



Investigation of the Impacts of Measured and Calculated Radiation Balance Components on Evapotranspiration

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Determination of surface energy balance over agricultural lands plays a crucial role to better investigation of sustainable agriculture and food security which are related to evapotranspiration. Surface energy balance components that include net shortwave and longwave radiation depend on surface conditions like surface albedo and climate of a region. Surface albedo is ratio between reflected longwave radiation and incoming shortwave radiation. There are many different crops in agriculture ecosystem. Thus, surface energy balance components vary by vegetation surfaces. Net radiation is most important component of surface energy balance which is difference between net shortwave and longwave radiation. These are calculated by commonly used equations and applied to the FAO Penman& Monteith equation using meteorological stations' data located in cities. However, there are differences between urban areas and agricultural ecosystems. This situation causes to the calculation errors. In this research, it is aimed to investigate the changes between estimated and measured surface energy balance components which are estimated by meteorological stations' data in the urban area and measurements from an rural area over winter wheat surface 2014-2015 growing season in Thrace Region located in the Northwestern part of Turkey, Kırklareli city.

Keywords: Surface energy balance, winter wheat, FAO Penman-Monteith, Kırklareli/Turkey