

# FORMULASI TABLET HISAP EKSTRAK BUNGA TELANG (*Clitoria ternatea* L.) DAN EVALUASI SIFAT FISIK TABLET DENGAN VARIASI KONSENTRASI BAHAN PENGIKAT CMC-NA

Efni Ratnatul Aini<sup>1</sup>, Marchaban<sup>2</sup>

## INTISARI

**Latar Belakang:** Bunga telang (*Clitoria ternatea* L.) mengandung senyawa flavonoid yang mempunyai efek farmakologis sebagai antioksidan. Antioksidan sebagai penangkal radikal bebas yang menyebabkan kerusakan sel. Selain dari tumbuhan, antioksidan juga dapat diformulasikan dalam bentuk sediaan farmasi seperti tablet hisap. Tablet hisap merupakan sediaan padat yang melarut perlahan dalam mulut. Untuk menghasilkan tablet hisap yang baik, dibutuhkan bahan pengikat. Salah satu bahan pengikat yang digunakan adalah (CMC-Na).

**Tujuan Penelitian:** Membuat tablet hisap dari ekstrak bunga telang dengan variasi konsentrasi CMC-Na dan mengevaluasi pengaruhnya terhadap sifat fisik tablet.

**Metode Penelitian:** Ekstrak bunga telang diperoleh melalui metode maserasi selama tiga hari, kemudian dilakukan pengentalan dan skrining fitokimia. Tablet hisap dibuat dengan metode granulasi basah menggunakan CMC-Na dengan konsentrasi 1-5%. Evaluasi dilakukan terhadap keseragaman bobot, keseragaman ukuran, kekerasan, kerapuhan dan waktu larut.

**Hasil Penelitian:** Keseragaman bobot kelima formula memiliki rata-rata 723,735 mg, 732,665 mg, 716,85 mg, 715,61 mg, dan 730,665 mg dengan nilai CV < 5%. Diameter tablet sebesar 1,31 cm dengan nilai CV < 5%. Ketebalan tablet berkisar antara 0,382 cm – 0,388 cm dengan nilai CV < 5%. Nilai % kekerasan 5,302 kg-8,18 kg, kerapuhan berkisar antara 0,2%-0,9% dan waktu larut berkisar antara 65,66 menit -73, 333 menit.

**Kesimpulan:** Ekstrak bunga telang dapat dibuat dalam tablet hisap dengan variasi bahan pengikat CMC-Na. Variasi konsentrasi CMC-Na mempengaruhi keseragaman bobot dan kekerasan tablet. Kenaikan konsentrasi CMC-Na dapat meningkatkan bobot dan meningkatkan kekerasan tablet secara signifikan.

**Kata Kunci:** Bunga Telang (*Clitoria ternatea* L.), CMC-Na, Tablet Hisap

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<sup>1</sup>Mahasiswa Farmasi Universitas Jenderal Achmad Yani Yogyakarta

<sup>2</sup>Dosen Farmasi Universitas Jenderal Achmad Yani Yogyakarta

## FORMULATION AND PHYSICAL PROPERTIES EVALUATION OF LOZENGES CONTAINING (*Clitoria ternatea* L.) FLOWER EXTRACT WITH VARIATION OF CMC-NA AS BINDER

Efni Ratnatul Aini<sup>1</sup>, Marchaban<sup>2</sup>

### ABSTRACT

**Background:** Butterfly pea flower (*Clitoria ternatea* L.) contains flavonoid compounds that have pharmacological effects as antioxidants. Antioxidants function to neutralize free radicals that cause cellular damage. In addition to being derived from plants, antioxidants can also be formulated into pharmaceutical dosage forms such as lozenges. Lozenges are solid dosage forms that dissolve slowly in the mouth. To produce good-quality lozenges, a binder is needed. One of the binders used is sodium carboxymethyl cellulose (CMC-Na).

**Objectives:** To formulate lozenges from butterfly pea flower extract with varying concentrations of CMC-Na and to evaluate their effects on the physical properties of the tablets.

**Method:** Butterfly pea flower extract was obtained through maceration for three days, followed by concentration and phytochemical screening. The lozenges were prepared using the wet granulation method with CMC-Na at concentrations ranging from 1% to 5%. Evaluations were conducted on weight uniformity, size uniformity, hardness, friability, and dissolution time

**Results:** The weight uniformity of the five formulas has an average of 723,735 mg, 732,665 mg, 716,85 mg, 715,61 mg, and 730,665 mg with a CV value of <5%. The tablet diameter is 1,31 cm with a CV value of <5%. The tablet thickness ranges from 0,382 cm – 0,388 cm with a CV value of <5%. The % hardness value is 5,302 kg-8,18 kg t, friability ranges from 0,2%-0,9% and dissolution time ranges from 65,66 minutes -73, 333 minutes.

**Conclusion:** The extract of butterfly pea flower can be formulated into lozenges using varying concentrations of CMC-Na as a binder. Variations in CMC-Na concentration affect the weight uniformity and hardness of the tablets. An increase in CMC-Na concentration can significantly enhance both the tablet weight and hardness.

**Keywords:** Butterfly Pea Flower, CMC-Na, Lozenges

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<sup>1</sup> Student of Pharmacy, Universitas Jenderal Achmad Yani Yogyakarta

<sup>2</sup> Lecturer of Pharmacy, Universitas Jenderal Achmad Yani Yogyakarta