Abstract
Evidence to suggest an association of dietary flavonoids and reduction in cancer risk is consistent (Neuhouser, 2004). Flavonoids have also been associated with reduction in the risk of cardiovascular diseases (Huxley and Havel, 1999). Antioxidant mechanisms include free radical chain breaking, metal chelation, singlet oxygen quenching, and singlet oxygen quenching (Yao, et al 2004). Flavonoids have also been associated with reduction in the risk of cardiovascular diseases (Huxley and Havel, 1999).

Methods
Sampling plan and sample handling
In cooperation with the Produce for Better Health Foundation, a program was developed for the analysis of 59 fruits, nuts and vegetables. A total of 26 flavonoid compounds from five subclasses of monomeric flavonoids were analyzed using the USDA Flavonoid Method. Samples were collected in two different seasons from retail outlets in 12 cities around the United States. The first sampling period (October 1999) was observed in the Food Analysis Laboratory Control Center (FALCC) at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. The second sampling period (May 2000) was according to protocols developed by FALCC and NDL. Tomatoes, potatoes, broccoli, and cranberries were analyzed using the FCL method with additional steps, as noted in Table 2. A kinetics method was developed by Merken, et al (2001) Food Composition Laboratory (FCL) to analyze anthocyanins. A kinetics method was developed by Merken, et al (2001) Food Composition Laboratory (FCL) to analyze anthocyanins. The most significant finding from national sampling was the high degree of variability, an average RSD of 116% for composed samples or 19% for individual samples. These data will be incorporated into the revised database provided on NDL’s website.