**Abstract**

Nitric oxide (NO) is highly reactive free radical gas that in the last 20 years has been shown to have an important regulatory role in many human physiological systems. It was not until 1996 that plant metabolism of nitric oxide was first demonstrated in pea seedlings and research conducted at the University of Newcastle since 1997 has shown that a short term exposure after harvest to a low concentration of nitric oxide can extend the postharvest life of a wide range of climacteric and non-climacteric fruits, vegetables and flowers. The gaseous nature of nitric oxide and its high reactivity with oxygen pose logistical problems for commercial usage have been but methods of non-gaseous usage have been developed using solid nitric oxide donor compounds. Data will be present to show the effectiveness of direct application to produce of such a donor compounds dissolved in water and by controlled stimulation to degrade and generate nitric oxide gas into the atmosphere around produce in extending postharvest life.