Research project name Formulation development and effects of production process on the chemical and microbiological stability of soybean extract-filled capsules

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Abstract

The main objective of this study was to develop an extraction process for soybean, in order to achieve soybean extracted powder with desirable physical properties and certified amount of Genistein, suitable for industrial scale. Extraction process had utilized ethanol with acid catalysis at 70°C for 3 hours. This study was divided into 3 parts. The first part was to compare 2 catalytic acids, hydrochloric (HCl) and acetic acid. The results indicated that acetic acid demonstrated significantly higher yield of Genistein than those obtained from HCl. The second part was to compare 3 strengths of acetic acid; 2, 5 and 10 N. 5 N acetic acid showed the highest yield of Genistein (75 mg of Genistein/1 g of soybean. The third part was to examine physical properties of soybean extracted powder. The powder appearance was light-yellow fine powder the average size about 425 micrometers. It demonstrated good flow properties with angle of repose of 30.00°, bulk density of 0.97 g/mL, tapped density of 1.21 g/mL and true density of 2.39 g/mL. Soybean extracted powder was then formulated into capsules in 2 different doses (150 and 250 mg/capsule). Lactose was used as a diluent. Disintegration time of soybean extract-filled capsules was less than 30 minutes according to USP standard.