Keynote speech

Investigations of important tropical and sub-tropical underutilized plants for food and medicine: An approach towards future sustainable agriculture and environment

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Abstract

The keynote describes the potentiality of some of the selected underutilized plants genetic resources of the tropical and subtropical countries for providing alternative sources of food and nutrition for human and animal. These are also called as lesser known plants/neglected and underutilized plant species/minor crops etc. Magnitude of cultivable lands has been declining due to increased urbanization and industrialization, and rapidly growing population in some tropical and subtropical regions, and that pose challenges to further exploitation of major crops especially in Bangladesh. Minor crops, in such scenario, can play pivotal role in providing supplemental sources of food and nutrition security to the growing population in such countries. Further, minor crops including herbs, shrubs and trees are blessed with a multitude of merits. Most of such plants can be grown in the homestead, roadside, fallow lands and other unutilized public places, hence they would not compete with lands occupied by major crops *viz*., rice, wheat, maize and others. Further, usually underutilized plants confer better tolerance to abiotic and biotic stresses, and hence, good harvest can be obtained even with little care and poor soil fertility. Most importantly, a number of minor crops show increased adaptation to high temperature and salinity intrusion, and these attributes help adapt to climate change scenario that are prevalent in many tropical and subtropical countries. Investigations of such plants would, thus, have a greater impact on resilience and sustainability in Agriculture. In the current investigation, some key cultivation protocol, basic nutritional status and phytochemicals of health benefit in some selected minor plants are presented. The following crops are alternative sources of starch, protein, minerals & vitamins, antioxidants and beverages. Cassava (*Manihot esculenta*, Euphorbiaceae) is a starch yielding alternative to rice; pigeonpea (*Cajanus cajan*, Fabaceae) and beans (*Dipgon lignosus*, Fabaceae) substitute to animal protein; moringa (*Moringa oleifera* & *M. stenopetala,* Moringaceae) tree and sweet potato (*Ipomea batatus*, Convolvulaceae) are alternative sources of minerals, vitamins and phytochemicals of medicinal importance; foliage of beans, moringa and sweet potato are alternative sources of feed; and roselle (*Hibiscus sabdariffa* var. sabdariffa) calyx alternative to conventional beverage. In the current research, potentiality of these plants commonly found in tropical and subtropical regions as substitutes and cheaper sources of food (starch, proteins & vegetables), feed, beverage and medicine is highlighted.

Keywords: Alternative Food Sources, Minor Crops, Tropic & Subtropics

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