ABSTRAK

Telah dilakukan penetapan kadar antimoni pada tiga merek minuman sari buah dalam kemasan polietilen tereftalat. Penetapan kadar dilakukan dengan metode spektrofotometri UV-Sinar Tampak menggunakan pereaksi Kalium Iodida. Metode ini didasarkan pada pembentukan asam iodoantimonat yang bewarna kuning apabila antimoni (SbIII) dalam larutan asam sulfat direaksikan dengan larutan kalium iodida berlebih. Hasil penelitian menunjukkan bahwa kadar antimoni dalam minuman sari buah kemasan yang ditempatkan pada suhu kamar (20-25 ºC), 60 ºC dan 80 ºC selama 5 jam, melebihi batas maksimum yang diperbolehkan oleh Menteri Kesehatan RI yaitu, 0,02 µg/mL. Kadar antimoni yang terdapat dalam minuman sari buah kemasan pada suhu kamar (20-25 °C) pada sampel A, B dan C masing-masing 5,37; 5,45; dan 2,26 µg/mL, pada suhu 60 °C masing-masing 11,66; 12,11; dan 4,39 µg/mL dan suhu 80 °C masing-masing 4,16; 5,07; dan 16,51 µg/mL. Validasi metoda yang digunakan pada penelitian ini menunjukkan nilai akurasi dari persentase perolehan kembali terhadap tiga konsentrasi standar yang berbeda yaitu 92,90%, 88,29% dan 85,00%; %RSD dari uji presisi *intraday* masing-masing 3,19%; 1,16%; dan 0,70% dan %RSD dari uji presisi *interday* masing-masing 3,87%; 5,65%; dan 2,13%; r = 0,993; batas deteksi (LOD) 1,564 µg/mL dan batas kuantitasi (LOQ) 5,214 µg/mL.

ABSTRACT

Antimony assay had been conducted on three brands of fruit juice in packaging of polyethylene terephthalate. The assay used spectrophotometry UV-Visible and a reagent Potassium Iodide. This method was based on the formation of the yellow color of iodoantimonat acid which Sb (III) in sulfuric acid solution reacted with excess potassium iodide solution. The results showed that antimony content in fruit juice beverage packaging that is placed at room temperature (20-25 °C), 60 ºC and 80 ºC for 5 hours more than maximum limit that is allowed by Health Minister of Indonesian Republic is 0.02 µg/mL. Antimony content found in fruit juice beverage packaging at room temperature (20-25 °C) in the sample A, B and C were 5.37; 5.45; and 2.26 µg/mL respectively, at 60 °C were 11.66; 12.11; and 4.39 µg/mL respectively and 80 °C were 4.16; 5.07; and 16.51 µg/mL respectively. The method of validation used in this research showed the value of the accuracy of the percentage of recovery against three different standard concentrations were 92.90%, 88.29% and 85.00% respectively; %RSD of precision test intraday were 3.19%; 1.16%; and 0.70% respectively and %RSD of precision test interday were 3.87%; 5.65%; and 2.13% respectively; r = 0.993; the limit of detection (LOD) 1.564 µg/mL and the limit of quantitation (LOQ) 5.214 µg/mL.