

ESTIMATION METHOD FOR CROP BIOLOGICAL WATER CONSUMPTION WHEN SOLVING PROBLEMS OF WATER REGIME

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Method for irrigation rates calculation taking into account evapotranspiration (water consumption of crops) is proposed. The energy balance equation of land surface is used to estimate the biological water consumption of crops (evapotranspiration). Definition of indicators for irrigation regime is carried out through evapotranspiration values: reference, potential and real. Data are collected, stored and processed in the automated mobile field agrometeorological complex (AMFAC) in real time to enable assessment of the biological water consumption of a crop. Created computer program allows to determine the irrigation rate in real time as the difference of potential and real evapotranspiration. Irrigating time is determined through the ratio of real to potential evapotranspiration. Approbation of the method and software verification was conducted on oat and potato crops (Leningrad region) and the blue alfalfa crop (Volgograd region). Given information and technical support will allow more rational usage of irrigation water.

Key words: *crop water consumption, AMFAC, evapotranspiration, irrigation rate.*