Abstract

ripeSense® is the world's first intelligent sensor label that changes colour to indicate the ripeness of fruit. The sensor was invented by HortResearch scientists (Sharrock and Henzell) and developed into a commercial product in conjunction with Jenkins Group, the leading supplier to New Zealand's horticultural labelling industry. Their combined effort over seven years of research and development led to the creation of this cutting edge innovation and the start of a new revolution in fresh produce marketing. The pear sensor has been sold commercially in Australasia since 2004. The ripeSense® sensor works by reacting to the volatiles released by the fruit as it ripens. The sensor is initially red and graduates to orange and finally yellow.

Market research in US and Japan has shown that ripeSense® technologies would improve consumers' confidence in determining ripeness and increase purchase frequency of exotic fruit such as avocado and mango. In 2004, HortResearch began development of a second platform of sensor technology targeting avocado. This reached the commercial prototype stage in 2007.

Delivering consistent performance from the ripeSense® system requires managing the interaction of its sub-systems: the sensor, the packaging, and the fruit. Overlaying these three key sources of variation are their individual and combined interactions with the external environment within the supply chain

Commercial success relies on understanding and managing all of these sources of variation in the system. This will be illustrated with a recent example from a supply chain used to deliver avocado product to a customer in the UK.