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Investigation of the effect of paramagnetic impurities on the spin-lattice relaxation of protons of intracellular water

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Abstract

The authors have studied the effect of the paramagnetic ions - Mn^{2+} and Fe^{3+} - on the spin-lattice relaxation of the protons of water in plant cells. It has been established that the paramagnetic impurities contained in plant cells in the usual conditions (in natural quantities) have no appreciable influence on the rate of the spin-lattice relaxation of the protons of water. On the basis of investigation of the proton spin-lattice relaxation with a raised content of the paramagnetic ions (Mn^{2+}) in plant cells the possibility of separating the relaxation times T_{1l} and T_{1s} to which correspond different fractions of water in the cells is demonstrated. © 1979.
