

# Formulasi serbuk instan ekstrak daun kelor (*Moringa pterigosperma gaertn*) sebagai anti anemia yang diperoleh dari optimasi kondisi ekstraksi dengan microwave = Instant powder formulation of extract (*Moringa pterigosperma gaertn*) leaves as anti anemia and its extraction optimation condition with microwave

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## Abstrak

### [<b>ABSTRAK</b><br>

Suplemen besi yang mengandung ferrous sulfat umum digunakan untuk anti anemia. 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 pterigosperma 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 pterigosperma 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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### <b>ABSTRACT</b><br>

Iron supplement contains ferrous sulfate is commonly used for anemia. Ferrous sulfate has bad taste, can cause nausea, and made adverse effects if taken in large doses for long periods. It is necessary to find an alternative source of raw materials, including those from plants. *Moringa pterigosperma Gaertn* leaves was selected because it contains iron and other nutritions. The purpose of this work was to make instant powder formula for anti anemia using *Moringa* leave?s extract as an alternative for ferous suphate iron supplementation. The extraction was performed by Microwave Assisted Extraction method. Optimation 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 to 10

min). Iron content was determined by Atomic Absorption Spectrophotometer at wavelength 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 iron/g extracts) achieved with 900 watts microwave power, 10 min extraction time and aquademineralisata. 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 flow rate for powder form and pH of 5.78, viscosity of 15.98 cps for reconstituted form.;Iron supplement contains ferrous sulfate is commonly used for anemia. Ferrous

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