The Significance of Underutilized and Neglected Plant Species in the Context of Climate Change: Case Studies

Hosakatte Niranjana Murthy
Brain Pool Fellow, Department of Horticultural Science, Chungbuk National University, Cheongju, Korea

Abstract:

Background: The global climate has changed significantly over time. Climate change is a result of the way we live, eat, cultivate, and breed crops, as well as the characteristics we strive for. Underutilized, climate-robust plants are becoming more and more popular for use in agricultural production in harsh areas. Many orphan crops are resilient to high levels of biotic and abiotic stress. Some are rich in nutrients, and others are great providers of biofuel, medicine, and industrial raw materials.

Materials and Methods: In this study, natural populations from South India were surveyed, morphological analysis and superior genotypes were selected, and nutritional and phytochemical estimation and characterization of neglected and underutilized species, including *Balanites roxburghii and Limonia accidissima, were evaluated.*

Results and Discussion: The fruit weight, pulp weight, and seed kernel weight of several populations that were estimated varied greatly. There is significant variation in the amounts of carbohydrates, proteins, oil, fiber, and minerals found in the nutritional analysis of the fruits of *Limonia accidissima* and *Balanites roxburghii*. Seed oil's physico-chemical study and fatty acid composition indicated that it might be used for food purposes.

Conclusion: These neglected species present opportunities for improvement, breeding, and further selection that may be used for their cultivation in the arid and hot climates of Southeast Asia.

Keywords:

Climate change, environmentally resilient species, neglected and underutilized species, nutritional value.