

Annotation

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Formation of soybean photosynthetic apparatus depending on fertilization and liming after-effect

The article presents the results of studies of the influence of fertilization and different rates of limestone ameliorants aftereffect on the formation of the photosynthetic apparatus of soybean variety Legenda in conditions of Western Polissya.

An important condition of formation of high yields of crops is the increase of productivity of photosynthesis, i.e. the amount of synthesized organic material per unit of leaf surface area per day. One of the main tasks in achieving this goal is formation of sowing with the most development leaf apparatus which will be active for a long time (maximum) both at the beginning and the end of vegetation period. It is known that well developed photosynthetic apparatus, which is optimal by the volume and dynamics of functioning, is one of the factors of obtaining of high and sustainable yields of agricultural crops. It should be high-productive in all phases of plant growth and development.

Optimal size of leaf surface area is crucial for obtaining maximum yield of soybean. Therefore, objectives of researches were to establish the potential of formation of leaf surface area of soybean and to calculate the main indicators of its photosynthetic productivity depending on fertilization and after-effect of different rates of the limestone ameliorants.

Research was carried out in 2013-2014 in the long-term stationary experiment at the Institute of Agriculture of Western Polissya. The type of soil of experimental field is sod-podzolic. Researches and estimates in experiment were conducted by commonly accepted methods.

It was found that the improvement of conditions of mineral nutrition and liming aftereffect contributed to a better development of assimilation apparatus during the vegetation period of soybean. Fertilization of $N_{40}P_{60}K_{60}$ and foliar application of microfertilizer of "Nutrivant Plus" Oilseed in variant with near neutral soil solution reaction achieved by aftereffect of 1.5-2.0 dozes of limestone ameliorants, on the background of the use of cereal straw as fertilizer have provided the highest values of leaf surface area and photosynthetic potential such as 23,93-41,74 thousand m^2/ha and 0,61-0,68 mln. $m^2 \cdot day/ha$, respectively.

Key words: *soybean, mineral fertilizers microfertilizer, liming aftereffect, leaf surface area, photosynthetic potential, clean productivity of photosynthesis.*