The Oil Absorption of Soy Protein Isolate in High Temperature and Humidity Storage

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The SPI was applied in food industry widely, but the functionalities of it may change during storage. The effect of store temperature, time, RH and package material on SPI component and oil absorption were studied, when SPI was packaged in 100% N₂ and Al, 80%N₂:20%CO₂ and Al, 60%N₂:40% CO₂ and Al, vacuum and Al, white paper/plastic/HDPE, and PE and then stored for 5 months in the conditions of RH 80% and 30°C. It was observed by SDS-PAGE that the subunit of SPI disaggregated and molecules aggregated. Comparing the functionalities of SPI with different packaging material, it was shown that the sequence of the barrier property of material to T and RH was Al packaging >factory packaging >PE packaging. Analysis by relatedness, it was shown that the 7S/11S of SPI with PE packaging storage was significantly positive with oil absorption (0.942**). The content of -SH with 60%N₂:40%CO₂ was significantly negative with oil absorption (-0.819*) but the -S-S- of SPI in 60%N₂:40%CO₂ was significantly positive (0.811*) correlation with oil absorption.