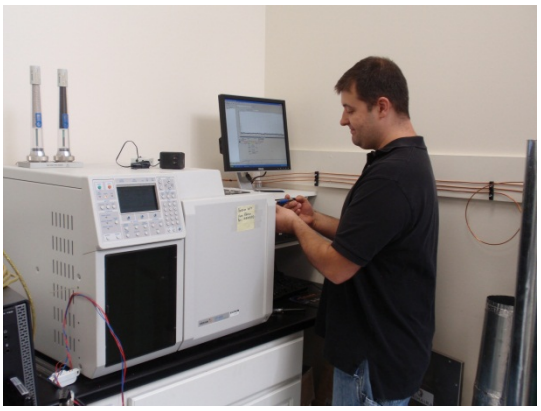
BLUEZONE®
FRESH PRESERVATION TECHNOLOGY

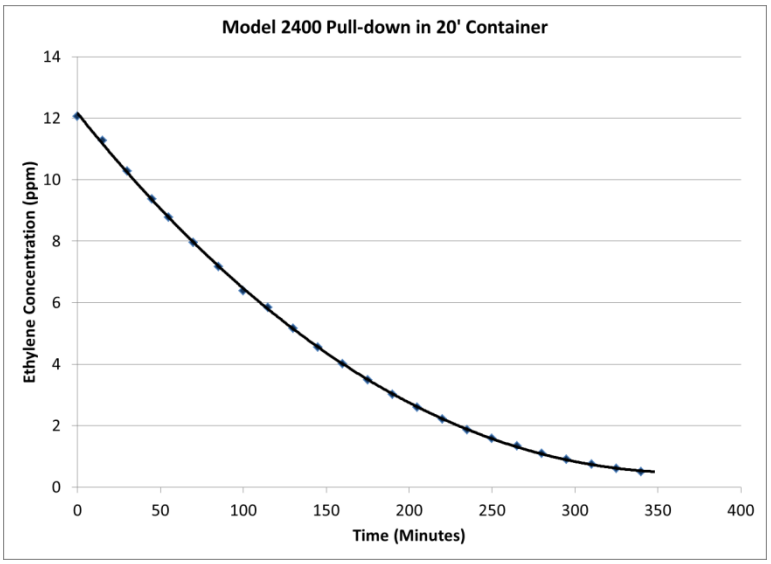
Ethylene Removal Using Bluezone® Fresh Preservation Technology

Bluezone® ethylene removal claims are based on an extensive database of test results. We measure ethylene in our tests and demonstrations using a gas chromatograph (GC) in order to differentiate ethylene from the other organic molecules that are given off by fruits and vegetables.



Gas Chromatograph to measure ethylene

We measure Bluezone® performance in a "pull-down" mode, so we see how quickly the product reduces ethylene concentration from a high level to less than a ppm. A typical pull down graph from a 20'container (1200 cubic feet) is shown below:



In addition, we measure ethylene concentration in rooms with the Bluezone® units compared with control rooms with no Bluezone® Units. An example of these data is shown below:

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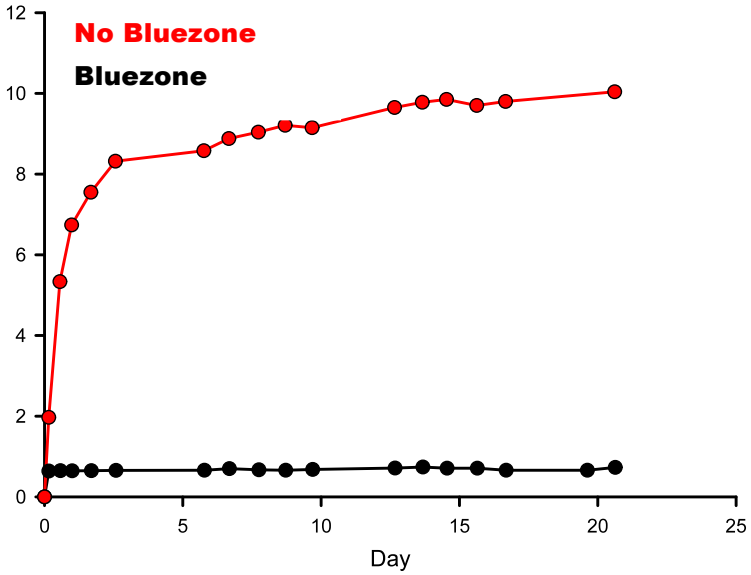
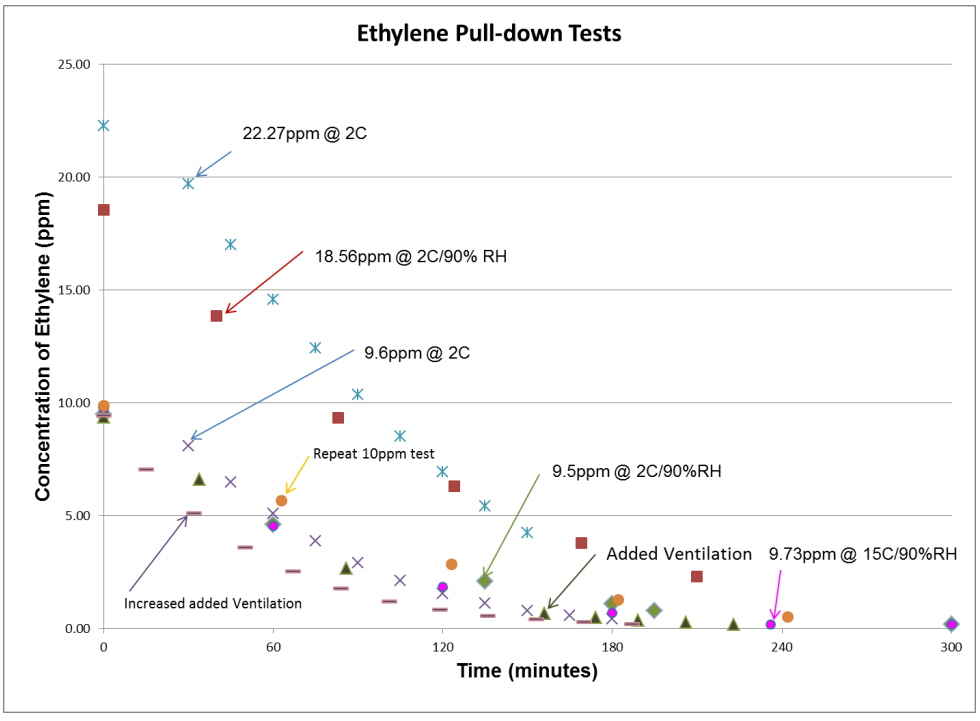


Performance of the units is repeatable and predictable. The performance of the Bluezone® technology is not impacted by elevated levels of carbon dioxide, humidity or temperature.



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Ethylene is biologically active and affects the ripening of FF&V as well as many other physiological processes. Certain fruits and vegetables generate ethylene as a natural part of their ripening cycle. Other fruits and vegetables are highly sensitive to the presence of ethylene, but may or may not produce the ethylene themselves. Because ethylene is a volatile organic compound, it diffuses out of plants and into the surrounding air. In this way, plants, fruits and vegetables can be affected by the ethylene produced by other FF&V. Some of the negative effects of ethylene on FF&V are induced at very low (i.e. <0.5 PPM) levels of ethylene.

Removing ethylene prevents the cycle of ripening in which early ripening of some causes other fruit to initiate ripening. Removing ethylene from the atmosphere slows the ripening process and maintains fruit quality. Since bruising can cause ethylene production, ethylene removal can prevent damaged fruit from causing an entire room to ripen. It can slow down the process so that calamity is avoided if fruit is held its expected storage limit.