Quantitative Determination of Cyanide in Foods by Spectrophotometry using Picric Acid Test Strips
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Abstract

A spectrophotometric method was improved for determination of cyanide in foods using picric acid test strips. Cyanide in a food sample reacted with acid to produce hydrocyanic acid (HCN). The HCN vapors reacted with the picric acid and formed red color on a test strip. The red colored compound was extracted with 50% aqueous ethanol solution. The extract was measured absorbance at 500 nm. A linear relationship was obtained between the range of 1-15 µg CN. The recoveries of cyanide from various foods fortified at the level of 0.5 and 5.0 µg CN/g were 68.3-98.4% and 73.1-99.7%, respectively. The limit of determination in actual sample was 0.5-1.0 µg CN. The method was successfully applied to quantitative determination of cyanide in bean paste, beans, health foods, and grain. This method is simple and useful for the routine analysis of cyanide in foods.

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