

Case Study: CO2 Foliar Spray Effects on Microgreens

Indoor use of CO2 gassing has enhanced plant yields for over 60 years. However, over 50% of the CO2 gas is typically lost through ventilation. Current greenhouse CO2 gassing levels of up to 1500 PPM are also not ideal for worker health and safety. GRO's safer dissolved CO2 foliar spray can be used by indoor and outdoor plant growers with minimal CO2 gas lost and greater plant bioavailability resulting in higher yields as shown in this case study.

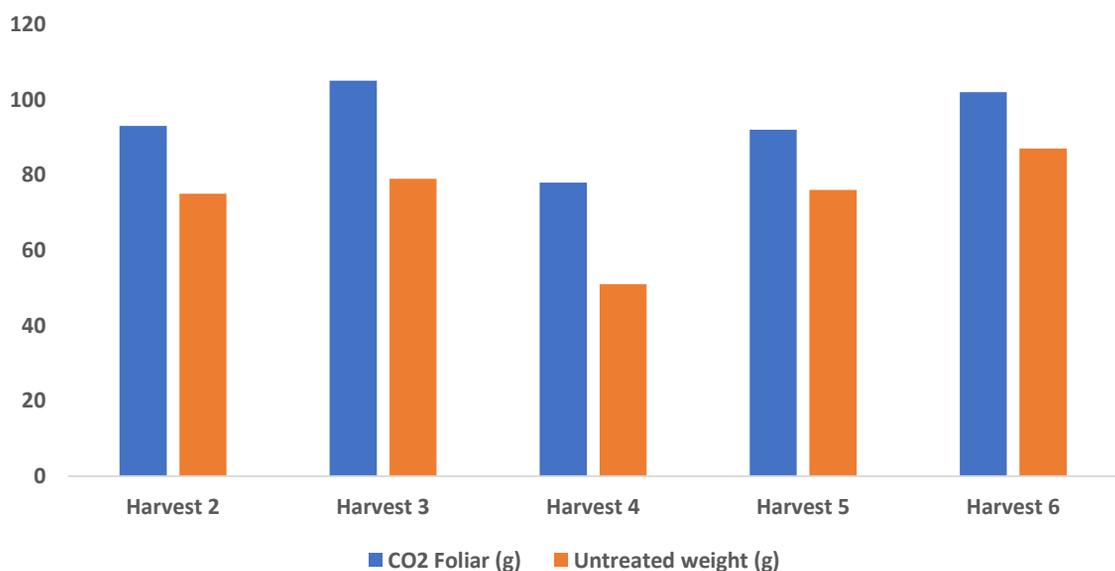
Benefits:

- 25% increase in bud weight
- Fuller / thicker crop growth
- Increased number of branches
- Improved growth canopy
- No additional equipment needed to achieve increases of this magnitude

Microgreen Results:

Multiple trials were performed on both arugula and lettuce microgreens using CO2 foliar spray. Arugula has a very short growth cycle of about 12 days meaning that any noticeable increase in production would be substantial. Throughout the trials, the yield of the CO2 treated crops was consistently larger. At its smallest, the yield of the CO2 foliar sprayed crops was still 8% larger and at its peak, reached an increase of 25%.

Arugula Microgreens Treated with CO2 Foliar vs. Untreated





Microgreen Trails

All microgreen trials were performed in Lynden, Ontario. Trials consisted of tables containing 63 trays of either arugula or lettuce. All tables were sprayed using a greenhouse boom (depicted on the left) with either untreated water or CO2 enriched water. Crops treated with CO2 foliar spray showed noticeable increases in both size and weight.

About CO2 GRO

GRO's mission is to accelerate all indoor and outdoor value plant growth naturally, safely, and economically using its patented advanced CO2 foliar technologies. GRO's global target plant markets are retail food at \$8 trillion per year (Plunkett Mar 2017), retail non-food plants at an estimated \$1 trillion per year and legal retail cannabis that may reach \$50 billion per year by 2022 (Bay St Analyst estimates).

The CO2 technologies work by transferring CO2 gas into water and foliar spraying across the entire plant leaf surface area, which is a semi permeable membrane. The dissolved concentrated CO2 then penetrates a leaf's surface area naturally like nicotine naturally dissolves through human skin from a nicotine patch.



The above pictures of lettuce show the difference in growth that CO2 foliar spray can make. The top picture shows lettuce treated with CO2 foliar spray, the bottom picture shows untreated lettuce. Both groups were sprayed in an identical manner.