PENGARUH JENIS REAGEN DAN LAMA PEMANASAN DALAM PEMBENTUKAN KOMPLEKS Zn-KLOROFIL TERHADAP KADAR KLOROFIL DAN WARNA BUBUK SIMPLISIA SAMBILOTO (*Andrographis paniculata*)

INTISARI

Sambiloto (*Andrographis paniculata*) merupakan tanaman dengan kandungan utama *terpenoid* dan *andrographolide*. Namun proses pengeringan pembuatan simplisia mengakibatkan degradasi yang mempengaruhi warna dan klorofil. Untuk mencegah kerusakan komponen dilakukan dengan pembentukan komplek Zn-klorofil melalui perebusan dalam larutan $ZnCl_2$ atau Zn asetat. Tujuan penelitian ini mengevaluasi dan menentukan jenis reagen $ZnCl_2$ dan Zn asetat serta lama pemanasan pembentukan Zn-klorofil yang menghasilkan bubuk simplisia sambiloto yang mempunyai kadar klorofil dan warna hijau yang tinggi. Penelitian dilakukan menggunakan bahan utama simplisia sambiloto. Daun simplisia sambiloto disortasi, ditimbang, digiling, direbus dalam larutan Zn^{2+} 500 ppm ($ZnCl_2$ atau Zn asetat; selama 0, 5, 10, dan 15 menit), dikeringkan dan dihaluskan. Rancangan percobaan yang digunakan adalah RAL, data dianalisis dengan anova dan jika signifikan dilanjutkan dengan uji DMRT. Bubuk simplisia sambiloto yang dihasilkan dianalisis kadar air, kadar klorofil, kadar karotenoid, kadar abu, serta warnanya. Hasil penelitian menunjukkan jenis reagen $ZnCl_2$ dan Zn asetat serta lama pemanasan berpengaruh nyata terhadap kadar air, kadar klorofil, kadar karotenoid, kadar abu, dan warna bubuk simplisia sambiloto. Semakin lama pemanasan dengan reagen Zn asetat maka nilai klorofil dan intensitsas warna hijau bubuk simplisia sambiloto semakin tinggi sedangkan pada $ZnCl_2$ nilai klorofil dan warna menurun. Jenis reagen dan lama pemanasan yang menghasilkan bubuk simplisia sambiloto yang mempunyai kadar klorofil dan intensitas warna hijau yang tinggi adalah reagen Zn asetat dengan lama pemanasan 15 menit dengan karakteristik kadar klorofil a 172,46 mg/100g, klorofil b 109,50 mg/100g, klorofil total 280,18 mg/100g dan intensitas warna hijau adalah warna a -3,71.

Kata kunci: Kompleks Zn-klorofil, simplisia sambiloto, $ZnCl_2$, Zn asetat, klorofil, dan warna.

THE EFFECT OF REAGENT TYPES AND HEATING TIME IN FORMATION OF Zn-CHLOROPHYLL COMPLEX ON CHLOROPHYLL CONTENT AND COLOUR OF SIMPLICIA SAMBILOTO (Andrographis paniculata) POWDER

ABSTRACT

Sambiloto (*Andrographis paniculata*) is a plant with the main content of terpenoids and andrographolide. However, the drying process of making simplicia results in degradation which affects the color and chlorophyll. To prevent damaged components, the formation of a Zn-chlorophyll complex is carried out by boiling in a solution of $ZnCl_2$ and Zn acetate. The purpose of this study was to evaluate and determine the type of reagent as well as the reaction time for the formation of Zn-chlorophyll which resulted in sambiloto simplicia powder with the high chlorophyll content and green color. The research was conducted using the main ingredient of simplicia sambiloto. The simplicia sambiloto leaves were sorted, weighed, ground, boiled in 500 ppm Zn^{2+} solution ($ZnCl_2$ or Zn acetate; for 0, 5, 10, and 15 minutes), dried and crushed. The experimental design used was RAL. The data were analyzed by ANOVA and if it was significant, it would be continued with the DMRT test. The resulting simplicia sambiloto powder was analyzed for water content, chlorophyll content, carotenoid content, ash content, and color. The results showed that the type of reagents $ZnCl_2$ and Zn acetate and reaction time significantly affected the water content, chlorophyll content, carotenoid content, ash content, and color of the simplicia sambiloto powder. The longer the Zn acetate reaction, the higher the chlorophyll value and the intensity of the green color of sambiloto powder while in $ZnCl_2$ the chlorophyll value and color decreased. The type of reagent and reaction time that produced sambiloto simplicia powder with the high chlorophyll content and high green color intensity was Zn acetate reagent with a reaction time of 15 minutes with the characteristics of chlorophyll a 172.46 mg/100g, chlorophyll b 109.50 mg/100g, total chlorophyll was 280.18 mg/100g and the intensity of the green color was color a -3.71.

Keywords: Zn-chlorophyll complex, simplicia sambiloto, $ZnCl_2$, Zn acetate, chlorophyll, and color.