

Extraction and Characterization of Sacha Inchi (*Plukenetia volubilis* L.) Seed oil

ABSTRACT

Sacha inchi (*Plukenetia volubilis* L.) is an oleaginous plant known as Inca nut, mani inca, mani silvestre, or montana mani. Sacha inchi seed contains oil (35-60%), protein (25-30%), vitamin E, carotenoids, polyphenols, and minerals while sachu inchi seed oil (SISO) contains essential fatty acids (ω -6 and ω -3 fatty acids) such as linoleic (34-37%) and linolenic (42-51%) acids which comprised more than 90% of the total which makes sachu inchi plant valuable. The yield of oil extraction by screw press method is very low and the environmental issue of using fish as the omega-3 source has been questioned due to its potential of contaminations. The value of palm oil can be increase as well as its market demand by enhancing its characterization. The purpose of this study is to extract the SISO by two (2) different method and to determine its nutritional quality, physicochemical properties, phytosterols, and tocopherol contents. The nutrient composition of SIS will be determine before extracting it by screw press and soxhlet and compare its extraction yield. Physicochemical characterization and antioxidant of SISO will be determined. SISO can be blended with palm oil and the properties of blended oil will be determine to identify an innovative oil which could be exploited in other food and pharmaceutical applications. We are highly expecting that Sacha inchi seed could be useful new source of edible oils that could also be allowed the possibility of economic exploitation together with palm oil.