Agrotechnol 2012, 1:2
http://dx.doi.org/10.4172/2168-9881.S1.005

OMICS Group Conferences
Accelerating Scientific Discovery

International Conference on
Agricultural & Horticultural Sciences

September 14-15, 2012 Hyderabad International Convention Centre, India

Traditional vegetables in sustaining food, nutrition and livelihood security in fragile tropical island ecosystem, India

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The food based approaches against 'micronutrient or vitamin associated deficiencies' for marginal communities in challenges regions are confronted with availability and affordability of appropriate dietary options. Depletion of biodiversity and traditional food resources, climate change, ecosystem degradation and changing food habits further increased vulnerability of such communities and their traditional food resources. Though, traditional foods played key role in their health and nutrition but overemphasis on commercial foods marginalized these micronutrients and vitamin rich resources. This paper highlighted the research findings from ongoing research programme on traditional vegetables in Andaman & Nicobar Islands. Around 57 herbs were identified with culinary uses in Andaman and Nicobar Islands (India), belonging to Fabaceae, Cucurbitaceae, Moaraceae, Amaranthaceae and Caesalpinacease. Good flavoured, tasty and crispy were more preferred for culinary items while bitter and odd flavoured were better for health. Most of the vegetables are semi-domesticated and forest/wild habitat is still major supplier for such dietary sources for marginal communities. The study also identified herbs rich in Ca, Fe, polyphenol, carotenoids, vitamin C and chlorophyll and low in anti-nutrients. The pre-cooking processing of twenty five traditional vegetables showed significant decrease in quantity of anti-nutritional compounds. Further, the selection and breeding efforts lead to develop 'CARI Broad Dhaniya' a improved and phytochemical rich variety of Eryngium foetidum L. and identification of superior genotypes of Basella, Amaranthus, Alternanthera, Centella and Hibiscus. The identified genotypes and nutrient rich sources and generated information for bioprospecting of these neglected resources will be useful for devising 'nutritious diets' with 'local foods' for better nutrition in challenges tropical islands.

Biography

Shrawan Singh, is working as Scientist, Division of Horticulture & Forestry, Central Agricultural Research Institute, Port Blair. His major research area is exploration of traditional vegetables of Island region for food, nutrition and livelihood of local people. His efforts lead to develop one variety and identify four superior genotypes in different traditional vegetables. With his efforts on this theme, the ICAR, New Delhi awarded him the prestigious Dr. Fakhruddin Ali Ahmed Award (2011).

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Yield and quality of pomegranate (Punica granatum) cv. Ganesh as affected by N and K application under rainfed conditions

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The pomegranate plants were treated with five levels of nitrogen (250, 375, 500, 625 and 750 g/plant) and potassium (200, 300, 400, 500 and 600 g/plant) to evaluate their influence on fruit yield and quality. The plants were raised and maintained under crescent bund with open catchment pits. Basal dose of FYM (15 kg/plant) and phosphorus (250 g/plant) were applied in mid December. Full dose of phosphorus (single super phosphate), potassium (muriate of potash) and half of nitrogen (calcium ammonium nitrate) were applied in the first fortnight of January and second half in the second fortnight of May. The experiments were conducted in randomized block design with three replications. Maximum fruit set (28.85 and 27.37%), fruit yield (14.94 and 14.91 kg), TSS (16.07 and 16%), total sugars (11.46 and 11.44%), non-reducing sugars (2.80 and 2.68%) and reducing sugars (9.56 and 9.58%) were recorded with the treatment N_3K_4 (N- 500 and K 500 g/plant). Whereas, maximum fruit weight (458.3 and 458.1 g) and fruits with high acidity (0.52 and 0.54%) were obtained with N_5K_4 (N-750 : K- 500) and N_5K_5 (N-750: K-600) for both the years. The vitamin C content of the fruits was reported to increase with the higher doses of N and K (16.36 and 16.40 mg/100 g, respectively). The fruits with minimum yield, lowest TSS, total sugars, non reducing sugars and reducing sugars were obtained with higher doses of N and K (N-750: K-600) application. Thus, the application of N and K at optimum level of 500 g/plant/year of each was found to be most effective in enhancing fruit set, yield, and quality as compared to other treatments.

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