

**SII-P-2****CHARACTERIZATION OF THE CAROTENOID ACCUMULATION IN DIFFERENT HYBRIDS FROM THE URUGUAYAN CITRUS BREEDING PROGRAM**

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*Citrus* family (*Rutaceae*) is a very complex and diverse source of carotenoids. Carotenoid profile and content varies greatly among different species, varieties and even fruit tissues (e.g. flavedo and juice sacs). In Uruguay, the Citrus Breeding Program is focused on obtaining good quality seedless mandarin varieties for fresh market. One of the strategies to improve the nutritional value of citrus, is to increase the accumulation of antioxidant compounds in the fruit pulp. In order to characterize the mechanisms of carotenoid accumulation, we analyzed the carotenoid content in the pulp of five mandarin hybrids through their maturation cycle during the year 2017. Additionally, we analyzed the mRNA expression patterns of key enzymes (PSY,  $\beta$ LCY1,  $\beta$ LCY2,  $\epsilon$ LCY,  $\beta$ CHX) of the carotenoid biosynthesis pathway in different maturity stages: immature green (IG), mature green (MG), color break (B), mature (M). Taken together, these results allowed the identification of specific hybrid genotypes that have the potential to accumulate higher levels of carotenoids in the pulp and, therefore, are good candidates for genetic engineering the carotenoid biosynthetic pathway.