Abstract:

Ethylene enhances softening of ‘Hayward’ kiwifruit. The fruit itself does not produce ethylene until it softens to a flesh firmness less than 10 N. Considerable variation in ethylene production rate between individual fruit was observed on fruits of similar firmness. Identifying reasons for the variation will provide useful information for crop management. Commercially packed fruit from 6 growers were stored until most fruit produced detectable ethylene. Fruit respiration rate, external colour (in L, C, H colour space), storage disorders and firmness were recorded after ethylene measurement. Fruits were graded into 6 quartile groups according to their ethylene production rates for canonical discriminant analysis. The first canonical function accounted for 43% of the variation in 13 variables and separated low ethylene producing fruits from high ethylene producing fruits while the second canonical function further separated fruit producing undetectable ethylene from those producing trace amounts of ethylene. High ethylene producing fruits were associated with severe fungal rots, severe low temperature break down, higher respiration rate, and lower firmness than low ethylene producing fruits. High ethylene producing fruit also tend to have lower lightness and chroma.