THE PECULIARITIES OF DETERMINATION OF SPIN-SPIN RELAXATION TIME IN LIQUID FOODS

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The aim and task of the article is to improve the quality of measuring spin-spin relaxation time $T_2$ of foods with high moisture content, the moisture condition of which doesn’t significantly differ from pure water. It would be useful to determine the influence limits of measurement errors on the final value of $T_2$ and to determine processing algorithm for the results of the research.

The results of determination of the spin-spin relaxation in foods with high moisture content are considered. The measurements are performed using impulse-NMR spectrometer. Preliminary evaluation of the results sensitivity depending on the possible errors of measurement is conducted. The preliminary correlation between the errors of measurement and results of the evaluation of spin-spin relaxation time are obtained. It is determined that minimum mobility of water is observed in instant coffee. This is connected with the hydration of instant coffee components. Extraction of coffee grains with varying grinding degrees determines different values of $T_2$. It is demonstrated that richness of milk considerably influences the mobility of water molecules.

Keywords: water mobility, nuclear magnetic resonance spectrometer, spin-spin relaxation.