Abstract

The effect of different O_2 levels from 0 to 100 kPa in combination with 0, 10 and 20 kPa CO_2 on the respiration metabolism of greenhouse grown fresh-cut butter lettuce was studied. Fresh-cut lettuce was stored during 3-4 days at 1, 5, and 9°C. Fresh-cut lettuce exposed to 20 to 100 kPa O_2 combined with 0, 10 and 20 kPa CO_2 showed a CO_2 production rate of 40 to 60 nmol kg^{-1} s^{-1} at 1°C. When lettuce exposed to 2 to 5 kPa O_2 in combination with 10 to 20 kPa CO_2 showed a significantly increased CO_2 production rates. The oxygen concentration (5 to 100 kPa) had a small effect on the respiratory activity of fresh-cut lettuce. Moderate CO_2 level (10 kPa) could reduce the oxygen consumption rate of fresh-cut lettuce. This effect was clearer at higher temperature. Gas composition with CO_2 levels (20 kPa) probably caused a metabolic disorder increasing the respiration rate of fresh-cut butter lettuce. The respiratory quitrent was about 0.7 to 1.0 in O_2 concentrations from 20 to 100 kPa at all temperatures.