ABSTRACT

THE INHIBITION OF ALPHA-GLUCOSIDASE ACTIVITY USING ACIDIC EXTRACT OF PURPLE SWEET POTATO AND PROCESSED PRODUCTS ANTHOCYANIN

By

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Diabetes Melitus type II is a disorder of the insulin system due to the onset of insulin resistance characterized by hiperglycemia. One effort to decrease blood glucose levels in the people suffer from diabetic is to use alpha-glucosidase enzyme inhibitor. Purple sweet potato is one of potential plant materials which could be used as an anti diabetic medicine. The purpose of this research was to find out the capabilities of the anthocyanin extract from processed products of purple sweet potato in inhibiting the activity of alpha-glucosidase enzyme. The inhibition test of alpha glukosidase enzyme activity was carried out in vitro using spectrophotometry method. The results showed inhibition of alpha-glucosidase enzyme activity by anthocyanin extracted using acid solution on the treatment of resistant starch rich-purple sweet potato (TP) of 65,59% , puple sweet potato chips (KU) of 44,73%, fresh purple sweet potato (US) of 41,73%,

pre-heated purple sweet potato flour (TG) of 39,91%, and purple sweet potato flour (TU) of 37,61%.

Key words: *alpha-glucosidase, anthocyanin, diabetes melitus, purple sweet potato*.

ABSTRAK

UJI PENGHAMBATAN AKTIVITAS ALFA-GLUKOSIDASE MENGGUNAKAN ANTOSIANIN UBI JALAR UNGU DAN PRODUK OLAHANNYA YANG DIEKSTRAK MENGGUNAKAN LARUTAN ASAM

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Diabetes Melitus tipe II merupakan kelainan sistem insulin akibat terjadinya resistensi insulin yang ditandai dengan hiperglikemia. Salah satu mekanisme menurunkan kadar gula darah pada penderita diabetes adalah dengan penggunaan obat golongan penghambat enzim alfa-glukosidase. Ubi jalar ungu merupakan salah satu bahan tanaman yang berpotensi sebagai obat antidiabetes. Penelitan ini bertujuan untuk mengetahui kemampuan ekstrak antosianin dari ubi jalar ungu dan produk olahannya dalam menghambat aktivitas enzim alfa-glukosidase. Pengujian penghambatan aktivitas enzim alfa-glukosidase dilakukan secara *in vitro* dengan menggunakan metode spektrofotometri. Hasil penelitian menunjukkan penghambatan aktivitas enzim alfa-glukosidase oleh antosianin yang diekstrak menggunakan larutan asam pada perlakuan tepung ubi jalar ungu kaya pati resisten (TP) sebesar 65,59%, keripik ubi jalar ungu (KU) sebesar

44,73%, ubi jalar ungu segar (US) sebesar 41,73%, tepung ubi jalar ungu tergelatinisasi parsial (TG) sebesar 39,91%, dan tepung ubi jalar (TU) sebesar 37,61%.

Kata kunci : *alfa-glukosidase, antosianin, diabetes melitus, ubi jalar ungu*