Available online at www.scholarsresearchlibrary.com

Scholars Research Library

Archives of Applied Science Research, 2021, 13 (4):01
(http://scholarsresearchlibrary.com/archive.html)

Crop Plant Genetic Diversity Research: Importance and Recent Advances

K. Gray*

Managing Editor, Archives of Applied Science Research, Belgium

***Corresponding Author:** K. Gray, Managing Editor, Archives of Applied Science Research, Belgium, E-Mail: appliedsci@scholarres.org*

EDITORIAL

Plant Genetic Diversity (PGD) is now being acknowledged as a distinct field, as urbanisation and shrinking cultivable areas are two of the most important causes contributing to food insecurity in the developing world. PGD can be captured and kept in the form of Plant Genetic Resources (PGR) such as gene banks, DNA libraries, and so on, in bio repositories that maintain genetic material for long periods of time. However, in order to meet future global problems in terms of food and nutritional security, saved PGR must be used for crop enhancement. This process of genetic manipulation is currently being accelerated and carried out with more precision and speed than traditional breeding approaches, thanks to the introduction of new biotechnological tools. It's also worth noting that gene banks look at a variety of difficulties in order to increase germplasm distribution and utilisation, plant identity duplication, and database access for rebreeding activities. Because plant breeding research and cultivar development are critical components of boosting food production, the global food production network will become more sustainable if varied genetic sources are available and accessible. Plant Genetic Resources (PGR) diversity allows plant breeders to create new and improved cultivars with desirable qualities, including both farmer and breeder-preferred attributes (pest and disease resistance and photosensitivity, etc.). Natural genetic variability within crop species has been harnessed to meet subsistence food requirements since the dawn of agriculture, and it is currently being concentrated on surplus food for rising populations. In the middle of the 1960s, developing countries saw the green revolution, with high-yielding and fertilizer-responsive dwarf hybrids/varieties, particularly in wheat and rice, helping to meet food demand. These long-term efforts that resulted in widespread coverage of single genetic cultivars (boom) exacerbated other problems, including as genetic erosion (loss of genetic diversity) and the extinction of primitive and adaptive genes (loss of landraces). Agriculture must be viewed not just as a food-producing machine, but also as a significant source of livelihood generation in both the farm and nonfarm sectors. Keeping a reservoir of cultivated and cultivable crop species is a principle for future agriculture, much as keeping a museum of distinct civilised humans' cultural and spiritual specialties in various geographies for historical proof is. The former can play a critical role in supplying adaptable and productive genes, resulting in long-term advances in food yield that are also linked to environmental harm. Agriculturists have recognised that unique plant genetic resources are priceless human assets that must not be lost. Such materials will become increasingly important in the future for feeding a growing global population. The presence of genetic variability in crops is critical for their continued progress by giving breeders alternatives for developing new varieties and hybrids. The phenotypic and molecular characterisation of PGR can help with this. The amount of germplasm might sometimes limit its use in breeding. This can be avoided by creating and utilising subsets such as the core and mini core collection, which represent the diversity of the complete species collection.