PERUBAHAN AKTIVITAS DAN SENYAWA ANTIOKSIDAN PETAI CINA (*Leucaena leucocephala* L.) SELAMA PERLAKUAN *STEAM BLANCHING*

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INTISARI

Petai cina umumnya dikonsumsi dengan cara dikukus terlebih dahulu *(steam)*. Proses pemanasan ini dapat mempengaruhi senyawa antioksidan. Penelitian ini bertujuan untuk mengetahui perubahan aktivitas antioksidan, total fenolik, dan kandungan flavonoid biji petai cina (*Leucaena leucocephala* L.) selama perlakuan *steam blanching*, serta mengetahui senyawa fenolik yang terkandung dalam biji petai cina selama *steam blanching.* Biji petai cina di *blanching* selama 0, 5, 7, dan 9 menit, kemudian dilakukan analisa potensi antioksidan dan identifikasi secara tentatif senyawa fenolik dalam ekstrak (menggunakan *LC MS/MS*).

Berdasarkan penelitian yang telah dilakukan, aktivitas antioksidan, total fenolik, dan kandungan total flavonoid (quercetin) ekstrak petai cina *steam* menunjukkan peningkatan dibandingkan ekstrak segar. Nilai % RSA pada menit ke – 60 segar sebesar 8,30 %, *steam* 5 menit 46,66%, *steam* 7 menit 15,72%, dan *steam* 9 menit 27,81%. Total fenolik dalam 100 g ekstrak segar yakni 8,77 ± 0,15 g GAE, 12,39 ± 0,04 g GAE (*steam* 5 menit), 9,76 ± 0,04 g GAE (*steam* 7 menit), dan 11,59 ± 0,02 g GAE (*steam* 9 menit). Hasil kuantifikasi flavonoid (quercetin) terbanyak berturut-turut yaitu 165,90 µg/g (*steam* 5 menit), 144,41 µg/g (*steam* 9 menit), 93,58 µg/g (*steam* 7 menit), dan 45,20 µg/g (*unsteamed* (segar)). Terdapat tujuh senyawa fenolik yang teridentifikasi secara tentatif dari ekstrak petai cina segar dan *steam*, yaitu 4 dari kelompok senyawa flavonol (Quercetin, Kaempferol-3-O-glucuronide, Quercetin 3-O-Rhamnosida, dan Quercetin 3-O-Galaktosida (Hyperosida)), 1 dari kelompok flavon (Luteolin 6-metil ether (Neptein)), 1 dari senyawa flavan-3-Ol (Katekin dan Epikatekin), dan 1 senyawa asam fenolat.

Kata kunci : Petai cina, *steam blanching,* aktivitas antioksidan, total fenolik, *LC – MS/MS*

THE CHANGES OF ACTIVITY AND ANTIOXIDANT COMPOUNDS OF PETAI CINA (*Leucaena leucocephala* L.) DURING STEAM BLANCHING TREATMENT

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ABSTRACT

Petai cina is commonly consumed by steaming first. This heating process can affect that antioxidant compounds. This study aims to determine changes in antioxidant activity, total phenolic, and flavonoid content of petai cina seed (*Leucaena leucocephala* L.) during the steam blanching treatment, and to know the phenolic compounds contained in petai cina seeds during steam blanching. Petai cina seeds was blanched for 0, 5, 7, and 9 minutes, then its antioxidant potential and identification of phenolic compounds tentatively in the extract (using LC MS / MS) was analyzed.

Based on the research, the antioxidant activity, total phenolic, and total flavonoid content (quercetin) of steamed petai cina extract showed an increase compared to fresh extract. Value of RSA in the 60th minute fresh by 8.30%, steam 5 minutes 46.66%, steam 7 minutes 15.72%, and steam 9 minutes 27.81%. Total phenolics in 100 g of fresh extract were 8.77 ± 0.15 g GAE, 12.39 ± 0.04 g GAE (steam 5 min), 9.76 ± 0.04 g GAE (steam 7 min), and 11, 59 ± 0.02 g GAE (9 min steam). The highest quantities of flavonoids (quercetin) were 165.90 μg/g (steam 5 min), 144.41 μg/g (steam 9 min), 93.58 μg/g (steam 7 min) and 45,20 μg/g (fresh). There are seven phenolic compounds of fresh petai cina and steam extracts that indentificated tentatively, ie 4 from the flavonol compounds group (Quercetin, Kaempferol-3-O-glucuronide, Quercetin 3-O-Rhamnosida, and Quercetin 3-O-Galactoside (Hyperosida)), 1 from the flavone group (Luteolin 6-methyl ether (Neptein)), 1 from the flavan-3-Ol (Catechin and Epicatechin) compounds, and 1 phenolic acid compound.

Keywords: Petai cina, *steam blanching*, antioxidant activity, total phenolic, *LC – MS/MS*