

Research Title	The study on cellulose extraction from Moringa seed cake
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Moringa seed cake is the residue from Moringa oil extraction. After oil extraction, the cake consists of dietary fiber. To examine whether Moringa seed cake can be applied in food as a source of dietary fiber, the seed cake was determined in chemical compositions. Cellulose from the seed cake was then extracted and characterized. To obtain the optimum methods and conditions for cellulose extraction, the chemical and biological methods were studied. Then, the properties of Moringa seed cake cellulose (MSC) were characterized and compared with those of commercial cellulose. The chemical compositions of cake consist of carbohydrate, fiber and protein, having an average value of 30.46, 28.85 and 22.96% dry basis, respectively. The suitable method and condition for cellulose extraction from Moringa seed cake was obtained using the chemical method with a pre-hydrolysis temperature at 90°C and 5%NaOH, which gave high in yield content (22.05%) and cellulose content (94.75%). The color of MSC was darker (lower L^*) than that of commercial cellulose (CMC). Moisture content, water and oil retention capacity of MSC were similar to those of commercial cellulose. However, MSC is high swelling capacity and low bulk density. Therefore, Moringa seed cake is a proper source for cellulose extraction, which can be applied for use as a food additive in the future.