Annotation

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Photosynthetic activity and yielding capacity of soybean varieties depending on fertilization

The article deals with studying of the impact of water-soluble complex fertilizers on photosynthetic productivity of crops of soybean varieties. Also, grain productivity of soybean varieties depending on fertilization was determined. It was found that treatment of soybean seeds with Wuxal Extra CoMo and Avatar-1 fertilizers and two crops nutriment with Wuxal Microplant and Avatar-1 out-of root increased the area of leaf surface, photosynthetic potential, raised accumulation level of dry matter and coefficient of use of photosynthetically active radiation by crops of soybean varieties. Thus, Omega Vinnytska variety formed the largest area of leaf surface. Area of assimilation surface of soybean varieties became greater under fertilizer applying, especially when using Wuxal fertilizer. Formation of photosynthetic potential of crops depended on varietal characteristics of soybean more than fertilizer applying. Omega Vinnytska and Femida varieties showed the highest photosynthetic potential of crops. In particular, photosynthetic potential in Omega Vinnytska variety was 2.742 mln m^2 days/ha, which was 0,224 mln m^2 days/ha more than the control variant. Fertilizer applying helped to increase this index in Omega Vinnytska variety. Thus, it rose to 2.878 mln m^2 days/ha after Wuxal use. Dry matter was produced by crops of soybean at a high level in conditions of Western Forest-Steppe. Avatar-1 and Wuxal fertilizers increased the amount of dry matter accumulation of all soybean varieties. Dry matter was accumulated the most intensive while Wuxals applying and the highest amount of dry matter was formed in Omega Vinnytska among studied varieties. Omega Vinnytska variety amassed the most number of bound energy (164248 MJ/ha) on average for 2012-2015. The highest coefficient (1.37%) of use of photosynthetically active radiation in the crops of Omega Vinnytska variety while fertilizer applying was observed in the variant with Wuxal using. Omega Vinnytska variety when Wuxals applying under using of full mineral fertilizer in the dose of $N_{30}P_{60}K_{60}$ and treatment the seeds with Ryzohumin provided maximum indexes of yielding capacity (3.62 t/ha).

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