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# FROM SEED TO PASTA III

A SUSTAINABLE DURUM WHEAT CHAIN  
FOR FOOD SECURITY AND HEALTHY LIVES



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## NITROGEN RESPONSE OF OLD DURUM WHEAT CULTIVARS COMPARED TO NEW RELEASED VARIETIES IN MOROCCO

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Durum wheat is a typical Mediterranean crop. Its importance comes from the fact that durum wheat grain is consumed in different forms namely bread, pasta, couscous, bouloghour. However, these different forms require grains of durum wheat of good quality (protein content, gluten strength, grain color and baking strength). For the productivity and the quality of durum wheat grain, nitrogen (N) is the most important element applied. Nitrogen fertilization, which plays an essential role in the plant, remains one of the most limiting factors in increasing wheat production. The objective of this work is to study the influence of nitrogen supply and seed rate on yield, total biomass and end use quality of five Moroccan durum wheat varieties. Two experiments were carried out on 2017 and on 2018 examining 5 Moroccan cultivars in three locations (Sidi el Aidi, Marchouch and Tassout) under split-plot experimental design with two replications, three seed rates (S: 300, 400 and 500 grains/m<sup>2</sup>) and three nitrogen treatments (N: 45, 90 and 135 kg N/ha). Many measurements were taken: yield and components, biomass, NDVI, chlorophyll content, grain protein content and grain phenotypic characteristics. With regard to the results, both N and S had a significant effect on grain yield, biomass, physiological traits and protein content. In addition, highly significant genetic variation was observed between genotypes and the genetic response to N supply was different between cultivars. The new released ones showed high response to the variation of N application. The difference between environments was also observed and discussed.

ABSTRACT