

Title Temporal and spatial changes of chlorophyll fluorescence characteristics of postharvest kiwifruit (*Actinidia deliciosa* 'Changan 4')

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Abstract

Chlorophyll fluorescence characteristics of kiwifruit (*Actinidia deliciosa* (A. Chev.) C.F. Liang et A.R. Ferguson 'Changan 4') at postharvest were studied. Photosynthetic pigment concentrations in outer pericarp (OP), inner pericarp (IP) and axile placenta (AP) were determined and maximal PS II quantum yield (F_v/F_m), effective PS II quantum yield ($Y(II)$), coefficient of photochemical quenching (qP), coefficient of non-photochemical quenching (NPQ), apparent electron transport rate (ETR) were compared. Contents of chlorophyll (Chl) a, Chl b, Chl a+b and carotenoid (Car.) decreased and the proportion of light-harvesting Chl to reactive center Chl increased as indicated by increasing Chl a/b in the same tissue zone with storage; content of the pigments reduced in the orders of OP, IP and AP while the proportion increased as indicated by decreasing Chl a/b in the same order of tissue zone in the same stage. Except that $Y(II)$, qP and ETR were all zero in AP and its peripheral part (PP), F_v/F_m , $Y(II)$, NPQ, qP and ETR declined in the corresponding tissue zone with the progress of fruit ripening; along the long axis from the distal end to the base of the fruit in the same stage, the changing trend of these parameters were identical in OP and IP, while F_v/F_m and NPQ of PP and AP presented an upward trend after the first drop. And these parameters decreased in the order of OP, IP and AP in the same stage. It is concluded that OP and IP of the fruit still have a certain degree of photochemical activity after harvest.