
Key words: Penman-Monteith method, reference evapotranspiration

Summary

Reference evapotranspiration is an important agrometeorological parameter describing the evaporative demand of the atmosphere. In relation to precipitation, it indicates the potential surplus or deficit of precipitation. The Penman-Monteith method has been considered as a universal standard to estimate reference evapotranspiration in recent years. In the paper reference evapotranspiration is calculated by Penman-Monteith method in the months of the growing season (April–September) in 1970–2004, using meteorological parameters measured at three stations in Poland: Kraków, Olsztyn and Poznań. The stations represent the agroclimatic regions with different temperature and precipitation characteristics.

Mean sums of reference evapotranspiration from April to September account 470 mm in Olsztyn, 510 mm in Kraków and 550 mm in Poznań. In particular months mean evapotranspiration accounts from 50–60 mm in April and September to 100–120 mm in other months of the growing period. The maximum evapotranspiration occurs in July. In all analyzed period the maximum evapotranspiration was in Poznań and the minimum in Olsztyn.

Reference evapotranspiration according to Penman-Monteith method had significant growth trend 1970–2004 in the three analyzed regions, both in most months and in the whole growing period.