OPEN ACCESS Freely available online

ISSN: 2157-7110
Journal of Food Processing & Technology

Commentary

Authentication of Sustainable Food Production and Agriculture

Booysen Chantelle*

Department of Food Science, University of Guelph, Ontario, Canada

DESCRIPTION

A recent estimate places the number of individuals who experience hunger at 925 million. Furthermore, by 2050, an additional 2 billion people are anticipated to be added. In this situation, much more effort than in the past must be put into plant and agricultural genetic engineering to meet the challenges to global food security and safety. Crops, which are domesticated plants, account for the majority of agricultural output. Additionally to providing the bulk of the food resources for human nourishment and the components for animal feed, they also indirectly supply fibre, construction materials, and biofuels [1]. In addition, certain domesticated plants are grown and prepared for use in medicine. Therefore, crops are crucial for global food, health, and economic systems' survival, productivity, growth, and development. In the past, man employed a variety of plant species for agriculture, but now, a very limited number of plant species provide the majority of the food for humans. These days, new methods for increasing agricultural yield are accessible because to the use of omic technology. The four primary areas of omic technologies-genomics, epigenomics, proteomics, and metabolomics allow for the molecular description of the genome, epigenome, proteome, and metabolome employing cutting-edge analytical platforms, such as mass spectrometry [2].

These scientific developments offer molecular understanding of crop growth, development, resistance, and yield in a setting that is continually changing. Utilizing omics in research can assist improve agricultural output, genetic resilience, and other factors that contribute to human food security global food, health, and economic system's survival, productivity, growth, and development. In the past, man employed a variety of plant species for agriculture, but now, a very limited number of plant species provide the majority of the food for humans [3]. These days, new methods for increasing agricultural yield are accessible because to the use of omic technology. The four primary branches of omic technologies that provide molecular descriptions of the genome are genomics, epigenomics, proteomics, and metabolomics. Employing cutting-edge analytical technologies, such as mass spectrometry, to analyse the proteome, metabolome, and epigenome.

These scientific developments offer molecular understanding of crop growth, development, resistance, and yield in a setting that is continually changing. Utilizing omics in research can aid in improving food productivity, genetic resilience, and other factors to feed the growing global population [4].

Reduction of plant biodiversity

The process of domestication and breeding has significantly decreased the genetic diversity of the most significant agricultural plants. However, a new trend that represents a higher degree of consciousness is now in view. In order to meet the challenges of producing more food in unfavourable environmental conditions and in a sustainable agricultural system with reduced inputs of pesticides and fertilisers and with less water requirements, it is becoming increasingly clear that protecting genetic diversity is necessary to increase the gene pool of domesticated crop species. The previous century saw the abandonment of many historic varieties, landraces, and wild crop cousins that were recognised to have traits for resistance or tolerance. Numerous research projects have recently been launched to encourage the preservation of plant germplasm collections to further the hunt for genotypes that could be more resistant to planetary changes. Furthermore, the finding of novel genes in the animal and plant kingdoms might be strategically essential for the rapid development of species that are adaptable to changing climatic circumstances [5].

REFERENCES

1. Benke K, Tomkins B. Future food production systems: vertical farming and controlled-environment agriculture Sustain. Sci Pract Pol. 2017;13(1):13-26.
2. Bottone EJ. Bacillus cereus, a volatile human pathogen. Clin Microbiol Rev.2010; 23(2):382-398.
3. Britto DT, Kronzucker HJ. NH4+ toxicity in higher plants: A critical review. J Plant Physiol. 2002;159(6):567-584.
4. Chandler DP, Fredrickson JK, Brockman FJ. Effect of PCR template concentration on the composition and distribution of total community 16S rDNA clone libraries. Mol Ecol. 1997;6(5):475-482.
5. Fricker M, Agren J, Segerman B, Knutsson R. Evaluation of Bacillus strains as model systems for the work on Bacillus anthracis spores. Int J Food Microbiol. 2011;145 (1):129-136.

Correspondence to: Booysen Chantelle, Department of Food Science, University of Guelph, Ontario, Canada, E-mail: booysen456gmail.com

Received: 02-Sep-2022, Manuscript No. JFPT-22-18239; **Editor assigned:** 05-Sep-2022, PreQC No. JFPT-22-18239 (PQ); **Reviewed:** 19-Sep-2022, QC No. JFPT-22-18239; **Revised:** 26-Sep-2022, Manuscript No. JFPT-22-18239 (R); **Published:** 03-Oct-2022, DOI: 10.35248/2157-7110.22.13.951

Citation: Chantelle B (2022) Authentication of Sustainable Food Production and Agriculture. J Food Process Technol.13:951