

ABSTRACT

A COMPARISON OF DPPH AND MODIFIED FRAP METHODS FOR DETERMINATION OF TOTAL ANTIOXIDANT CONTENT OF POTATO, BEET AND BENGKOANG

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Study of comparison methods on determination of total antioxidant content using DPPH and modified FRAP methods on bengkoang, beet and potato had been done. This study proved that both of methods can be used to determine of total antioxidant content on bengkoang, beet and potato that calculated as ascorbic acid using validation. Total antioxidant content of bengkoang, potato and beet used DPPH and modified FRAP methods respectively (0,7650 ; 0,6491 ; 0,0999) mg/g and (0,2547 ; 0,0963 ; 1,0523) mg/g. Statistical parameters for validation include are, precision, correlation coefficient LoD and LoQ, % recovery and Horwitz ratio. Statistical parameters obtained for DPPH and modified FRAP methods of beet, potato and bengkoang respectively SDR (2,39 ; 0,42 ; 2,31)% and (0,63 ; 2,12 ; 1,80)%, $r = -0,9905$ and $0,9896$, LoD 1,41 mg/L and 1,46 mg/L, LoQ 4,71 mg/L and 4,89 mg/L, % recovery (110,37 ; 106,71 ; 92,43) % and (108,41 ; 107,71 ; 96,523) % , HORRAT ratio (1,58; 0,29 ; 2,00) and (0,39 ; 1,92 ; 1,41). For analysis of comparison method by F-test and t-test on potato, beet and bengkoang showed same precision with different average significantly for both of methods.

Keywords: *antioxidants, validation methods, DPPH, FRAP, FRAP modification*