2. ABSTRACT

The sequential injection-spectrophotometry was developed for the determination of antioxidant capacity. Ascorbic acid and gallic acid were used as standard substances. An antioxidant was reacted with DPPH at a mixing chamber used as a reactor and detecting cell. The calibration curve could be constructed by using a single standard solution. The suitable conditions for antioxidant capacity analysis were studied. It was found that proper concentration of DPPH was 0.04 mM, aspirating flow rate was 50 □l/sec, the concentration of ascorbic acid and gallic acid were 0.1 mM and 0.5 mM, respectively. The aspiration sequence and the effect of solvent for standard desolation also were studied. The linear calibration for ascorbic acid and gallic acid were 0.0033 – 0.013 mM and 0.01-0.10 mM, respectively. The developed system was applied to determine total antioxidant in commercial fruit juice samples and plant extracts. The antioxidant capacity in samples obtained from the new SI system and batch method were not significant different at 95 % confidence level. The developed system could reduce time analysis and lease reagent consumption. It also could be used as an alternative method for antioxidant capacity analysis.