

Selection of the best durum wheat genotypes according to their phenotypic biodiversity.

Meriem MEHAZZEM¹, Abdelkader BENBELKACEM² and Ratiba BOUSBA¹.

1. Genetics, Biochemistry and Biotechnology Laboratory, Frère Mentouri University, Algeria.
2. INRAA, Constantine, Algeria.

Email: mehazzem.meriem@gmail.com

Durum wheat (*Triticum durum* Desf) is by far the most widely grown cereal in Algeria. This crop is still subject to several constraints such as climatic hazards, particularly drought. It generates a very low production, i.e., coverage of 30% of the population's needs. The overriding objective is therefore to make up an estimated shortfall of more than 60% of national consumption of this strategic product by increasing rates of return using new improvement techniques. This study was conducted in crop under natural conditions, at the Beni Mestina north of Constantine during the campaign of 2016/2017, in order to evaluate twenty-nine durum wheat varieties obtainable in Algeria local and introduced varieties for based on yield and morpho-physiological parameters. In this respect, certain parameters were evaluated, such as chlorophyll content, plant length, thousand kernel pea and protein content, in order to quantify the effects of water stress on some morphological and physiological characteristics that play a significant role in drought tolerance. The obtained results showed varietal differences for all measured parameters. Principal component analysis, described total variation, and divided genotypes according to their phenotypic variation into two distinct groups. The first includes old varieties showing adaptability to the climatic conditions of the studied area and it gives a very good yield. In contrast, the second groups the majority of remaining introduced varieties are formed by improved genotypes and other newly introduced ones.

Key words: drought, durum wheat, yield, morphological traits, physiological traits.