

## عنوان مقاله:

Effect of subsoil compaction constraints on some morphological, physiological and agronomic properties of wheat (*Triticum aestivum* L.) under rain-fed farming

## محل انتشار:

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## خلاصه مقاله:

Soil compaction has become a widespread problem in the world and is one of the factors involved in land degradation and declining crop yields, especially in the arid and semi-arid agriculture. The purpose of this study was to investigate the effects of subsoil compaction on morphological, physiological and agronomic aspects of wheat. The research was carried out in the experimental farms of Anbar Ulum city. The treatments were applied in the form of the completely randomized block design with four independent variables and three replicates. The study treatments included: control treatment (no artificial compression), treatment 2 (two passes of a heavy tractor), treatment 3 (4 times passes of a heavy tractor) and treatment 4 (6 times passes of a heavy tractor). In this study data was analyzed by means of the SAS software package. The type of mean comparison method applied is the LSD test. Results showed that different levels of soil compaction had a significant reducing effect on plant morphological characteristics such as plant height and tiller number. Likewise, soil compaction significantly reduced the agronomic characteristics of wheat like grain weight, biological yield and grain yield, but not so much effect was observed for the harvest index (HI). As for plant physiological characteristics, soil compaction imposed a significant effect such that the concentration of chloride, sodium and potassium concentration in the leaves significantly decreased and so did the leaf area index.

## کلمات کلیدی:

soil compaction, wheat, arid and semi-arid areas, morphology, physiology, yield

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