

Abstract

Fruit and vegetables are a rich source of flavonoid antioxidants. These compounds are continuing to attract strong research interest because of their association with the promotion of good health and protection against certain disease conditions (including 'metabolic syndrome'). Individual flavonoid antioxidants vary in their bioavailability and bioefficacy, as measured in a range of bioassay. Given this background, we are measuring flavonoid profiles in a range of vegetable and fruit species and monitoring how the profiles change during post-harvest storage. In this paper we present data from highly perishable vegetables (asparagus, broccoli, and watercress) and lime fruit. We have determined the impact of 'good' and 'bad' post-harvest storage regimes on their phytochemical composition. Samples have been taken before and after simulated air- or sea- freight and shelf life. Effects of post-harvest treatments such as controlled atmosphere storage, hot water dipping and modified-humidity packaging are being monitored in this programme. We are moving beyond monitoring significant changes in individual compounds towards principal components analysis as an approach to non-targeted recognition of patterns of compositional change that can be applied to the detection of health-related synergies between compounds.