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Study on the Water State and Distribution of Chinese Dried Noodles during the Drying Process

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Running title: Water State and Distribution of Chinese Dried Noodles

Abstract:

In this study, the water state and distribution of Chinese dried noodles during drying process was investigated by low-field nuclear magnetic resonance (LF-NMR). Transverse relaxation times (T_2) were achieved by LF-NMR coupled with a 0.5 T permanent magnet equivalent to a proton resonance frequency of 21 MHz at 32 °C. Three populations of water state can be distinguished: strongly bound water (T_{21}, 0.04-0.40ms; A_{21}, 0.25-19.08%), weakly bound water (T_{22}, 0.96-5.34; A_{22}, 0.81-98.44%), and free water (T_{23}, 74.50-266.47 ms; A_{23}, 0.11-1.61%). During the drying process,

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