

Title Stability of 5-methyltetrahydrofolate in frozen fresh fruits and vegetables  
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### **Abstract**

The stability of 5-methyltetrahydrofolate (5MTHF) in homogenized fresh fruits and vegetables representing samples for the USDA National Food and Nutrient Analysis Program was evaluated. Samples were homogenized in liquid nitrogen and 5MTHF was measured after 0, 2, 7, 30 days and then at 3-month intervals for a total of 12 months storage at  $-60 \pm 5$  °C, utilizing extraction by a tri-enzyme treatment, purification by strong anion-exchange solid-phase extraction, and quantification by reverse-phase HPLC. Method validation included analysis of a reference material and interlaboratory analysis of selected samples by HPLC and LC-MS. A canned spinach composite was assayed in each analytical batch to monitor inter-assay precision.

No change in 5MTHF content was detected in any of the samples after 12 months. Concentrations ranged from  $<10$  µg/100 g in bananas to  $>100$ µg/100 g in spinach. Relative standard deviations were generally  $<7\%$  within assay and  $<11\%$  between assays.