

Abstract

The parameters for maintaining visual and nutritional quality in fruits and vegetables after harvest are well understood, with low temperature maintenance being of paramount importance. Recently, much attention has been focused on the phytochemicals contained within fruits and vegetables that may help prevent the onset of certain cancers and cardiovascular disease. At this early stage in our knowledge of the bioefficacy of phytochemicals, it appears the most important are flavonoids, including anthocyanins and flavonols, carotenoids, including lycopene, and sulphur-containing compounds such as glucosinolates and cysteine sulphoxides. Relatively little is known, however, of the effects of commonly used postharvest handling procedures designed to maintain quality, such as temperature, relative humidity, storage under CA or MAP and processing on phytochemical content. This review looks at the effect of postharvest conditions on these three classes of phytochemicals. In addition, the significant, and sometimes neglected effects of bioavailability are considered. In most cases, integrity caused a decline in phytochemical content, but there are important exceptions, where processing and/or cooking increased the availability of phytochemicals.