

Abstract:

For developing a quality chain management of horticultural products radish bulbs and pepino fruits were chosen as model products. In a first attempt the interaction of some of the most important preharvest influences, the climate effect and the ripening stage at harvest, and different postharvest effects, such as packaging, coatings, CA storage were investigated in respect to the product's precondition at harvest. The investigations of radish indicated that the preharvest dependency of quality determining compounds ranged from a slight climate influence, over a moderate climate effect up to a strongly distinctive climate influence and also effect postharvest behavior. Moreover, it is demonstrated that the quality preserving effect of packaging materials and coatings depends on the precondition of radishes being influenced by the seasonal preharvest conditions. Considering sensory and anticarcinogenic aspects, OPP-Coex-film packaging might be recommended due to a beneficial effect on pectic substances and alkenyl glucosinolates in radish grown in summer and autumn. However, starch coated radishes showed highest contents of fructose and glucose. Depending on the ripening stage different postharvest treatments were beneficial in preserving pepino quality. In mature pepino fruits packaging and coating resulted in the maintenance of the sensory, antioxidative and anticarcinogenic potentials, while ripe pepino fruits maintained their quality at 5 °C storage temperature. Enhanced CO₂ concentrations up to 20% led tendentially to a reduction of bioactive pigments. Concluding from these investigations the development of a chain management implies the consideration of the product's precondition at harvest as a result of external and internal influences on the product metabolism for choosing suitable, quality maintaining postharvest treatments.