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ASSESSMENT OF RELATIONSHIPS BETWEEN HYDROTHERMIC INDICATORS AND ENZYMATIC ACTIVITY OF CHERNOZEMS OF ROSTOV REGION UNDER VARIOUS SOIL MANAGEMENT

T. V. Minnikova, G. V. Mokrikov, K. Sh. Kazeev, Yu. V. Akimenko, S. I. Kolesnikov

Southern Federal University, Academy of biology and biotechnology named after D. I. Ivanovsky,
194/1, Stachki pr., Rostov-on-Don, 344090
E-mail: loko261008@yandex.ru

During the growing season of 2016, the dynamics of enzymatic activity in the chernozems of the Rostov Region agrocenoses was studied. The enzymatic activity depends, among other factors, of the soil temperature and humidity. The activity of soil oxidoreductases and hydrolases varied widely throughout the season, both when using the soil protection technology of direct sowing and the traditional soil management technology. The activity of enzymes decreased during the growing season. Strong links were revealed between the temperature of the soils at all depths and the activity of catalase, β-fructofuranosidase and dehydrogenases in June and July (R = –0,66–0,90). Dependence of enzymatic activity of soil moisture was more complex. For different enzymes and different periods, both positive and negative correlations were calculated. The enzymatic activity of chernozems had a tendency to increase when the alternate soil protection technology was used. The correlation between the hydrothermic indicators and the activity of dehydrogenases and β-fructofuranosidase was stronger when the direct seeding technology was used in comparison with the traditional soil management technology.

Keywords: no-till, direct crops, chernozems, biological activity, seasonal dynamic.