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## **PENGARUH KONSENTRASI *GELLING AGENT* CMC-NA DAN KARBOPOL TERHADAP SIFAT FISIK SEDIAAN GEL**

### **ABSTRAK**

**Latar Belakang:** Teknologi formulasi sediaan farmasi mempunyai peranan penting dalam proses penemuan terapi farmasetis yang baru. Formulasi gel membutuhkan berbagai jenis *gelling agent* agar menghasilkan gel yang baik. Penggunaan jenis dan konsentrasi *gelling agent* dapat mempengaruhi sifat fisik sediaan gel sehingga harus dilakukan uji sifat fisik dan kestabilan fisik gel.

**Tujuan:** Mengetahui pengaruh konsentrasi *gelling agent* CMC-Na dan karbopol terhadap sifat fisik gel.

**Metode:** Penelitian ini merupakan penelitian meta analisis dimana metode penelitiannya mengambil simpulan yang menggabungkan dua atau lebih penelitian sejenisnya sehingga diperoleh paduan data secara kuantitatif.

**Hasil:** Formulasi menggunakan *gelling agent* CMC-Na menghasilkan gel yang keruh. Semakin tinggi konsentrasi CMC-Na maka viskositas dan daya lekatnya semakin tinggi, daya sebar semakin kecil, nilai pH akan meningkat. Sedangkan Formulasi menggunakan *gelling agent* karbopol menghasilkan gel yang bening. Semakin tinggi konsentrasi karbopol maka viskositas dan daya lekatnya semakin tinggi, daya sebar semakin kecil.

**Kesimpulan:** Konsentrasi CMC-Na berpengaruh terhadap organoleptis, pH, viskositas dan daya sebar sediaan gel. Konsentrasi karbopol berpengaruh terhadap viskositas, daya sebar sediaan gel.

**Kata kunci :** *gelling agent*, CMC-Na, Karbopol, Sifat Fisik

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## **THE EFFECT OF *GELLING AGENT* CMC-NA AND CARBOPOL CONCENTRATION ON THE PHYSICAL PROPERTIES OF GEL**

### **ABSTRACT**

**Background:** Pharmaceutical preparation formulation technology has an important role in the process of discovering new pharmaceutical therapies. Gel formulation requires various types of *gelling agents* to produce a good gel. The use of the type and concentration of the *gelling agent* can affect the physical properties of the gel preparation so that the physical properties and physical stability of the gel must be tested.

**Research Purposes:** To determine the effect of the concentration of CMC-Na and carbopol *gelling agent* on the physical of the gel.

**Methods:** This research is a meta-analysis research where the research method draws conclusions that combine two or more similar studies in order to obtain a combination of quantitative data.

**Results:** Formulation using the CMC-Na *gelling agent* produced a cloudy gel. The higher the CMC-Na concentration, the higher the viscosity and adhesion, the smaller the spreading power. While the formulation using carbopol *gelling agent* produces a clear gel. The higher the carbopol concentration, the higher the viscosity and adhesion, the smaller the spreading power. The pH of the preparation will drop during storage when the *gelling agent* concentration is low.

**Conclusion:** The concentration of CMC-Na affected organoleptic, pH, viscosity and dispersibility of the gel preparation. Carbopol concentration affects viscosity, and dispersibility of the gel preparation.

**Key words:** *gelling agent*, CMC-Na, Carbopol, Physical Properties