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ENVIRONMENTAL INFLUENCE ON QUALITY PARAMETERS OF SOME DURUM WHEAT VARIETIES GROWN IN ALGERIA.

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Durum wheat (*Triticum turgidum* L. ssp. *durum* Desf.) is one of the most important cereal crops in the Mediterranean region in terms of cultivated area and per capita consumption. However, durum wheat cultivation generally suffer from insufficient yield stability due to changes of environmental conditions and annual and seasonal climatic fluctuations.

Two different studies were undertaken, the first aim is to evaluate the effect of environmental factors on quality parameters of 21 durum wheat varieties grown under three Algerian locations conditions during two cropping seasons (2013 to 2015). The other study performed under rainfed conditions in 2016/2017 cropping season at Elkhroub experimental aimed an assessment of fourty old local and new durum wheat varieties for their technological, biochemical parameters and grain yield.

In the first study, there is a strong influence of location and growing season on all quality parameters of grain. During the two cropping years, the influence of rainfall amount was low but statistically significant correlations with protein content and yellow index only at El-Khroub. Negative but not significant correlations were observed with brown, yellow berry indeces and black point rate. Among sites, El-Khroub offered the best rainfed conditions for the production of high-quality durum wheat grain.

Results showed in the second study an important genetic variability among the genotypes for all considered traits (quality and yield). Differences were highly significant for total protein content (9,4% to 15,4%), Thousand kernel weight (33,5g to 54,75g), grain moisture (9,55 to 10,93%), wet and dry gluten (6,93 to 12,3g and 2,56 to 5,1g), wellow berry (1,6 to 10,37%), black point (2,85 to 11,45%) and grain yield (2,34 to 4,8t/ha). Old local varieties were globally lower in grain yield than all the new ones but exhibited a higher TKW and total protein levels. The biochemical analysis contributed also to characterize the different genotypes studied and showed an important polymorphism.

Key words : durum wheat, quality traits, grain yield, old and new varieties, genetic variability.

ABSTRACT