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Soybean milk is a milk alternative beverage due to its inexpensive high quality vegetable protein. Soybean milk (soybean to water = 1:8 (w/w)) contains an equal amount of protein but only 1/6 of calcium to a comparable amount of cow's milk. The objective of this study was to fortify calcium in soybean milk with similar levels of calcium to cow's milk. Three forms of calcium salts were tested, namely calcium carbonate, tri-calcium phosphate and calcium lactogluconate. Solubility and dispersion of calcium carbonate in soybean milk was rather poor (11%) which increased (to 27%) by the addition 300 mg sequestering agent (potassium citrate) and 30 mg stabilising agent (carrageenan). For tri-calcium phosphate, a considerable amount was dispersed and solubilised. These properties were improved slightly, from 66% to 72% with the addition of the sequestering and stabilising agents. Calcium lactogluconate showed the highest calcium solubility and dispersion, but, it caused protein coagulation. Addition of 600 mg sequestering agent (potassium citrate) per 100 ml calcium lactogluconate fortified soybean milk could prevent this condition. However, the agent could produce an undesirable chemical aftertaste in the product when used in large amount, only soybean milk with two forms of calcium salts were tested for calcium bioavailability by *in-vitro* Miller's method. Soybean milk, 100ml, fortified with calcium carbonate (120 mg total Ca), with 300 mg potassium citrate and 30 mg carrageenan, exhibited 19% calcium availability, comparable to 18% in natural cow's milk. Tri-calcium phosphate fortified soybean milk (120 mg total Ca/100ml), with 300 mg potassium citrate and 25 mg carrageenan, showed 15% calcium bioavailability. Both type of calcium fortified soybean milk exhibited higher availability of calcium than that of non-fortified soybean milk (11% calcium availability).

The overall acceptability of the 2 types of calcium-fortified soybean milk was about 7 from a 9-point hedonic scale (like moderately), whereas that of the non-fortified soybean milk was about 6 (like slightly). The Ca:P ratios in different types of soybean milk : non-fortified, fortified with calcium carbonate and with tri-calcium phosphate, were 1:2, 2.6:1 and 1.25:1, respectively. The costs of raw materials for calcium fortified soybean milk with calcium carbonate and with tri-calcium phosphate was 1.2 and 1.6 baht per serving (200 ml), respectively, compared to 0.6 baht per serving from non-fortified soybean milk.