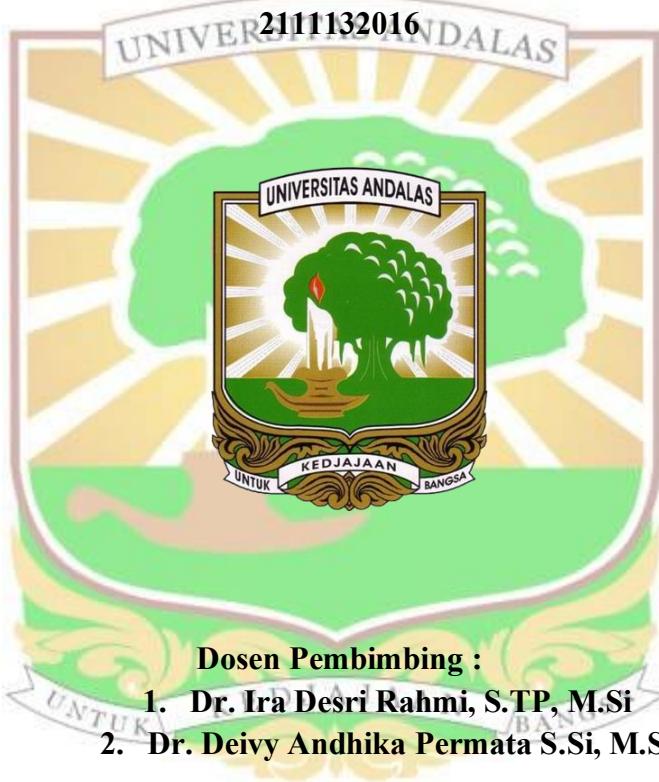


**KARAKTERISASI BEADS KOMPOSIT ALGINAT  
DENGAN PENAMBAHAN PATI BENGKUANG**  
*(Aphorizes erosus L.)*

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# Karakterisasi *Beads* Komposit Alginat dengan Penambahan Pati Bengkuang (*Pachyrhizus erosus* L.)

Neta Yolanda, Ira Desri Rahmi, Deivy Andhika Permata

## ABSTRAK

*Beads* merupakan mikrokapsul berbentuk bulat yang berfungsi sebagai substrat padat untuk melapisi atau mengenkapsulasi senyawa aktif. Natrium alginat adalah polimer alami yang umum digunakan dalam pembuatan *beads* karena keunggulannya, namun masih memiliki kelemahan seperti *beads* yang dihasilkan memiliki penampilan yang buruk. Penelitian ini bertujuan untuk mengidentifikasi pengaruh penambahan variasi konsentrasi pati bengkuang yang berbeda terhadap kualitas *beads*. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan lima perlakuan variasi konsentrasi pati bengkuang dan tiga ulangan, serta dianalisis secara statistik menggunakan ANOVA dan uji lanjut DNMRT. Hasil menunjukkan bahwa penambahan pati bengkuang berpengaruh nyata terhadap karakteristik fisik *beads*, termasuk diameter, sferikal faktor, kekerasan, kadar air, densitas, porositas, sineresis, rendemen, serta ditunjang oleh analisis gugus fungsi. Perlakuan terbaik berdasarkan karakterisasi fisik yaitu perlakuan B (penambahan 1% pati bengkuang) dengan karakteristik fisik yaitu diameter 4,26 mm, sferikal faktor 0,02, Secara ekonomi, harga pokok produksi *beads* sebesar Rp13.746/botol dengan nilai jual Rp21.000,00/botol.

Kata kunci: Alginat, *Beads*, komposit, Pati Bengkuang, Pengisi

# ***Characterization of Alginate Composite Beads with Jicama Starch (*Pachyrhizus erosus* L.)***

Neta Yolanda , Ira Desri Rahmi, Deivy Andhika Permata

## **ABSTRACT**

Beads are spherical microcapsules that function as a solid substrate for coating or encapsulating active compounds. Sodium alginate is a natural polymer commonly used in the manufacture of beads due to its advantages, but it still has disadvantages such as the poor appearance of the beads produced. This study aims to identify the effect of adding different concentrations of cassava starch on the quality of the beads. The study used a Completely Randomized Design (CRD) with five treatments varying in cassava starch concentration and three replications, and was statistically analyzed using ANOVA and post-hoc DNMRT tests. The results showed that the addition of cassava starch significantly affected the physical characteristics of the beads, including diameter, sphericity factor, hardness, moisture content, density, porosity, syneresis, yield, and supported by functional group analysis. The best treatment based on physical characterization was treatment B (addition of 1% cassava starch) with physical characteristics of diameter 4.26 mm, sphericity factor 0.02. Economically, the production cost of the beads was Rp13.746/bottle with a selling price of Rp21,000.00/bottle.

Keywords: Alginate, Beads, composite, filler, Jicama Starch