

Comparison of the sowing, harvesting and antioxidant properties of seeds and seedlings of a giant field moth (*Agrostis gigantea* Roth) after air drying and thermal dehydration

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Abstract

The study of the biological characteristics of feed crops and the use of modern methods in the study of the processes of their selection is relevant for the intensification of feed production. The article presents the results of a biochemical study of the giant VIK-2 (*Agrostis gigantea* Roth) field birch seed, their sowing and yield properties after thermal dehydration (drying of air-dried samples at 105 °C to constant weight), as well as their total antioxidant activity during germination in the dark. The total antioxidant activity of seeds and seedlings was studied using coulometric analysis and determined using electrogenerated bromine, the samples were analyzed on a certified coulometer *Expert-006* (LLC *Econix-Expert*, Russia) using a certified method. The work shows that, compared with air drying after thermohydration, there is a decrease in the viability and yield properties of seeds. Seed germination decreased by 5.5%, the height of plants at the end of the germination period (on the 14th day after sowing) by 9.4%, the mass of 100 sprouts – by 21.3%, the yield of green mass (microgreen) also by 21.3%. The antioxidant activity of seeds after thermal dehydration also decreased by 21.4%. For the first time, data were obtained on the viability, formation of microgreen biomass and a change in the total antioxidant activity of the seeds of the VIK-2 giant cultivar after thermal dehydration (drying the initial seeds) in the test at 105 °C to constant weight. It was shown that thermal dehydration of seeds at 105 °C significantly affects the viability of seeds and seedlings of a bent field, which is associated with the characteristics of metabolism, forms and state of water activity in cells and tissues of plants.

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