

# Study on functional properties of whole soybean flour

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## Abstract

Soybean is a good source of plant based protein. Soy protein has many functional properties that is widely used in different products, but high degree processing results in loss of valuable nutrition. Whole bean processing can retain original nutrients and has higher level of dietary fiber and phytochemical than protein isolate. But due to the interference of fiber and other materials, the functional properties of whole soybean flour are not as good as protein isolate, which limits its application. In this study, we investigated the effects of different treatments and varieties on functional properties of whole soybean flour, including solubility, water and oil binding capacity, foaming and emulsifying properties. Whole soybean was subjected to different treatments including dry milling, wet milling or roasting, and subsequently grounded into flour to pass through 60 mesh sieve. The solubility, water binding capacity and oil binding capacity are lower in roasted whole soybean flour while dry milled one has the highest values. In foaming and emulsifying properties, there are no significant differences among treatments. However, functional properties have no significant differences among varieties. Overall, the different treatments affect functional properties of soybean, and can serve as reference for manufacture of whole soybean products.

**Keywords:** functional property; soybean; whole bean processing

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