PEMANFAATAN EKSTRAK ETANOL 70% DAUN KASTUBA *(Euphorbia pulcherrima)* SEBAGAI INDIKATOR ALAMI TITRASI ASAM BASA

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Daun Kastuba *(Euphorbia pulcherrima)* merupakan salah satu tanaman yang memiliki kandungan pigmen pewarna alami antosianin yang dapat digunakan sebagai indikator alami titrasi asam basa, antosinain memiliki karakteristik yang dapat berubah pada pH tertentu sehingga dapat menentukan sifat asam dan basanya suatu larutan pada saat titrasi. Tujuan Penelitian ini dilakukan untuk mengetahui kemanfaatan ekstrak etanol 70% Daun Kastuba *(Euphorbia pulcherrima)* sebagai indikator alami titrasi asam basa. Daun Kastuba *(Euphorbia pulcherrima)* diperoleh dengan metode maserasi, hasil ekstrak digunakan untuk identifkasi kualitatif antosianin dengan penambahan NaOH 2M dan hasil perubahan warna hijau kebiruan untuk dan merah dan hijau tua untuk daun hijau, sementara pengujian larutan asam basa lemah dan kuat pada daun merah diberi asam berwarna merah dan basa hijau kekuninngan serta daun hijau pada asam berwarna *orange* dan basa hijau kekuningan. Pengujian warna dengan larutan *buffer* daun kastuba (Euphorbia pulcherrima) merah dapat berubah warna pada berbagai pH dengan hasil pH pH 1-3 (merah), pH 4-6 (merah keunguan), pH 7 (ungu), pH 8 (hijau kekuningan), pH 9-10 (kuning) dan kandungan senyawa turunan antosianin atau pelargonidin pada daun kastuba (Euphorbia pulcherrima) hijau dapat berubah warna sesuai kondisi pH dengan hasil pada pH 1-2 (orange), pH 3-6 (hijau pucat), pH 7-8 (hijau), pH 9-10 (kuning kehijauan). Hasil penelitian melalui perolehan rata-rata titran memalui uji titrasi basa lemah-asam kuat untuk baku pembanding (*methyl orange*) sebanyak 36,03 ml, daun hijau 35,87 ml dan merah 36,17 ml. Perolehan rata-rata titran uji titrasi asam kuat – basa lemah untuk baku pembanding (*fenolftalein)* 22,37 ml, daun hijau 22,50 ml dan daun merah 22,63 ml. Perolehan rata-rata titran uji titrasi basa kuat – asam kuat untuk baku pembanding *(fenolftalein)* 25,83 ml, daun hijau 25,80 ml, dan daun merah 25,40 ml. Disimpulkan bahwa ekstrak etanol 70% Daun Kastuba *(Euphorbia pulcherrima)* dapat digunakan sebagai indikator alami titrasi asam basa pengganti indikator *methyl orange* dan *fenolftalein.*

Kata Kunci : Daun Kastuba *(Euphorbia pulcherrima),* antosianin, indikator, titrasi asam basa.

UTILIZATION OF 70% ETHANOL EXTRACT OF POINSETTIA LEAF (Euphorbia pulcherrima) AS A NATURAL INDICATOR OF ACID-BASE TITRATION

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Poinsettia leaf (Euphorbia pulcherrima) is a plant that contains anthocyanin natural coloring pigments that could be used as natural indicators for acid-base titrations, anthocyanins have characteristics that could change at a certain pH so that they could determine the acidity and alkalinity of a solution during titration. The purpose of this study was to determine the benefits of 70% ethanol extract of Poinsettia Leaf (Euphorbia pulcherrima) as a natural indicator for acid-base titration. Poinsettia leaves (Euphorbia pulcherrima) were obtained by maceration, the extract results were used for qualitative identification of anthocyanins with the addition of 2M NaOH and the results of tested were obtained by changes the color were bluish green for red and dark green for green leaves, while tested weak and strong acid base solutions on red leaves was given the acid is red and the base is yellowish green and the green leaves were orange and the base is yellowish green. Color tested with a buffer solution of red poinsettia (Euphorbia pulcherrima) leaves could change color at various pH with the results of pH 1-3 (red), pH 4-6 (purple red), pH 7 (purple), pH 8 (yellowish green), pH 9-10 (yellow) and the content of anthocyanin derivatives or pelargonidin in green poinsettia (Euphorbia pulcherrima) leaves could change color according to pH conditions with results at pH 1-2 (orange), pH 3-6 (pale green), pH 7-8 (green), pH 9-10 (greenish yellow). the results by this study obtained from the average titrant with a strong acid weak base titration test, the result for methyl orange were 36.03 ml, green leaves 35.87 ml and red 36.17 ml. the average yield of titrant of strong acid strong base titration test for fenolftalein were 22.37 ml, green leaves 22.50 ml and red leaves 22.63 ml. the average yield of titrant of strong base weak acid titration test for fenolftalein were 25.83 ml, green leaves 25.80 ml and red leaves 25.40 ml. It was concluded that the ethanol extract 70% Kastuba Leaf (Euphorbia pulcherrima) could be used as a natural indicator for acid-base titrations instead of methyl orange and phenolphthalein indicators.

Key word : *poinsettia leaf (Euphorbia pulcherrima), anthocyanin, indicator, acid base titration*