THE EFFECT OF MACROELEMENTS DEFICIENCY STRESS ON ARGININE ACCUMULATION IN OILSEED RAPE LEAVES

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Nutrient deficiency stress caused many disturbances in plant metabolism, such as e.g. lowering the protein content and accumulation of free amino acids. Oilseed rape responded to stress induced by macroelements deficiency /P, N, K, Mg, Ca/ by differential accumulation of arginine and that was associated with the decrease in protein content. The highest arginine accumulation occured in the leaves of P-deficient plants and it amounted to 20 times as much as in the control plants. Considerable arginine accumulation was caused by Mg stress, which outnumber the control 10 folds. Lower arginine accumulation took place in Ca- and K-stressed plants beeing 4 and 2 fold higher than in the control, respectively. In the N-stressed plants arginine accumulation did not occur. Arginine accumulation may be an additional indicator of P, Mg, Ca and K deficiency in oilseed rape plants before or during the apperance of visual symptoms.