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**ON THE PROBABILITY OF THE ORIGIN OF TRACHEARY ELEMENTS'
PROGENITORS IN TISSUE CULTURE THROUGH AMITOSIS**

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Tracheary elements (TE) are the vessel system cells and are usually abundant during passage. Though, they are not living ones, but dead reservoirs with irregularly incrassate cell walls. TE are known to be the result of programmed cell death (Groover, 1995), but the origin of cells-progenitors is still unstudied. Similarly, there are but a few data of their utilization.

We studied the regularities of differentiation and proliferation processes in the tissue culture of the cell line K-27 (*Rauwolfia serpenilna* Benth). The culture has two proliferation types: mitosis and amitosis the latter being more frequent.

Our research showed a series of consecutive events of the complete amitosis, when the nucleus is divided by the constrictions and the daughter nuclei are spindle-like. Usually, the cells deriving from amitotic divisions could be seen in packs, with TE on one side and the cells with clearly visible nuclei on the other. The middle cells were similar to those described by Groover et al (1995), and were therefore counted as apoptosis stages.

We did not find any correlation between the dynamics of TE accumulation and mitosis. The picture may arise from the fact that only part of amitotic cells produce TE.

TE accumulation undoubtedly contributes much to the dry biomass. We found positive correlation between the dynamics of the dry biomass accumulation and the number of TE ($R=+0.24$). In the same time, the dynamics of amitoses that admittedly led to the the origin of TE progenitors, also correlated positively with the rate of dry biomass accumulation ($R=+0.29$).

Also, in certain days during the passages we observed destruction of TE. They disintegrated to separate fibres.