Mineral fertilization influence upon raw protein and amino acid content of wheat

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Abstract

Protein is valuable quality component of wheat. Higher protein content in wheat can translate to better flours and, most importantly for farmers, higher commodity prices. Proper fertilization is a critical management strategy for higher protein wheat. Balanced fertility, paying attention to all nutrient needs, is important for the farmers profit, but also for the environment protection.

The grain proteins of common wheat are rich in glutamine and proline, but low in amino acids essential for human diet, especially lysine and threonine. Variation in amino acid composition is limited and correlated with variation in grain protein percentage.

The effect of nitrogen fertilizers applied in different doses (0-200 kgN/ha) on plots prefertilized with different quantities of phosphorus and potassium (0-150 kg P_2O_5 and K_2O/ha) was observed on grain raw protein and amino acids content of winter wheat cultivated in agropedological conditions of Timisoara. Application of 150 kgN/ha leads to highest raw protein content on plot prefertilized with 150 kg/ha phosphorus and potassium. The amino acid content obtained after fertilization treatements varied significantly with protein content of the samples.

Key words: wheat, fertilizers, protein quality, aminoacids

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