

Abstract:

Banana (*Musa AAA*) is a tropical fruit that is generally consumed ripe. The turning of the peel from green to yellow is associated with the initial stages of ripening. Knowledge of the degreening process would enable sound horticultural practices to be developed that produce colour suitable for particular markets. At tropical temperatures (above 24 °C), the degreening of bananas is inhibited because chlorophyll is retained. As a result, the peel is a pale greenish yellow colour. Plantain (*Musa ABB*), another group in the genus, degreens rapidly and completely, even at high temperatures. In this experiment, we studied chlorophyll autofluorescence to determine the location of chlorophyll in the peel during colour change. We measured colour using an L*a*b* colour system. We used a* to estimate chlorophyll concentration in the peel and we studied changes in the peel of bananas and plantains ripened at 20 and 30 °C. At day 4 after storage at 30 °C, the a* value was still low or negative value (green) in banana. The bright red colour of chlorophyll autofluorescence was retained at day 4 of storage only in the peel of bananas at 30 °C. However, the autofluorescence occurred only at the surface of the peel, whereas initially it was present throughout the peel. The chloroplasts of bananas at 30 °C, at day 4 of storage, retained their thylakoids whereas in chloroplasts of plantains at 30 °C, the thylakoids had disappeared. The retention of chlorophyll, which was found only at the surface of the peel of bananas ripened at 30 °C tells us that chlorophyll degrades from the inside to the outside of the peel. In addition, bananas ripened at 30 °C have the capacity to degrade chlorophyll, at least in the deeper layers of the peel.