UNIVERSITAS AISYIYAH PALEMBANG FAKULTAS KESEHATAN DAN TEKNOLOGI PROGRAM STUDI S1 FARMASI

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Aplikasi Metode *Simplex Latice Design* dalam Optimasi Formula Minuman Boba Herbal Untuk Mengatasi Dismenore Remaja Kondisi *Premenstrual Syndrome*

XXV, 70 Halaman, 16 Tabel, 17 Gambar, 9 Daftar singkatan, 17 Lampiran

ABSTRAK

Latar belakang: Dismenore merupakan nyeri yang dialami selama menstruasi yang ditandai dengan gejala yang khas seperti nyeri atau kram pada perut yang dapat menjalar ke pinggang, disertai rasa lelah, mual, muntah dan sakit kepala. Dismenorea ini dapat diatasi melalui pendekatan farmakologi maupun non-farmakologi. Terapi farmakologi seperti NSAID efektif namun berpotensi menimbulkan efek samping, sedangkan ramuan herbal atau jamu kurang diminati remaja karena rasa yang tidak enak dan kurang praktis. Boba herbal yang mengandung kunyit, jahe merah, asam jawa dan madu menawarkan alternatif menarik dengan memadukan khasiat herbal dan cita rasa yang lebih disukai. **Tujuan:** Untuk mengetahui karakteristik boba alginat-kitosan pada formula optimum metode *Simplex Lattice Design* dan mengetahui tingkat kesukaan responden terhadap minuman boba herbal **Metode:** Optimasi formula dilakukan dengan menggunakan metode *simplex lattice design* dengan bantuan piranti lunak *design expert* (DX)®12. Evaluasi formula mencakup pengukuran *yield production* dan *swelling index* sebagai parameter utama, serta penentuan keseragaman bobot yang diperoleh sebesar rata rata 0,07855 gram dan waktu hancur selama 30 menit pada kondisi pH lambung, sebagai salah satu parameter mutu fisik produk. **Hasil:** Formula terpilih adalah alginat 0,5% dan kitosan 1,5 % **Kesimpulan:** Karakteristik formula optimum boba dengan parameter warna boba oren, tekstur lunak rapuh, aroma bau jamu agak kuat, serta bentuknya bulat dan tingkat kesukaan responden menunjukkan produk diterima dengan baik dari segi warna, rasa, dan aroma, sehingga berpotensi dikembangkan sebagai minuman fungsional.
Kata kunci: Alginat, Boba, Kitosan, *Simplex Lattice Design*
Daftar Pustaka: 82 (2014-2023)

AISYIYAH UNIVERSITY PALEMBANG FACULTY OF HEALTH AND TECHNOLOGY BACHELOR OF PHARMACY STUDY PROGRAM

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Application of Simplex Lattice Design Method in Optimizing of Herbal Boba Drink Formula to Address Dysmenorrhea in Adolescents with Premenstrual Syndrome.

XXV, 70 Pages, 16 Tables, 17 Pictures, 9 List of abbreviations, 17 Attachments.

ABSTRACT

Background: Dysmenorrhea is a pain experienced during menstruation, characterized by typical symptoms like abdominal pain or cramps that can radiate to the waist, accompanied by fatigue, nausea, vomiting, and headaches. While this condition can be managed through pharmacological or non-pharmacological approaches, pharmacological therapies like NSAIDs are effective but carry a risk of side effects. Traditional herbal remedies or jamu, on the other hand, are less popular with adolescents due to their unpleasant taste and impracticality. This created a need for a more appealing and easy-to-consume herbal alternative, leading to the development of a herbal boba drink that combines turmeric, red ginger, tamarind, and honey. **Objective**: The Objective of this study was to determine the characteristics of alginate-chitosan boba from the optimum formula using the Simplex Lattice Design method and to assess the level of consumer preference for the herbal boba drink. **Methodology** : Formula optimization was conducted using the Simplex Lattice Design method with the aid of Design Expert (DX)®12 software. Formula evaluation included measuring yield production and swelling index as the primary parameters. Additionally, weight uniformity, which averaged 0.07855 grams, and a disintegration time of 30 minutesunder gastric pH conditions were determined as key physical quality parameters of the product. **Results**: The selected formula consisted of 0.5% alginate and 1.5% chitosan. **Concusion**: The optimum boba formula was characterized by an orange color, a soft yet brittle texture, a slightly strong herbal aroma, and a round shape. The sensory evaluation indicated that the product was well-accepted by respondents in terms of its color, taste, and aroma, suggesting its potential for development as a functional beverage.

Keywords: Alginate, Boba, Chitosan, Simplex Lattice Design
References: 82 (2014-2023)