

Assessment of total vitamin D intake from foods and dietary supplements (DSs) may be incomplete if 25-hydroxyvitamin D [25(OH)D] intake is not included. However, 25(OH)D data for such intake assessments are lacking, no food or DS reference materials (RMs) are available, and comparison of laboratory performance has been needed. The primary goal of this study was to evaluate whether vitamin D3 and 25(OH)D3 concentrations in food and DS materials could be measured with acceptable reproducibility. Five experienced laboratories from the United States and other countries participated, all using liquid chromatography tandem-mass spectrometry but no common analytical protocol; however, various methods were used for determining vitamin D3 in the DS. Five animal-based materials (including three commercially available RMs) and one DS were analyzed. Reproducibility results for the materials were acceptable. Thus, it is possible to obtain consistent results among experienced laboratories for vitamin D3 and 25(OH)D3 in foods and a DS.