

# Blue Cooling

Bluezone is a technology that has demonstrated effectiveness in extending fresh produce shelf life, reducing product loss and maintaining product quality, writes Gino Baldissari.

Initially developed for the US Army, Bluezone technology this year became subject to the necessary steps for being applied to the commercial shipping sector. An achievement made possible through a partnership between Primaira LLC, a Boston-based technology company, and Maersk Container Industry (MCI), the container manufacturing unit of the A.P. Moller-Maersk Group.

Bluezone is a patented technology that, thanks to extensive tests and trials, has shown efficient elimination of molds, fungi and bacteria, by using an ozone concentration 300 times higher than otherwise seen on the market, achieving the highest levels fresh preservation in a cost effective, efficient and reliable configuration.

MCI and Primaira have partnered to integrate the Bluezone into Star Cool containers, the refrigerated units manufactured by the Danish transport operator. In the words of MCI chief commercial officer, Soren Leth Johannsen, this integration involves an enormous change in the market.

The economic and environmental gains of converting today's airfreight into reefer containers are possible thanks to the integration of Bluezone with MCI's well-known CA and AV+ systems (Controlled Atmosphere and Automatic Ventilation), increasing the geographical reach of containerized transport and preserving the quality of fruit and vegetables.

These milestones make reefer container owners feel enthusiastic. The director of refrigeration services at Seaboard Marine Ltd, Clyde Wingate, said: "The systems offered today in the market, for example using ozone, are often only temporarily installed per shipment, meaning it is operationally cumbersome or the effect, due to a low ozone concentration, is undocumented. From a container owner's perspective it is also a major concern that ozone, by its nature, is aggressive when exposed on rubber, aluminum and copper."

The Bluezone technology has also demonstrated its great value in stationary cold storage, a fact that was witnessed by Keith Maggs, of Environmental Technologies Australia. Kiwi transport across Australia has been benefited from the Bluezone ethylene scrubbing and microbial reduction ability. Maggs remarks, "the effectiveness of this technology is to extend the shelf life and reduce shrinkage in the supply chain for kiwi fruit."

## Growers and Shippers

Bluezone is a technology for ethylene and mold control, with no impact on the container or on container volume capacity. It enables the optimization of ventilation without concern for ethylene or microbial build-up. A major advantage for sensitive products is the longer shipping distance which is now possible.

For use in walk-in refrigeration, Bluezone extends the shelf life of fresh fruits and vegetables by reducing mold, rot and waste and maintaining low levels of ethylene so that fruit does not spring. In addition, Bluezone eliminates odours and flavour transfer between items inside the walk-in cooler.



The miniaturized Bluezone fits in the commercial or consumer refrigerator to maintain the flavour, texture and colour, while reducing mold and bacteria formation. As many flowers and potted plants are highly sensitive to ethylene and microbes, Bluezone is able to keep cut flowers bright and fresh.

In summary, Bluezone technology works by removing undesirable components from the atmosphere of refrigerated containers, thus maintaining the colour, texture and taste of the fruits and vegetables for longer periods of time. The partnership between Primaira LLC and Maersk Container Industry has turned these technical achievements into outstanding benefits for consumers, the market and our environment.

