

PROTEIN-PROTEIN INTERACTIONS OF SOY PROTEIN ISOLATE FROM EXTRUSION PROCESSING

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ABSTRACT

The effects of various extrusions on protein-protein interactions in soy protein isolate were investigated. Soy protein isolate and wheat starch at 9:1 ration were extruded at 35% and 60% moisture content and 124.2, 134 and 140.6°C product temperature. Dead stop procedure and repeated extrusion were done with 60% moisture content and 124.2°C product temperature. The protein solubility results show that although product temperatures did not cause significant difference on the amount of soluble proteins, samples between low moisture and high moisture extrusion did. The results of SEM, color analysis and protein solubility test suggested that the physical appearances and chemical bonds were affected by the second extrusion. In all extrusions and the dead stop procedure, the decrease in protein solubility after extrusion was due to the formation of the three dimensional network of the soy protein isolate polypeptide chains. From all SDS-PAGE tests the results suggested that the extrusion of soy protein isolates modified very little at the molecular level and that the protein subunits did not have any structural changes.