

# EFFECT OF CLIMATIC CONDITIONS ON SOME PHYSIOLOGICAL INDICATORS OF WINTER WHEAT CULTIVATED IN ORGANIC FARMING SYSTEM

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## Abstract

Leaf area index, normalized index of vegetation and yield are important traits affected by environmental factors. The objective of this study was to evaluate the effect of three different year on leaf area index, normalized index of vegetation and its implication on the winter wheat yield cultivated in organic farming system. Twenty wheat cultivars were sowing during 2016-2018 under rainfed conditions at National Agricultural Research and Development Institute Fundulea, Romania, on a cambic chernozem soil. Climatic conditions and cultivars strongly influenced all studied traits in this study. The highest leaf area index and NDVI were reached in 2016, while the lowest ones were recorded in organic farming system for all cultivars in 2018. In conditions of 2018 year LAI ranged from 1.6 (Bezostaia) to 3.1 m<sup>2</sup>/m<sup>2</sup> (Glosa), reflecting less favorable conditions of water and nutrients supply than in 2016 when in the same genotypes the LAI values were 0.35 and 0.54, respectively. The correlations between leaf area index, normalized index of vegetation and yield obtained in experimental years, were very significantly positive, suggesting that a higher yield in organic farming system can be associated with capacity of cultivar for a higher leaf area to achieve a good ground cover.

**Key words:** wheat, organic farming system, leaf area index, NDVI, yield

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