochemicals present in citrus fruits which have strong inherent ability to modify the body's reaction to allergens, viruses and carcinogens. They show anti-allergic, anti-inflammatory, anti-microbial and anti-cancer activity. Citrus is the main source of vitamin C (ascorbic acid), an essential water-soluble vitamin, plays a key role in the formation of collagen, a primary component of much of the connective tissue in the body. It is required for connective metabolism especially the scar tissue, bones and teeth and act as a protector against cold, chills and damp. It is necessary as an anti-stress and Vitamin C prevents muscle fatigue and scurvy that is characterized by skin hemorrhages, bleeding gums, fragile bones, anemia and pains in joints and defects in skeletal calcification. Ascorbic acid also accounts for its requirement for normal wound healing which acts as antioxidants in the skin by scavenging and quenching free radical generated by ultra violet radiation stabilization.

Biography:

Dr. Akash Sharma is working as Assistant Professor in the Advanced Centre for Horticulture Research of Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-J). His ground-breaking work on the fruit culture has led to new insights. Further, he significantly advanced the knowledge of fruits by the way of Teaching, Research and Extension. Dr. Sharma holds Ph.D. degree in Fruit Science (Horticulture) from SKUAST-Jammu. His research findings have appeared in several national and international peer-reviewed journals and conferences and have sixty four publications, guided five M.Sc. students, released sucking type of mango variety and has delivered more than fifty lectures in different training programmes to orchardists and departmental functionaries. He already has a substantial body of work, which promises an outstanding career. His theoretical brilliance and creativity, fierce intellectual courage will inspire the upcoming generations of students. He has emerged as one of our best new researchers and thinkers in the area of Fruit Science. His major area of research includes Fruit production technology under changing climate; he is Principal Investigator of one externally funded project on High density orcharding of mango and guava in Jammu sub-tropics and Co-PI of two projects. Dr. Sharma is associated with several professional societies in the area of Horticulture.