

Spectral characteristics of wheat coleoptile and epicotyl was investigated by cytophotometry. Coleoptile growth stopped with his breakthrough of first sheet on the 9th day after seeds soaking. Growth of epicotyl began on 6th day since the start of the experience. The coleoptile evaluated the optical density of the plot is 300 mm and its top parenchymal and vascular bundle in the middle and lower parts. The optical density of epicotyl was investigated in parenchyma of cortex and central cylinder by the top of the body.

The coleoptile and epicotyl revealed the presence of several different pigment systems that absorb in the blue and red parts of the visible spectrum and have a non-overlapping spectral characteristics. Coleoptile in dark conditions has a maximum lightpiping. Mounted in tissue-specific distribution of pigment in these systems structures.

On the basis of the research revealed that the bodies of etiolated wheat seedlings – epicotyl and coleoptile different spectral characteristics. In the direction of the longitudinal axis of the coleoptile downward observed change in absorbance and the spectral characteristics of the body. As the bodies of growth is observed as a change in the spectral characteristics and the optical density in the whole of the tissue. Specificity coleoptile growth as limited growth structure with a maximum differentiated apical part explains the changes in pigment systems at the top of their restructuring, while in the lower areas mainly changes in growth activity of their constituent tissues.

Optical parameters of coleoptile and epicotyl tissues are dynamic selfdeveloping system in both the time and the spatial coordinate system of the seedling. The top of the coleoptile detects periodic change in the optical density in all parts of the spectrum in the process of germination, with an absorption maximum in the blue region of the spectrum. Undulating change in the optical characteristics in the absence of growth activity in coleoptile tip may indicate a realization of the random search algorithm of light signal in a etiolation.