Abstract:

Vegetable quality is a combination of characteristics, attributes and properties that give value to the commodity for human food. Many preharvest and postharvest factors such as genetic material, agroecological conditions, production technology, physiological stage at harvest, postharvest technology and the interaction among them affect vegetable composition and general quality of the product. Information about the influence of preharvest and postharvest factors on vegetable quality is an important issue for improving crop management and packaging techniques for fresh products. The aim of this research was: i) to study different crop management factors affecting lettuce quality and ii) to evaluate postharvest strategies to preserve minimally processed leafy vegetable quality along the marketing chain. Preharvest conditions such as plant population and nitrogen availability in soil of a leafy lettuce crop grown in Spring, and the effect of radiation and its interaction with N fertilization on growth patterns, yield and nitrate accumulation in upper biomass of a leafy lettuce crop grown in Winter were studied. Enzymatic browning on the lettuce-butts is one of the main changes in lettuce during postharvest due to the cutting practised to plants at harvest. Controlled atmosphere and chemical treatments were used to prevent enzymatic browning on crisphead and butterhead lettuce butts. The effect of processing degree and ascorbic acid concentration changes on the quality of different lettuce types during storage were studied. Minimally processed lettuce quality was related to the processing technique and the lettuce type. Enzymatic browning is one of the main causes of organoleptic quality loss during processing and storage of minimally processed lettuce. The effect of selected organic acids solutions as chemical inhibitors for enzymatic browning and the evaluation of the suitability of a range of polymeric films for modified atmosphere packaging on different lettuce types minimally processed during the storage period were studied.