PP7. BIOSTIMULATORS BASED ON NATURAL SAPONINS AND CYTOKININS

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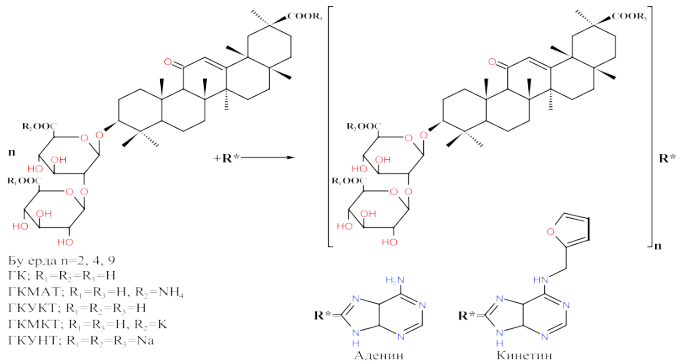
Currently, the use of cytokinins (adenine and kinetin), which perform the function of receptors of external signals in the internal tissues of plants, and supramolecular complexes obtained on the basis of them, are used in agriculture. use as a biostimulant, as a result of the activation of enzymes in the plant cell under the influence of cytokinins and the increase in the stability of the membrane, it is considered to be of great practical importance to isolate and modify the compounds that have a positive effect on the metabolism. The aim of the work is to obtain 30 supramolecular complex compounds based on cytokinins adenine and kinetin in different molar ratios with GK and its salts, and based on the study of their spectral and rheological properties, the stabilizing forces of the complexes are hydrogen bonds, hydrophobic-hydrophobic, ion-dipole ($-NH_3^{+}\cdots$ O– N, $NH^{+}\cdot\cdot$ OH^{-}) and electrostatic ($-COO^{-}\cdots+NH_3^{+}$) interactions have been proven. Their physico-chemical properties and chemical structures were analyzed based on UV, IR spectroscopy, X-ray phase analysis methods, and mass spectrometry methods.



Scheme 1. Obtaining supramolecular complexes of adenine and kinetin with GA, MASGA, MPSGA, 3KSGA, 3NaSGA

When the biostimulant properties of the obtained supramolecular complex compounds were applied to grain crops, the activity of the α-amylase enzyme increased during the germination and development of the "Krasnodar 99" wheat variety, the amount of total proteins in the grain increased by 27.39%, and the amount of macro and micro elements in the grain was comparable to the control. when studied, the quality of wheat was improved due to the increase of Ca 7-8%, Fe up to 21%, andthe amount of gluten compared to the control.

Keywords: Adenine; kinetin; glycyrrhizic acid; supramolecular chemistry.