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A Study on the Difference of Chemical and Physical Properties for Different Soybean Protein

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Abstract

Soybean is the most important source of vegetable protein in the world. Its major proteins are 7S and 11S globulin which have important effects on processing due to the emulsification of protein. The objective of this research was to investigate the difference among different sources of soybean proteins by the chemical and physical analyses. Eight soybean protein isolates of different regions and brands were used as raw materials. Based on the analysis results of SDS-PAGE, the 7S and 11S globulins in eight soybean protein isolates showed significant different patterns. The crude protein contents were also different among eight samples. The Rapid Visco Analyser (RVA) results of eight soy bean isolates varied from the lowest of 165 cp to the highest of 918cp. Furthermore, the analysis of emulsification activity indicated that the emulsification activity was increased along with the increasing viscosity. As to the observation of optical microscope, a negative relationship between viscosity and particle size of emulsion was found. The emulsification activity of soybean protein isolate has an important effect on the viscosity. The significant difference of 7S and 11S globulins was found in their compositions.

Key words: Soybean, protein, globulin, emulsification activity, viscosity
