Efecte citogenetice şi biochimice induse de tratamentul cu acid ascorbic şi acid citric la Thuja orientalis L.

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Choosing this species as the investigation material is motivated by a small number of existed studies, and the dates that will be obtained can be used to improve plants. The investigation of cell division is a permanently preoccupation, this process having a major importance in development of the individual biological systems. In this approach we propose to analyse by citogenetic and biochemic way, Thuja orientalis L. from Cupressaceae family. Thus, we treated Thuja orientalis L. seeds with solutions of ascorbic acid (E300) and citric acid (E330) in three different concentrations: 0.1 %, 0.25 % and 0.5 %. The results we obtained were colligated with the etalon. We observed the stimulator or inhibitor effect of ascorbic acid and citric acid to the mitotic division and estimated the aberrations appearance. After calculation, we observed that citric acid has a strong effect to the roots of Thuja orientalis L. establishing the increase of aberrations in cells. Between aberrations, the simples and multiples bridges are predominant. This explained that the used substances blocked the migrations of chromosomes to the poles of the division axle. The small number of aberrant ana-telophases after the treatment with ascorbic acid can be determinated by a strong antioxidant effect of this substances. The mitotic index increases at seeds treated with citric acid, which indicates that this substance stimulates the cells division. The biochemicals investigations was based on the estimation of respiration enzymes activity (superoxid dismutase, peroxidase and catalase). The enzymes activity is inhibited by high concentrations, comparative the etalon. Behind the biochemicals analyses, we observed that superoxid dismutase(SOD) and catalase are inhibited of high concentrations. By other way, the peroxidase activity is stimulate at both treatments. In conclusion, this two substances has influence to the reactive species of oxygen and this reflect the cell stress state.