DOI: https://doi.org/10.37162/2618-9631-2023-4-118-137

Agrometeorological conditions and prediction of the yield of grain and leguminous crops in the subjects of the eastern Siberian Federal District / Strashnaya A.I., Pavlova A.V., Kulakova T.V., Klang P.S. // Hydrometeorological Research and Forecasting, 2023, no. 4 (390), pp. 118-137.

The results of studying agrometeorological conditions and the possibility of using satellite data to evaluate and predict the yield of grain and leguminous crops in the subjects of the eastern part of the Siberian Federal District are presented. Reasonability of using satellite information in combination with surface data for the development of a method for forecasting the yield in the Krasnoyarsk krai, where a high correlation between the yield and the NDVI (Normalized Difference Vegetation Index) was found, is shown. In the Republics of Khakassia, Tyva and the Irkutsk oblast, no significant correlations between the NDVI and the yield was detected. The importance of improving agricultural standards and the role of meteorological factors differently contributing to an increase in the yield in the regions during 2001-2020 are shown. Using the correlation and regression analysis, the meteorological factors that have the greatest impact on the yield were investigated and selected. Regression models developed on the basis of the joint use of satellite and ground-based data are presented to predict the average yield of grain crops and spring wheat in the Krasnoyarsk krai, and those based on surface data are presented to predict the yield of grain crops in the republics of Khakassia, Tyva and the Irkutsk oblast.

Keywords: agrometeorological conditions, grain crops, yield, satellite data, forecast

Tab. 4. Fig. 5. Ref. 21.