

Abstract

Fruit and vegetables are a rich source of phytochemicals believed to be associated with the promotion of good health and protection against certain disease conditions (including 'metabolic syndrome'). Within each class of phytochemicals, compounds vary in their bioavailability and bioefficacy, as measured in a range of bioassays. As part of a collaborative research programme entitled 'Vital Vegetables', we are measuring phytochemical profiles in a range of vegetable and fruit species and monitoring how the profiles change during post-harvest storage. Two major groups of phytochemicals on which we focus are glucosinolates and flavonoid antioxidants. In this paper we present examples of how the post-harvest environment modifies phytochemical profiles in some highly perishable vegetables including asparagus, broccoli and watercress, and lime fruit. We have determined the impact of 'good' and 'bad' post-harvest storage regimes on their glucosinolate and flavonoids composition. Analysis of the effects of post-harvest treatments such as controlled atmosphere storage, hot water dipping and modified-humidity packaging allows generic information to emerge about storage regimes that will retain functional attributes of fresh produce, rather than just their appearance.