

The optical properties of the tissues of the epicotyl, the node of the head internode, and the head internode of spring soft wheat (*Triticum aestivum* L.) were studied by the cytophotometric method. The spectral characteristic of the axial light transmission of the region from 380 to 750 nm was studied by parenchyma, by the tissues of the vascular bundle, by collenchyma and sclerenchyma. The tissue specificity of the optical properties of different anatomical structures and their change during ontogenesis is established. Epicotyl in the bending of the 4th leaf phenophase in the cortical parenchyma has a small absorption region at 430 and 450 nm. In sclerenchyma, an absorption region was observed at 460 nm. At the end of vegetation, the absorption region shifted to 410 nm in the epicotyl bark parenchyma. In sclerenchyma, the absorption region disappears at 460 nm. The study of the node of the head internode in the bending of the 4th leaf phenophase at the beginning of the vegetation established in its parenchyma the clear absorption spectra of the pigments of the photosynthetic apparatus at 430, 480, and 680 nm, remaining at the end of the growing season. A multiple (2 – 3 times) increase in the optical density of the tissues of the node of the head internode has been noted, which is explained by the optical screening of physiologically important plant structures. It is concluded that the optical properties of the investigated structures have a tissue specificity and exhibit a zonal confinement. Significant changes in the spectral characteristics of the tissues of the node of the head internode are associated with the special sensitivity of their cellular structures to the action of the light factor. The assumption is made about the importance of maintaining the constancy of the light gradient in the nodal zone of the wheat stem and the high activity of anatomo-morphological adaptive changes of its cells during ontogenesis.