Abstract:

The globe artichoke heads [Cynara cardunculus L. subsp. scolymus (L.) Hegi] is a typical vegetable consumed in the Mediterranean countries. Artichoke phenolic content and the polyphenoloxidase (PPO) activity are the main responsible of the head tissue browning phenomena, especially when harvest and storage damages happen. In literature, few information about the genetic influence on the browning process during cold storage in globe artichoke head tissues are reported. The aim of this paper was to evaluate the browning process in different genotypes of globe artichoke during the cold storage. During the year 1996/97, at Syracuse, two early genotypes and two late ones of globe artichoke were grown. Representative samples of heads at harvest and after ten and twenty days of cold storage (4°C) were longitudinally cut on the middle part of the receptacle. Immediately after the cut and then with 5 seconds intervals until two minutes, the tristimulus values (CIE, 1976) L* (light/dark spectrum range), on a 8 mm i.d. surface of the cutted receptacle, were measured by Minolta 'CR 300' colorimeter. Observed receptacle's areas, as reported in previous experiments (Raccuia and Melilli, 2003), present homogeneous browning behaviours. The obtained results showed that the browning kinetic remained unvaried at harvest and after 10 and 20 days of cold storage for the early genotypes, while, for one late genotype, the rate of colour change resulted influenced by the duration of the storage. These results demonstrated the existence of variability in relation to browning phenomena in the different adapted genotypes.