

#### Abstract:

'Fuyu' persimmon fruits were harvested at commercial maturity and stored for four months under four different controlled atmospheres at 0°C to elucidate a causal factor inducing browning disorders. Atmospheric compositions were; two different low-oxygen (LO) with low carbon dioxide concentrations, high oxygen with high carbon dioxide, and LO and high carbon dioxide combination. Four different types of browning disorder occurred, which could be classified by symptoms and the surface zone affected; typical top flesh browning called 'chocolate symptom' on the top, pitted specks scattered on the surface, flesh blotch browning usually on the equatorial to bottom portion, and pitted blotch browning on the equatorial zone. Top flesh browning was observed in two different LO atmospheres. The incidence was higher when LO was combined with high carbon dioxide than when combined with low carbon dioxide. No top browning occurred in the other LO atmosphere in which oxygen level was maintained slightly higher despite a little higher carbon dioxide combination. The browning symptom was neither observed under high carbon dioxide combined with high oxygen atmospheres. The results suggested that top flesh browning is primarily induced by LO not by high carbon dioxide and that the critical level of oxygen is in the very narrow range. For external development, however, highly elevated carbon dioxide seemed to be a complementary factor. Speculative primary inducing factors for other disorders were; low oxygen for flesh blotch browning, high carbon dioxide for pitted specks and pitted blotch browning.