



CO2 GRO Inc.

(GROW.TSXV, BLONF.OTC, 4021.Frankfurt)

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## CO2 GRO INC.™ (GROW) - CORPORATE OVERVIEW

**GROW's mission is to accelerate the growth of all value plants safely, economically and naturally using our patented advanced CO2 Delivery Solutions™.** Our systems dissolve CO2 gas into water without bubbles creating an aqueous CO2 solution. The aqueous CO2 is then misted on plant leaves creating a thin film around the leaf, isolating the leaf from the atmosphere. The dissolved CO2 molecules then transfer into the plant leaves providing more carbon for the plant to grow. More carbon availability enhances photosynthesis. **This maximizes plant yields, growth speed to maturity, plant quality and customer profitability.**

**85% of the world's 50 billion square feet of greenhouses cannot gas with CO2 due to required heat venting and/or building porosity.** This is GROW's target market. Commercial Feasibility units have been installed at greenhouses in the US, Canada, and the UAE to date in 2020.

**Results.** GROW has demonstrated **30% average value increases** using its CO2 Delivery Solutions™ on cannabis, hemp, lettuce, flowers, peppers, kale and arugula in scientific and commercial settings, **matching the plant yields that greenhouse growers who can gas with CO2 achieve, while using a fraction of the CO2 gas.** The combination of enhanced growth, pathogen protection, CO2 usage savings while in a less expensive unsealed open-venting greenhouse, makes CO2 Delivery Solutions™ the only economical CO2 option for most greenhouse growers.

**Perimeter Protection™.** Applying aqueous CO2 solution for a few seconds several times per hour also dramatically slows the spread of micro pathogens such as *E. coli* and powdery mildew. This is due to the acidic aqueous CO2 solution dropping the pH on the leaf surface when applied and the subsequent increase in pH once the CO2 transfers into the leaf. This constant fluctuation on the leaf surface creates an unfavorable environment for these micro pathogens to thrive and spread. Demonstrations on peppers and *Cannabis* showed 99% less *E. coli* and powdery mildew spread versus controls and three times longer plant survival of plants infected with powdery mildew versus controls. **CO2 gassing does not provide this benefit as there is no pH fluctuation from the CO2 entering the leaves through the stomata.**

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**Greenhouses CO<sub>2</sub> gassing losses average 60%** according to an Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) study. CO<sub>2</sub> Delivery Solutions™ has been demonstrated to use an average of 90% less CO<sub>2</sub> gas than atmospheric enrichment by CO<sub>2</sub> gassing while achieving the same growth benefits.

**CO<sub>2</sub> Delivery Solutions™ safety versus gassing.** Atmospheric enrichment of CO<sub>2</sub> to levels  $\geq 2,000$  ppm are unhealthy for humans to breathe. Therefore, greenhouses typically restrict worker hours while these levels are maintained during the light cycle. Aqueous CO<sub>2</sub> misting is applied directly to the plant leaves and is therefore not breathed in through the air. The solution is also potable so anyone that decides to take a drink will be safe.

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**Our 2020 Management team:**

- 1) John Archibald, President and CEO. He founded gas infusion companies Canzone and inVentures in 2000 as well as CO<sub>2</sub> GRO Inc.'s predecessor Carbon2Algae in late 2007.
- 2) Aaron Archibald, VP Sales and Strategic Alliances. Aaron was VP Operations for inVentures from 2005-2017, commercializing a number of gas infusion business verticals such as groundwater remediation, wellness and aquaculture. He leads Sales through internal representatives, commissioned independents and Ag Industrial Partners.
- 3) Dr. Matt Julius, Chief Science Officer. He is a Biology Professor at St. Cloud State University (SCSU) who is working during his Sabbatical year with us. He designs all of CO<sub>2</sub> GRO's scientific grow trials supporting our now six PCT patent filings, commercial feasibilities with potential customers and oversees all Communications and Funding submissions to ensure scientific accuracy.
- 4) Sam Kanes, VP Communications. He co-founded Carbon2Algae in late 2007 with John and has been a foundational Director of the Board of CO<sub>2</sub> GRO Inc. and its predecessor companies Solutions4CO<sub>2</sub> and Carbon2Algae.

John and Aaron sold both gas infusion patent owner Canzone and gas infusion equipment manufacturing company inVentures (a Canzone licensee) in July 2017. They then joined CO<sub>2</sub> GRO Inc. to commercialize a dormant (since 2014) perpetual royalty free CO<sub>2</sub> gas infusion license for dissolving CO<sub>2</sub> to enhance plant growth. John and his partners assigned this perpetual license from Canzone to CO<sub>2</sub> GRO Inc. in its 2012 IPO (then called Solutions4CO<sub>2</sub> Inc.).

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**Strategy.** John Archibald executes the Board approved 2020 Business Strategy and Budget via his VP Sales & Strategic Alliances, Chief Science Officer, Chief Financial Officer, VP Communications and other valuable partners and alliances.

**Operations.** CO2 Delivery Solutions™ Commercial Installations and Commercial Feasibilities are led by Aaron Archibald with support from Dil Vashi, Manager of Corporate Development. CO2 Delivery Solutions™ marketing, sales, project design, implementation and customer management are the responsibility of the VP Sales & Strategic Alliances and the CEO.

**Communications and Investor Relations.** Sam Kanes is the primary liaison for investors and other interested parties enquiring about GROW. He engages in private and public funding initiatives for enhancing GROW's business developments. He is responsible for most forms of GROW communications that include interfacing with public relations and media representatives, press releases, investor and shareholder inquiries, as well as incoming business development inquiries which are then handed to the VP Sales. Sam is supported by a professional Manager of Investor Relations, Michael O'Connor.

## **PATENT PENDING CO2 DELIVERY SOLUTIONS™ TECHNOLOGY**

GROW filed an additional five (5) related patents under the Patent Convention Treaty (PCT) in 2019 for 1) plant micro-pathogen growth resistance, 2) plant metabolite maximization 3-4) two for outside drone applications of aqueous CO2 and ammonia (NH3) and 5) for a retail hand held CO2 Delivery Solutions™ device for very small commercial or home use.

Our global PCT patent for CO2 Delivery Solutions™ went pending in August 2018 after a year of both filed scientific and commercial plant growth trials success. We continuously add our plant growth enhancement and micro-pathogen resistance results to our PCT filings to strengthen our patent pending status.

Our first core patent pending global PCT is for "plant growth acceleration systems and methods" to accelerate plant growth using any misting, spraying or atomizing methods of delivering dissolved CO2 onto plants from any dissolving CO2 technology.

## **OUR CO2 DELIVERY SOLUTIONS™ TRIALS, FEASIBILITIES AND INSTALLATIONS**

In February 2018, manual misting of aqueous CO2 trials began on microgreens, followed by *Cannabis*, lettuce, flowers and peppers. In September 2019, our first Commercial Feasibility installation of a generation 2 automated system was done at a large Ontario flower greenhouse. In December 2019, our first Canadian *Cannabis* Commercial Feasibility installation was announced and a second at a Canadian *Cannabis* micro-cultivation facility in May 2020. In March

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2020, we installed a Commercial Feasibility system in each of fifteen Missouri U.S. hemp greenhouses and one in a Dubai, UAE lettuce greenhouse.

Commercial Feasibilities typically range from 1 to 4 grow cycles depending on the crop and the client's requirement for robust data collection in order to make a decision to purchase a Commercial Installation.

## **REGULATORY APPROVALS**

In May 2018, Health Canada's (HC) Pesticide Management Regulatory Agency (PMRA) concluded our technology "Does not meet the definition of a Pesticide" and in July 2018, the Canadian Food Inspection Agency (CFIA) concluded our technology "does not fall under the purview of the Fertilizer Act. It does not meet the definition of a supplement." **CO2 Delivery Solutions™ technology can therefore be used by all Canadian food and non-food plant growers.**

## **CO2 DELIVERY SOLUTIONS™ MARKET OPPORTUNITY**

**Approximately 85% of the world's 50 billion square feet of greenhouses are not economically able to use CO2 gassing.** They are typically located in hotter countries like those of the Middle East, Spain and Southern U.S. where excess heat has to be constantly vented. This venting process also removes the CO2 gassed into the greenhouse atmosphere, making it uneconomic. These greenhouses, semi-enclosed shade houses, hoop houses and other indoor horizontal and vertical grow facilities that cannot gas with CO2 are our target customers. For 2020, we are focused on greenhouse growers in North America, the UAE and Israel.

There are also 4.6 billion acres of crops planted annually but most have low plant values per acre. Based on our initial research, we believe drone CO2 misting delivery economics would be positive for at minimum, outdoor *Cannabis* acres. Other outdoor CO2 misting delivery options are being assessed to determine the best economic outdoor CO2 misting delivery solution.

**Aside from atmospheric enrichment by CO2 gassing, which is limited to about 15% of the world's greenhouses, there is no other alternative we are aware of for growers to economically supplement their plants with CO2.**

## **CO2 DELIVERY SOLUTIONS™ BUSINESS MODEL**

**We target greenhouse customers who can get a payback in less than two years if they buy a system from us while providing a high gross margin for us. Nearly ALL greenhouse grown crops**

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fall into this category. There is a reason why people grow in greenhouses – higher production and revenue per square foot versus outdoor. CO2 can help maximize this production and revenue.

**Customers can choose to buy, lease-to-own or long-term lease our CO2 Delivery Solutions™.** Regardless of the sale structure, a CO2 Delivery Solutions™ sale includes project design, engineering, equipment (from CO2 Dissolution System to misting nozzles), installation, commissioning, Technology Site License and training. CO2 gas supply is not included as this is sourced from local industrial gas suppliers.

All our CO2 Delivery Solutions™ require some customization and engineering based on facility size, plants grown, CO2 gas needs, irrigation modifications to CO2 misting required, greenhouse layout etc. Final Commercial Installation pricing is based on the final design after scoping and accounting for all these unique factors for each customer.

## **ONGOING COLLABORATIONS WITH AG INDUSTRIAL PARTNERS**

We are in discussions with established regional or global companies involved in industrial CO2, indoor and outdoor irrigation, greenhouse construction and other related industries as our business opportunity is global. To date, most of our 2020 Commercial Feasibility proposals are out to North American growers, with several to UAE and Israel growers through our regional Ag Industrial Partners, Gulf Cryo and DOTZ, respectively.

## **WHY CO2 DELIVERY SOLUTIONS™ WORKS WHERE ATMOSPHERIC CO2 GASSING DOES NOT**

Most plant growth enhancers have by now, been optimized in greenhouses, such as light intensity and spectrum, nutrients, moisture, heat, pesticides, bio-actives etc. The last missing growth factor to maximizing plant yields has been **what is the most efficient delivery of CO2 to plants** so they can absorb enough CO2 gas to achieve maximum biological photosynthetic rates supporting an optimal plant metabolism.

**Our CO2 Delivery Solutions™ technology maximizes CO2 delivery efficiency.** Applying an aqueous CO2 mist to leaves creates a CO2 gas pressure that is greater on the outside of a leaf surface (either top or bottom) than the CO2 gas pressure inside a leaf. Nature then balances the CO2 gas pressure difference by forcing the dissolved CO2 through the entire plant leaf surface area. It takes only a few minutes for leaves to fill with the dissolved CO2 molecules they are capable of holding in their spongy sub-surface mesophyll cells – the time it takes to fill a car gas tank.

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**The bottom line, CO2 Delivery Solutions™ enables ALL greenhouse and covered cultivation regardless if they are unsealed and open venting to supplement their plants with CO2 for enhanced growth.**

## **CO2 DELIVERY SOLUTIONS™ MARKET FOCUS**

Dry, warm climate areas in the U.S. like California, Middle East and Spain are ideal to grow plants in low-cost open-air greenhouses called shade houses. They have studs for walls, so it is impossible for them to use CO2 gassing as the CO2 gassed immediately dissipates. An example:



This shade house has 150 moving overhead irrigation booms that are ideal for us to connect our CO2 Delivery Solutions™ systems. Below is a sealed greenhouse with 28 installed booms for irrigation that are also ideal for our CO2 Delivery Solutions™ connections:



Pictured is an arugula crop that typically matures in two weeks. We achieved 35% more arugula biomass yield versus control plants using a connected CO2 Delivery Solutions™ system to one of the moving irrigation booms at this greenhouse.

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Some greenhouses use root feeder irrigation drip lines only, such as most large *Cannabis* operations. In their case, we need to add misting booms or install overhead misters to reach their *Cannabis* plant canopy. The added capital cost for misting infrastructure can vary but is generally \$1-\$1.50 per square foot. Capital cost of buying our CO2 Delivery Solutions™ system ranges based on facility size and canopy serviced - like anything, the more volume and scale the more economical to purchase.

**The vast majority of greenhouse growers regardless of crop will see a payback of under 2 years with *Cannabis* and hemp being well under a year.** We believe the added revenue and value of larger *Cannabis* bud weight grown faster with Perimeter Protection™ using a CO2 Delivery Solutions™ system far exceeds the cost of additional capital required.

**GROW's market focus is all the greenhouses that are similar to the ones above, i.e. unsealed with open sides and roofs for heat venting and air flow. These greenhouses cannot use atmospheric enrichment of CO2. Their only option is aqueous CO2 misting with CO2 Delivery Solutions™.**

## **MISSOURI HEMP FLAGSHIP GREENHOUSE INSTALLATIONS**

In March-April 2020, we successfully installed thirteen systems at Missouri based Linn County Seed & Flower and two at nearby Sacred Seeds Hemp Farm. They have our smallest commercial CO2 Delivery Solutions™ VCO2 model that can each cover up to 10,000 square feet of plant growth – the Missouri houses are each approximately 2,250 square feet.

These hemp greenhouse owners are connected to a U.S. hemp network of over 250 hemp greenhouses that sell hemp seeds and other hemp-based products to American Hemp Ventures (AMHV.OTC). We believe the yield and micro-pathogen protection results from the first fifteen will attract others to our technology.

Greenhouse owners have already expressed positive results from the application of aqueous CO2 misting during the vegetative stages. Linn County Seed & Flower CEO, Levi Swanson, who is also CEO of Klondike Agricultural Products, an innovative seed technology company stated, "We are impressed with the installations and are already seeing results such as faster growth and bigger plants compared to what we expected. There are another nine greenhouses at Linn County who have expressed interest in installing CO2 Delivery Solutions™ for their next grow cycle after seeing the resulting growth firsthand. The state of Missouri is positioning itself as a leader in high quality hemp production and we see ourselves as a leader in driving the growth of hemp cultivation in the state. We are also excited about the quantity and quality of seed that will be produced at Linn County which will be incorporated into Klondike's KAPsol™ self-contained ecosystem technology which provides growers with higher germination rates and crop viability for greater yields."

Linn County and Sacred Seeds greenhouse owners also expressed their satisfaction with CO2 Delivery Solutions™. Hunter Marriott, owner of three greenhouses at Linn County commented, "The faster and bigger growth during the vegetative stage was visible in just one week after implementing. It has certainly had an impressive effect on my plants." Robert Allen, owner of two greenhouses at Sacred Seeds commented, "I am using CO2 Delivery Solutions™ primarily to help prevent the growth of mold and powdery mildew, but let's face it, faster growth and larger plants were huge selling points as well. As of April 2020, I have been using the system in two large greenhouses for about a month and I am already seeing improved growth with no signs of stress, mold or mildew."

To see a video testimonial of our CO2 Delivery Solutions™ set up at Sacred Seeds, please [click here](#).

### **Key CO2 GRO 2019-2020 YTD Awards and Recognition**

1. **We were selected as one of Life Science Ontario's 2019 Success Stories with other major pharma companies like Merck Canada and Glaxo Smith Kline.** Life Sciences Ontario now oversees the business interests of Ontario's medical cannabis industry. They recognized the importance of the plant pathogen protection our 100% natural CO2 technology provides for growing plants safer that go into medical cannabis human health products.
2. **We were selected as a top Ag Tech Canadian company by Canada's California Trade Commissioners** who hosted us December 3-6, 2019 in Sacramento, San Francisco and Salinas.
3. **We were selected in February 2020 to speak as one of four finalists in the World Ag Expo's Hemp Innovation Challenge in California.** There were 65 hemp innovation entries from fourteen countries. This selection was instrumental to us getting the fifteen commercial U.S. hemp installations going in March.