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ECOLOGICAL ASSESSMENT OF POTATO VARIETIES GROWN AFTER DIFFERENT FORECROPS IN THE NORTHERN FOREST-STEPPE OF THE TYUMEN REGION

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ABSTRACT

Variety testing sites, due to heavy workload, do not have the opportunity to test varieties against different forecrops, mineral nutrition backgrounds, planting dates and standards, etc. In this regard, the time has come to change approaches to testing potato varieties in the state standards of variety testing. Considering the current situation, the purpose of this study is to evaluate the registered varieties planted after green fallow and potatoes, to establish their stability in yield and quality of tubers in the northern forest-steppe of the Tyumen region (Russia). The results of testing potato varieties after green fallow and potatoes in the northern forest-steppe of the Tyumen region are presented. It was found that the registered Valentina variety exceeded the standard Zhukovsky ranniy variety after both forecrops in yield and quality of tubers by 2.1-2.2 t/ha and starch by 2.7-2.9%. The yield of the standard variety after green fallow was 32.7 t/ha, after potatoes, it was 17.6 t/ha, and starch content equaled 12.5 and 12.9%, respectively. An average negative relationship has been established between the yield of tubers and the starch content in them ($r=-0.36\pm 0.05-0.42\pm 0.09$), with a close positive relationship between the content of dry matter and starch ($r=0.79\pm 0.12-0.86\pm 0.09$). The variety had a strong influence on the content of dry matter and starch, while the share of its contribution was 59%, while the influence the year amounted to 24% and that of the forecrop to 17%. The Valentina variety ranks first among the studied varieties in terms of yield and starch content, the standard Zhukovsky ranniy variety ranks second in terms of yield, and the Alyona variety occupies the second position in terms of starch content. For the Valentina and Alyona varieties, it is necessary to accelerate the reproduction of healthy planting material and expand the planting area in the private sector and agricultural enterprises.

Keywords: Leached chernozem, Starch content, Environmental conditions.