

**Title** Successful shipments of tropical fruits (papaya, lime, mango and banana) under controlled atmosphere conditions for long distance

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### **Abstract**

The usage of CA has increased steadily, contributing to extend the postharvest life and maintain the quality of several fruits and vegetable. Cargofresh AG, has been worked for years on transport market shipping successfully fresh goods and has extended its product range with a new technical innovation that makes the use of CA technology even more flexible and economical. In 2005, Assis published the results of a CA shipment of papaya storage at 10°C, RH 95% and O<sub>2</sub> 3%. After 14 days of transit and 14 days of storage-life under room temperature, fruits showed good quality. Trials shipments using the Cargofresh CA have been carried out from Brazil to Europe or Canada with papaya and Formosa with transit time up to 21 days. Quality analyses were determined as weight loss, brix, firmness, visual appearance. The set-points were O<sub>2</sub> 3%; RH 95% at 10°C. All shipments showed that fruits arrived in good condition and no quality losses were found. Fruits maintained an acceptable shelf-life quality for up to 10 days at room temperature. Nowadays, papayas are transported regularly in CA-containers. Lime “Tahiti” is also transported regularly under CA from Brazil to Europe. After 19 days of transport, it has proven that CA can improve quality preservation of lime for peel coloration and freshness. A stationary test was carry out with riper Brazilian mangoes during 43 days under CA conditions. After storage, the cultivars with best quality and longest period of shelf-life were “Kent” and “Tommy Atkins”. Also, a commercial shipment of mango “Tommy Atkins” with 49-day-transport from Brazil to Japan was carry out and fruits arrived in good condition. Banana “Cavendish” with and without fungicide treatment were transported in CA in order to study the influence of CO<sub>2</sub> on the development of moulds in banana. After 15 days of transit time, fruits arrived in good quality and no signs of crown-rot were found. Until now, perishable goods from overseas were transported by air or the unripe fruit by refrigerated container. Now the Cargofresh system enables ripe fruit to be transported on container ships.