

# APPLICATION OF PHYSICAL EXPERIMENTAL METHODS AND TECHNIQUES FOR DIAGNOSIS OF THE ENVIRONMENT AND THE REPRODUCIBILITY OF PLANTS: EXPERIMENT AND RESULTS

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## Abstract

The paper investigated the luminescence of green leaves in a living state and detached from the parent plant. This allowed to study the processes of biological decay processes. The results of photoluminescence studies were also mapped to the transmission spectra of these objects.

The rapid development of biological and agricultural Sciences because of the need to feed the increasing world population dictates the importance of in-depth study of the structure and function of living systems. Knowledge of these issues allows us to improve plant breeding, sustainable agriculture, improve the life of mankind. In this regard, increasing the need to use research proven in other scientific questions, methods and experimental techniques. Recently there has been increased use of research methods of various characteristics of the optical properties of plants.

It was found that the photoluminescence band is broadened in comparison with those obtained for the leaves, and as much extends into the long wavelength region of the spectrum. Based on these data, it is possible to draw a conclusion about the complex structure of the centers responsible for radiation. It should also be noted that the emission peak of the flower according to their colour.

In this paper, the authors report on the development of their own research photoluminescence of green leaves, in which it was discovered that they show bright photoluminescence in the red. The photoluminescence spectra for green leaves in all cases represent the two closely spaced bands. It is important to note that the energies of both bands for different types of plants almost did not differ from each other.

## Keywords

Green leaf, Phytopathology, Spectroscopy, Photoluminescence, Optical absorption, Optical transmission, Spectral contour, Energy spectrum