

THE ACTION OF FORMALDEHYDE AND CLARKE'S FIXATIVE ON THE MORPHOLOGY OF THE HAIRS CELLS OF THE STAMEN FILAMENTS OF TRADESCANTIA (MORPHOMETRIC ANALYSIS)

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The apical cells of *Tradescantia* stamen hair cells (CHST) practically do not change their shape when they are fixed in formalin, while the median and basal cells become more shorten (most compression occurs along the axis of the cells). However, there is a contraction of cell volume and cell surface area, especially in the apical region of a hair. In cells, plasmolysis is observed, most pronounced in the basal cells, less in the median and apical cells. Significant variation of the morphometric parameters of is observed after fixation, as well as in the control group of cells. The variability of the volume of the CHST may indicate a high heterogeneity of changes in the volume of the cells during fixation in formalin. After fixation in formalin, the CHST become discolored, the nuclei with clearly marked chromatin structures and the cell wall are well preserved. The appearance of small cellular structures is noted in the cytoplasm. After the Clarke fixative, compression of the cytoplasm and nuclei is observed, the cell wall loses its elasticity, in some places it forms a folded shape. The cells lose their shape, the hairs are strongly curved. The strongest changes are noted in the group of apical cells.

Keywords: *Tradescantia* stamen hair cells, chemical fixation, formalin, Clarke fixative, morphological artefacts, morphometric analysis