

### Abstract:

The potential of 15 cultivars of mandarins to be used as lightly processed fruit in the form of peeled sections was evaluated. Fruit were picked at

different stages of maturity and the following analysis and subjective evaluations were carried out: chemical analysis of the juice (pH, total soluble solids, titratable acidity, vitamin C); peel thickness, peelability, presence of albedo covering the endocarp after peeling, separability of the segments, thickness of the membranes of the segments, integrity of the segments after separation, endogenous gas composition and respiratory activity at different picking time and before and after peeling. The picking period influenced significantly the peel ability and the separation of the segments, especially in those cultivars (Page, Nova, Carvalhal), which have a thick rind strongly adherent to the endocarp. "Miho", "Okitsu" and "Miyagawa" satsumas, "Ponkan" mandarin, "Comune", "Oroval", "Nules" and "Tardivo" clementines and "Minneola" tangelos exhibited a very high aptitude to be prepared as sections. All of them opposed low resistance to peeling and segments separation was achieved without altering the integrity of the membranes. In particular, all clementines and "Minneola" tangelo when harvested at an advanced stage of maturity presented the rind completely detached from the endocarp and separation of the segments was attained while peeling.

At each picking date all cultivars presented appreciable chemical attributes and good taste, with the exception of "Minneola", which for the high level of organic acid were considered eatable only from March on. Respiration activity decreased in all cultivars with maturity, in contrast endogenous CO<sub>2</sub> partial pressure and C<sub>2</sub>H<sub>4</sub> concentration increased. The rate of respiratory activity was correlated positively with damages reported by the tissue during peeling, segments separation and juice content. In general the cultivars which could be easily peeled and were less juicy showed the best aptitude for processing in the form of segments.