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Irrigation, the Measure for Pedological Drought Control and for Microclimate Improve in Soybean from Crişurilor Plain

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SUMMARY

The paper is based on the researches carried out during 2006-2008 in Oradea on a preluvosoil. Ten to ten days determination of the soil moisture on 0-75 cm depth emphasized the presence of the pedological drought every year: 39 days in 2006; 104 days in 2007 and 81 days in 2008; soil moisture decreased below wilting point every year too: 5 days in 2006 and 2008 and 6 days in 2007.

Irrigation use for maintaining the soil water reserve on 0-75 cm depth between easily available water content and field capacity determined the improve of the report between water and temperature and de Martonne aridity index quantified this report. Irrigation suspending in May or June, or July, or August determined the yield losses very significant statistically. The inverse link between pedological drought and yield and the direct link between de Martonne aridity index and yield sustain, too the need of the irrigation for pedological drought control and for microclimate improve in soybean from Crişurilor Plain.

The following function: linear, logarithmic, polynomial, power, and exponential was tested for quantifications of the correlations and the exponential function $y= 3.507e^{-0.015x}$ (R^2= 0.84***) had the best correlation coefficient for link between pedological drought and yield and the function power $y= 0.0044x^{1.7223}$ (R^2=0.83) had the best correlation coefficient for link between de Martonne aridity index and yield.

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