DOI: https://doi.org/10.37162/2618-9631-2024-3-142-157

Assessment of the possibility of using satellite information for monitoring droughts in the southern regions of Russia / Kleshchenko A.D., Savitskaya O.V. // Hydrometeorological Research and Forecasting, 2024, no. 3 (393), pp. 142-157.

A brief description of the automated operational system for 10-day monitoring of droughts developed and operating at the Drought Monitoring Center of the All-Russian Research Institute of Agricultural Meteorology is provided. The system uses meteorological information from the network of weather stations. To obtain more detailed information on the spatial distribution of droughts, it is proposed to use satellite information (VIRS scanner of the SUOMI NPP satellite) along with ground-based data. For this purpose, it is proposed to calibrate satellite information (VCI index) based on ground information (HTC index) using test sites located near weather stations. Calculations of the aridity assessment for the territory of the considered federal districts using the proposed method are presented. Satisfactory convergence with the data obtained from ground information is observed. It is planned to refine the proposed procedure to operational application.

Keywords: drought, satellite information, NDVI, VCI, Selyaninov hydrothermal coefficient, calibration curves

Tab. 1. Fig. 5. Ref. 11.