

Impact of ProbioHumus and Humate Gel Ag on Photosynthetic Productivity of Oat (*Avena Sativa*)

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Goal—to investigate the impact of ProbioHumus and Humate Gel A Gon photosynthetic productivity of oat. The small-plot trials was conducted in the period between 2016–2017 at the Field Experimental Station of the Nature Research Centre in soil Calc(ar)i-Epihypogleyic Luvisol. Commercial ProbioHumus, “Baltic Probiotics” and Humate Gel AG “Hydro Thermo Dynamic Technology”, Latvia, were used. ProbioHumus and Humate Gel AG composition content are microbiological bacteria. The object of investigation was oat. Physiological investigations of chlorophyll and carotenoid content in the leaves of oat cultivar were carried out at the outset of the leaves. The dependence of chlorophyll and carotenoid content on the ProbioHumus and Humate Gel AG variant was established at that time. The content of chlorophyll (a, b), (a+b) was measured and carotenoid content was determined on each variant. Chlorophylls a/b ratios and amounts of chlorophylls (a, b), carotenoids were calculated according to Wellburn (1994). The results indicated that chlorophyll and carotenoid content in oat leaves depended on ProbioHumus in the substrate and spread oats leaves with preparation Humate Gel AG. This was demonstrated by the variant with probiotics soil, where chlorophyll and carotenoid content in oat plants was the highest. The variant of ProbioHumus (the content of chl a–12%; chl b – 13%, carotenoid –9%, compared to the control) turned out to be most favourable. The next –Humate Gel AG (chl a–10%; chl b–10%, carotenoid –9%) and the variant with ProbioHumus+Humate Gel AG (chl a– 12%; chl b– 11%, carotenoid –8%). Grain yield of oat in treated plots tended to increase and in the plots, treated with ProbioHumus a significant increase in grain yield was obtained. There was found relationship between grain yield of oat and chlorophyll a, b amount and chlorophyll a+b. Weak but significant correlation was identified between the amount of chlorophyll a, b.

Biography:

Lina Pakalniskyte is a research fellow of Nature Research Centre of Institute of Botany of Laboratory of Plant Physiology (of 1997). She started PhD studies in 2016. The topic of the dissertation is “Research of plant physiological responses to enzymatic compositions of probiotics”. The objective of work: to investigate the effects of fermented probiotics on agricultural crop growth, development, yield quality and soil structure formation. She has published 20 papers in reputed journals.