

**PEMBUATAN DAN KARAKTERISTIK PLASTIK  
BIODEGRADABLE PATI TALAS (*Colocasia gigantea* Hook.f)  
DENGAN PENAMBAHAN KITOSAN LIMBAH UDANG**

**ASES HERMAWARNI  
1311121091**



**PEMBIMBING :**

- 1. Dr. Ir. Alfi Asben, M.Si**
- 2. Purnama Dini Hari, S.TP, M.Sc**

**FAKULTAS TEKNOLOGI PERTANIAN  
UNIVERSITAS ANDALAS  
PADANG  
2019**

# **Pembuatan dan Karakteristik Plastik *Biodegradable* Pati Talas (*Colocasia gigantea* Hook.f) dengan Penambahan Kitosan Limbah Udang**

Ases Hermawarni, Alfi Asben, Punama Dini Hari

## **ABSTRAK**

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan kitosan terhadap karakteristik plastik *biodegradable* dan mengetahui konsentrasi kitosan yang tepat dalam pembuatan plastik *biodegradable*. Penelitian ini menggunakan rancangan acak lengkap dengan 5 perlakuan dan 3 kali ulangan. Data dianalisis menggunakan Analysis of Variance (ANOVA) dan jika berbeda nyata maka dilakukan uji lanjut dengan Duncan's New Multiple Range Test (DNMRT) pada taraf nyata 5%. Perlakuan pada penelitian ini adalah : perlakuan A (bioplastik tanpa penambahan kitosan), perlakuan B (bioplastik dengan penambahan kitosan 2,5%), perlakuan C (bioplastik dengan penambahan kitosan 5%), perlakuan D (bioplastik dengan penambahan kitosan 7,5%), dan perlakuan E (bioplastik dengan penambahan kitosan 10%). Karakteristik bioplastik yang diuji adalah sifat mekanik (kuat tarik dan perpanjangan putus), ketebalan, daya serap uap air, dan uji biodegradasi. Hasil penelitian menunjukkan bahwa penambahan kitosan berpengaruh nyata terhadap sifat mekanik (kuat tarik dan perpanjangan putus), daya serap uap air dan uji biodegradasi, dan tidak berpengaruh nyata terhadap ketebalan bioplastik yang dihasilkan. Dari pengujian karakteristik bioplastik diketahui bahwa penambahan kitosan yang tepat terjadi pada perlakuan penambahan kitosan 10% dengan kuat tarik 25,67 MPa, perpanjangan putus 1,98%, ketebalan 0,078 mm, dan daya serap uap air 0,82%.

**Kata kunci :** bioplastik, karakteristik, kitosan

# **Making and Characteristics of Biodegradable Plastic of Taro's Starch (*Colocasia gigantea* Hook.f) with Addition of Shrimp Waste Chitosan**

**Ases Hermawarni, Alfi Asben, Purnama Dini Hari**

## **ABSTRACT**

This research were aimed to know effect of chitosan addition to the characteristics biodegradable plastic and to know the approve concentration of chitosan in the making of biodegradable plastic. This research used complete randomized design with 5 treatments and 3 repitions. Data was analyzed statistically by using Analisis of Varian (ANOVA) and continued by Duncan's New Multiple Range Test (DNMRT) at 5% significant level. Treatments of this research were A (bioplastic without chitosan addition), B (bioplastic with 2.5% chitosan addition), C (bioplastic with 5% chitosan addition), D (bioplastic with 7.5% chitosan addition), and E (bioplastic with 10% chitosan addition). The characteristics of bioplastic which tasted was mechanical properties (tensile strenght and elongation), thickness, water absorption, and biodegradation test. The result of this research showed that the addition of chitosan were significantly effected to mechanical properties (tensile strength and elongation), water absorption, and biodegradation test, but not significantly effected to thickness of bioplastic. From characteristics testing of bioplastic, could be known that the right addition of chitosan was treatment with 10% chitosan addition which the tensile strength 25.67 MPa, elongation 1.98%, thickness 0.078 mm, and water absorption 0.82%.

**Keywords : bioplastic, characteristics, chitosan**