Influence of Cytokinins on the Course of Artificial Senescence

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The aim of my work was to find out what effect will cytokinins (phytohormones that promote cell division or cytokinesis) have for senescence of plants. Senescence (biological plant aging) is a specific process, caused by the reduction of chlorophyll content followed by the decreasing effect of photosynthesis. To investigate the senescence process more deeply, the effect of cytokinins (metatopoline, benzyladenine, 6-(3-methoxybenzylamino)-9-ß-D-ribofuranosylpurin) and light conditions - low light (90 µmol photons m-2·s-1), intensive light (300 µmol photons·m-2·s-1) and also darkness were tested aiming to observe if the process can be effectively slowed down. The experiment was performed on two different detached plants leaves - Thale Cress (Arabidopsis thaliana) and Barley (Hordeum vulgare). The chlorophyll content was measured with instrument SPAD-502 and the functionality of the photosynthesis was measured applying a very fast chlorophyll fluorescence induction with instruments PEA and NDVI. According to the obtained results, cytokinins effectively slowed down the senescence process. This may find utilization in agriculture to obtain higher crop yield.

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