



Comparison of Pálfai's Drought Index and Standard Precipitation Index in the Northern Plains Region in Hungary

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Agriculture has always been an important role in economy, food supplies, sustainability of society and creation of job opportunities in Hungary. Our country has resource-related strength of agriculture, because we have more than 4,5 million ha for agricultural production. Agricultural production can be influenced by several factors, including climate, hydrology, soil conditions and antropogenic impacts. Climate determines the quality and quantity of the crop yields. The climate conditions in Hungary are variable and it shows spatial and temporal extremes. As a result of this, drought have become more frequent in our country (2003, 2007, 2009, 2012,), which is reflected in the decline in yields as well. In the present study, Pálfai's Drought Index (PAI) and the Standardized Precipitation Index (SPI) were compared 2003-2012 in Debrecen. The temperature and precipitation data were calculated from data provided by a local meteorological station to work out PAI, while the SPI-3 index values were downloaded from the database of the European Drought Observatory. This allowed to drought assessment in a local and regional scale. Our study was supplemented with SPI-3, soil moisture anomalies, PAI and yields of wheat and maize to evaluating the impact of drought on agriculture.