International Journal of Plant Breeding and Genetics ISSN 2756-3847 Vol. 8 (2), p. 001, September, 2021.
Available online at www.internationalscholarsjournals.com © International Scholars Journals

Editorial

Advancements in the field of plant breeding

Oludayo Daniel*

Department of Plant Sciences, University of Gezira, Wad Medani, Sudan.

Accepted 16 September , 2021

EDITORIAL NOTE

Plant breeding is the study of changing the properties of plants to achieve desired results. It has been used to improve the quality of nutrition in products for people and creatures. The objectives of plant breeding are to create crop varieties that brag remarkable and prevalent qualities for an variety of agriculture applications. The most regularly addressed traits are those identified with biotic and abiotic stress tolerance, grain or biomass yield, end-utilize quality characteristics like taste or the concentrations of specific natural particles and ease of processing. Plant breeding can take several forms, from simply picking plants with favourable features for propagation to approaches that rely on genetics and chromosome information, to more complicated molecular procedures in cultigen and cultivar. The type of qualitative or quantitative qualities a plant will have is determined by its genes. Plant breeders aim to develop a certain outcome of plants and potentially new plant varieties, narrowing the genetic diversity of that variety to a few biotypes in the process. Individuals such as gardeners and farmers, as well as professional plant breeders employed by government entities, universities, crop-specific industry associations, and research centres, practise it all over the world.

International development organisations believe that developing new varieties that are more yielding, disease resistant, drought tolerant, or regionally adapted to different environments and growing circumstances is essential for ensuring food security.

Plant breeding began with sedentary agriculture, namely the domestication of the first agricultural plants, which is thought to have occurred between 9,000 and 11,000 years ago. Initially, early farmers simply selected food plants with favourable features and used them as progenitors for later generations, resulting in a gradual accumulation of valuable traits. Another technique is the intended interbreeding of intently or distantly related people to produce new harvest varieties or lines with desirable properties. Plants are crossbred to present characteristics/qualities from one variety or line into new genetic background. For instance, a yielding pea might be crossed with a high-yielding but susceptible pea, the objective of the cross being to present high- yielding without losing the high yield characteristics. The progeny from that cross would then be tested for yield and breeding and high-yielding resistant plants would be further evolved. Plants may also be crossed with themselves to deliver inbred varieties for breeding. Pollinators might be excluded using pollination bags.

There are numerous traditional and current breeding techniques that can be used for crop improvement in natural farming despite the prohibition on genetically modified organisms. For example, controlled crosses between people permit desirable genetic variation to be recombined and moved to seed progeny *via* natural processes. Marker assisted selection can likewise be utilized as a diagnostics tool to facilitate selection of progeny who possess the ideal trait(s), significantly speeding up the breeding process. This procedure has demonstrated especially helpful for the introgression of resistance gene into new backgrounds, as well as the efficient selection of numerous resistance gene pyramided into a single person. Unfortunately, molecular markers are not presently accessible for some significant traits, particularly complex ones controlled by numerous genes.

As of now, few breeding programs are conduct at natural farming and until recently those that tended to this sector have commonly depended on indirect selection. If this interaction is sufficiently serious, a significant trait needed for the organic environment may not be revealed in the conventional environment, which can bring in the selection of poorly adapted people. To ensure the most adapted varieties are recognized, supporters of organic breeding now advance the utilization of direct selection for many agronomic traits.

*Corresponding author. Daniel Oludayo, E-mail: danieldayo@gmail.com.