Instant Powder Formulation for Anti Anemia and Optimization Exctraction 136 - 142 Condition of Moringa pterygosperma Gaertn Leaves Using MAE

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Abstrak

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Suplemen besi yang mengandung ferrous sulfat umum digunakan untuk anti anemia. Sayangnya sediaan ini memiliki rasa tidak enak, menyebabkan mual dan jika digunakan dengan dosis besar dan jangka waktu lama dapat menyebabkan efek samping. Perlu dicari alternative sumber lain, termasuk dari tanaman. Daun Moringa pterigospera Gaertn dipilih karena mengandung besi dan suplemen lain. Penelitian ini bertujuan untuk membuat formulasi serbuk instan untuk anti anemia sebagai alternatif suplementasi zat besi selain dari ferous sulfat, dengan menggunakan ekstrak dari daun kelor (Moringa pterygosperma Gaertn). Ekstrak diperoleh dengan metode Microwave Assisted Extraction. Optimasi kondisi dibuat dengan memvariasikan pelarut etanol (0-70%), daya listrik microwave (450-900 watt) dan waktu ekstraksi 3-10 menit. Analisa kadar besi dilakukan menggunakan Spektrofotometer Serapan Atom pada panjang gelombang 248 nm. Formula serbuk instan dibuat dengan 3 konsentrasi natrium CMC sebagai bahan pensuspensi. Penelitian menunjukkan bahwa kondisi optimal ekstraksi yang menghasilkan kandungan besi paling besar (2,4 mg/g ekstrak) dicapai dengan daya listrik 900 watt, waktu ekstraksi 10 menit dan pelarut air suling. Berdasarkan uji hedonis dengan 30 panelis, formula dengan 5% natrium CMC paling disukai. Bentuk serbuk memiliki kadar air 2,31%, laju alir 7,74 g/detik dan bentuk rekonstitusinya memiliki pH 5,78, dan viskositas 15,98 cps.
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ABSTRACT
Iron supplement containing ferrous sulfate is commonly used for anaemia. Unfortunately, it has bad taste, can cause nausea, and made adverse effects if taken in large doses for long periods. It is necessary to 􀀁ind an alternative source of raw materials, including those from plants. Moringa pterigospera Gaertn leaves was selected because it contains iron and other nutritions. The purpose of this work was to make instant powder formula for anti anaemia using Moringa leaves extract as an alternative for ferous suphate iron suplementation. The extraction was performed by Microwave Assisted Extraction method. Optimization of extraction condition was performed by creating some variations in solvent composition (0-70% ethanol), microwave power (450 to 900 watts) and extraction time (3 to10 min). Iron content was determined by Atomic Absorption Spectrophotometer at wave length of 248 nm. Instant powder formula was made in 3 concentrations of sodium CMC as suspending agent. Results of the study showed that the most optimal extraction condition which resulted the highest iron content (2.4 mg/g extracts) achieved with 900 watts microwave power, 10 min extraction time and aqua demineralisata. According to 30 panelists of hedonic test, formula which used 5% w/w of sodium CMC got the highest scores. Its powder form had 2.31% of loss on drying and 7.74 g/sec of 􀀁low rate for powder form and pH of 5.78, viscosity of 15.98 cps for reconstituted form.