

INTISARI

Buah nanas (*Ananas comosus* (L.) Merr.) memiliki kandungan enzim bromelain. Bromelain merupakan salah satu enzim protease yang bisa digunakan dalam perawatan luka yang berhubungan dengan radikal bebas. Antioksidan merupakan senyawa yang dapat menghambat reaksi radikal bebas dalam tubuh. Penelitian ini bertujuan untuk menetapkan kadar enzim dan menguji aktivitas antioksidan ekstrak bromelain daging buah nanas.

Identifikasi enzim ditentukan secara kualitatif dengan metode uji warna ninhidrin yang memiliki prinsip pembentukan warna biru-ungu dari reaksi antara ninhidrin dan asam amino, dan secara kuantitatif dengan metode spektrofotometri ultraviolet dan baku standar berupa *bovine serum albumine* (BSA) yang memiliki prinsip pengukuran absorbansi dari cincin aromatik yang dimiliki oleh enzim. Aktivitas antioksidan ditentukan dengan metode DPPH yang memiliki prinsip penurunan intensitas absorbansi DPPH yang sebanding dengan kenaikan konsentrasi senyawa antioksidan yang dinyatakan dalam IC_{50} (*Inhibition Concentration 50*).

Penelitian menunjukkan bahwa kadar enzim ekstrak bromelain buah nanas sebesar $8,4967 \pm 0,0289$ % b/b dan aktivitas antioksidan ekstrak bromelain buah nanas dengan nilai IC_{50} sebesar $4,7221 \pm 0,0287$ mg/mL.

Kata kunci: enzim, bromelain, *Ananas comosus* (L.) Merr., aktivitas antioksidan, DPPH, IC_{50} .

ABSTRACT

Pineapple fruits (*Ananas comosus* (L.) Merr.) contain bromelain enzyme. Bromelain is one of proteases that have been used for wound treatment which associated with free radical. Antioxidant is a compound that can inhibit the reaction of free radicals within the body. The aims of this study are to determine enzyme content and antioxidant activity of bromelain extracted from pineapple fruit.

Enzyme identification was determined qualitatively using ninhydrin, in which it's principle is a production of Ruhemann's purple from the reaction between ninhydrin and amino acids. UV spectrophotometric method was applied to determine the enzyme content based on bovine serum albumine (BSA) as the reference. The principle of this method is according to the aromatic ring of enzyme's absorbance measurement. Antioxidant activity was determined using DPPH radical scavenging method based on the principle that the DPPH absorbance intensity is decreasing proportionally with the increasing of the compound's concentration. Antioxidant activity was expressed as IC_{50} (Inhibition Concentration 50).

Research demonstrated that the enzyme content of the pineapple fruit bromelain extract is $8,4967 \pm 0,0289$ % b/b and it's antioxidant activity with the IC_{50} value is $4,7221 \pm 0,0287$ mg/mL.

Keywords: enzyme, bromelain, *Ananas comosus* (L.) Merr., antioxidant activity, DPPH, IC_{50} , total protein content.