## **conferenceseries.com**

JOINT EVENT

# 17<sup>th</sup> World Congress on **Nutrition and Food Chemistry**

Ś

# 14th Euro **Obesity and Endocrinology Congress**

September 13-15, 2018 | London, UK



# Surajit Mitra

Post-Harvest Technology, India

## Nutritional quality and anti-nutritional facts of tropical tuber crops

Tropical tuber crops are used either as a staple or subsidiary food in several countries of South America, Africa and South East Asia, and form the means of sustenance for millions of people in the tropical and subtropical world. Being the rich source of starch, the tubers are used as staple food in many counties. Tubers are boiled, baked, fried or processed into various delicious dishes. Sweet potato, an important member of the tropical tuber crops has a great potential to be an efficient and economic source of energy due to its high production potential in a very short period of time. Both the tubers and tender leaves are good source of vitamin B1, vitamin C,  $\beta$ -carotene, calcium, iron, potassium, sodium and dietary fiber. Sweet potato flour is widely used in bakery and confectionery in some countries. Orange-fleshed sweet potatoes having high  $\beta$ -carotene, the pro-vitamin A can be included in the regular diet to tackle the problem of vitamin A deficiency in developing countries. Purple-fleshed sweet potato having high anthocyanin is also gaining importance as an antioxidant food. Anthocyanins, as a functional food component having free-radical scavenging and antioxidant capacities are linked to a broad-based range of health benefits including improvement in visual acuity and liver function, and the prevention of obesity and diabetes. Increased consumption of purple-fleshed sweet potato tubers rich in anthocyanins, the important members of the flavonoid group of phytochemicals, referred as bioflavonoids can play important roles in maintenance of human health. Sweet potato has now been labeled as an anti-diabetic food and is considered as new world's food security crop. Tubers of sweet potato, elephant foot yam and yams were quantified for proximate contents such as carbohydrate, starch, total soluble solids, sugar, protein, fat, vitamin C, β-carotene, antioxidant, phenol, tannin, oxalate and trypsin inhibitor using standard methods. Irrespective of flesh and skin colour of tubers, a linear increase in dry matter, starch and total sugar content of different cultivars of sweet potato were found throughout the growing periods, while  $\beta$ -carotene content showed an increasing trend only up to 105 days of planting and declined thereafter. A declining trend in ascorbic acid content was observed with the maturity of the tubers. Yam cultivars were found to have high nutrient and low anti-nutrient values. Antioxidant activities of all the cultivars of yam were very high. The *Dioscorea alata* cultivars showed comparatively higher carbohydrate, protein, fat, vitamin C,  $\beta$ -carotene, and antioxidant activities than D. rotundata. A decreasing trend in starch, ascorbic acid, titratable acidity and carbohydrate content of elephant foot yam corms was observed, while total sugars, TSS and phenol contents were found to increase during storage.

### **Recent Publications**

- 1. Devi Chhama, Hynniewta Laureate and Mitra Surajit (2017) Quality evaluation and preparation of jam from sweet potato cultivars. International Journal of Current Microbiology and Applied Sciences. 6(8):1485-1492.
- 2. Soibam H, Singh A V and Mitra, Surajit (2017). Effect of temperature treatment on the chemical composition, microbiology and sensory evaluation of yam chips during storage. Journal of Pharmacognosy and Phytochemistry. 6(5):1705-1711.
- 3. Reddy R et al. (2017) Biochemical evaluation for the selection of suitable processed products in sweet potato cultivars. Journal of Pharmacognosy and Phytochemistry. 6(5):1766-1769.
- 4. Soibam H, Singh A V and Mitra Surajit (2017) Evaluation of nutritional and anti-nutritional components of twelve Dioscorea cultivars. The Pharma Innovation Journal. 6(9):465-469.
- 5. Singh A K, Chaurasiya, A K and Mitra Surajit (2016) Assessment of nutritional composition in elephant foot yam (*Amorphophallus paeoniifolius* Dennst- Nicolson) cultivars. International Journal of Food Studies. 5(2):146-157.

## **conferenceseries.com**

JOINT EVENT

## 17th World Congress on Nutrition and Food Chemistry

#### ß

# 14th Euro **Obesity and Endocrinology Congress**

September 13-15, 2018 | London, UK

#### Biography

Surajit Mitra acquired his BSc (Ag.) Hons. Degree securing a first class in 1990; MSc (Ag.) in Horticulture (1993) and PhD in Horticulture Degree (1998) from Bidhan Chandra Krishi Viswavidyalaya respectively. He is currently a Professor and Head of the Department of Post-Harvest Technology under the Faculty of Horticulture at the same university. He was awarded several National and International Fellowships, and participated in International Training Courses on Postharvest Technology, and has research experience of having worked at Kasetsart University, Thailand; Postharvest Education Foundation, USA; Agricultural Research Organization, Israel; and Wageningen University, The Netherlands. He also attended and presented several research papers on postharvest technology in International Conferences in Sri Lanka, Bangladesh and Germany. He delivered a Lead Lecture on "Tropical tubers as alternate staple crops for food and nutrition security" at the International Seminar on 'Agriculture and Food for Inclusive Growth and Development during 14-15 January 2017 at Lucknow, UP, India. He also delivered an Invited Lecture in the workshop on Strengthening Impact Assessment in the CGIAR (SIAC) – Sweet potato organized by International Potato Center (CIP), Peru at Jameson Inn Shiraz, Kolkata on April 10, 2016.

sdrsurajitmitra@yahoo.co.in

Notes: