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ON THE RELATIONSHIP OF PRODUCTIVITY, PROTEIN CONTENT AND ACTIVITY OF PROTEOLITIC ENZYMES IN WINTER WHEAT GRAIN

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The paper presents the results of years of research that have shown that application of mineral nitrogen fertilizers results in high productivity and the best quality characteristics of winter wheat grain, when the fertilizer application is low, which is determined by the principles of ecologization. The treatment with ammonium nitrate application provided the highest yield of winter wheat – 4.20 t ha^{-1}, which was 0.12 t ha^{-1} higher than in the treatment where ammonium sulfate was used and 0.21 t ha^{-1} higher than in the treatment where urea was used. Also, in the treatment with ammonium nitrate, the weight of 1000 grains was the highest – 39.3 g. The study of the effect of nitrogen fertilizers on the productive process of winter wheat in terms of yield, weight of 1000 grains, vitreousness, protein content, protein yield, the amount of gluten fractions, gluten quality and activity of proteolytic enzymes showed that the effect was significant. Thus, in the fertilized treatments, compared to the unfertilized, the yield was higher by 0.46 t ha^{-1}, the mass of 1000 grains – by 1.1 g, vitreousness – by 2.2%, protein content – by 1%, protein yield per hectare – by 103.9 kg, the amount of gluten fractions – by 2%, gluten quality – by 2.5% and the activity of proteolytic enzymes – by 2.5%. The results, presented in the form of figures, processed by the method of correlation analysis and evaluated by the coefficients of determination and linear regression, allow to conclude that the strength of the influence of the studied features is sufficiently accurate and can be accepted, and the patterns are justified and only one process from a pair of features affects the variables.

Keywords: *Triticum aestivum* L, yield, vitreousness, weight of 1000 grains, protein, protein collection, sum of gluten fractions, amount of gluten, proteolytic activity of enzymes.