

Proactive Investors Feature Article

CO2 GRO seeks to help greenhouses achieve up to 30% more plant yield via its advanced CO2 Delivery Solutions™

By Patrick Graham

April 23, 2021

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CO2 GRO Inc. (CVE: GROW) (OTCQB: BLONF) (FRA: 4021) is dedicated to increasing the growth and value of all indoor plants safely, naturally, sustainably, and economically using its advanced CO2 Delivery Solutions.

The Toronto-based company's technology helps greenhouses achieve up to 30% more plant yield consistently throughout the year. In addition, aqueous CO2 misting offers pathogen Perimeter Protection for plants by slowing the spread of micro pathogens such as E. coli and powdery mildew.

The CO2 Delivery Solutions system also offers greenhouses the ability to supplement their plants with CO2 consistently throughout the year without emitting CO2 gas to the atmosphere, using up to 95% less CO2 through aqueous CO2 misting.

Proactive recently discussed the company's state of operations, the effects of the coronavirus (COVID-19) pandemic, and growth plans with CO2 GRO CEO John Archibald.

Exactly what does CO2 GRO do?

GROW sells its CO2 Delivery Solutions systems and licenses its technology to protected agriculture customers, providing them with an up to 30% value increase. As our systems have low operating costs while precisely applying CO2 on leaf surfaces only, a very high percentage of that increased value falls to a grower's bottom line. Our technology also suppresses the development of plant pathogens such as E. coli, molds and mildews. Our technology's use has been approved for all growers in Canada and is sustainable and environmentally friendly.

What is the global market opportunity for CO2 GRO?

The global protected agriculture market is 600 billion square feet comprised of 50 billion square feet of greenhouses and 550 billion square feet of open side facilities. (Cuesta Robles 2019 study). However, less than 10 billion square feet of greenhouses can gas CO2 economically for up to a 30% value increase. The other 590 billion square feet of greenhouses and open-sided facilities cannot use gaseous CO2 but can use our CO2 Delivery Solutions technology for up to a 30% value increase, and a much larger percentage increase in profits. We sell our systems with a site technology license for a one-time per square footage payment and offer extended payment terms over 5 years.

What are open-side facilities?

Open-side facilities are any structure that growers use to enhance value increase, both larger plants and faster plant growth. This includes structures ranging from hoop houses, shade houses, tunnel houses, netting houses and other protected agriculture structures.

How does your technology work?

CO2 Delivery Solutions dissolves gas into water to create a saturated CO2 solution that is then misted onto plant leaf surfaces. We use nozzle technology and specific misting modelling patterns to ensure proper leaf surface coverage. The applied saturated CO2 then enters the leaf irrespective of leaf stomata and provides additional carbon for plants to grow faster and larger through photosynthesis. The misting events are very short (5 to 15 seconds) for 2 to 3 times per hour. These short intermittent misting creates a fluctuating pH level on the leaf surface making the leaf surface an inhospitable environment for pathogens such as E. coli molds and mildews to reproduce.

Why is CO2 GRO's technology so novel for protected growers and not been done before?

Until our discovery, growers and agriculture service providers did not recognize that the entire plant leaf surface can transfer saturated CO₂ into its cells if the CO₂ is first dissolved in water and then applied on the leaf. Misting saturated CO₂ onto a leaf creates a temporary CO₂ rich micro-environment film with only dissolved CO₂ molecules being available. Gassing CO₂ up to 1000 parts per million (PPM) in sealed greenhouses means only one in one thousand molecules of air is available as CO₂ and only to leaf stomata.

How does CO₂ GRO carry out its scientific work and proof of concepts for its patents?

GROW has partnered with Dr. Matt Julius at St Cloud State University (St. Cloud) - who is now CO₂ GRO's chief science officer - and entered into research contracts with the university to establish the veracity of observations of enhanced plant growth using saturated CO₂ in mist form. We recognized that a significant part of our business was going to be in the United States so working with a US university that understood our technology, understands plant botany and is nimble with respect to its research made sense. The plant research work being done at St Cloud is owned by CO₂ GRO and is critical in driving our patent strategy and supporting our patent filings.

GROW's current management team first filed for a PCT patent recognizing this plant leaf CO₂ absorption phenomenon and then scientifically and commercially proved it in 2019 and 2020. Four further PCT patents were filed in 2019 and a fifth in 2020 to protect the core intellectual property.

GROW recognizes that a strong suite of patents protects its market position, helps to accrete value to its shareholders, and gives confidence to its market partners that they will not be copied out of business.

Where is CO₂ GRO growing its business?

We initially began our technology roll-out locally in Canada in 2018 and entered the US in 2019. Since then, we have established regional partners in the Middle East, the EU, the UK, South Africa and in Southeast Asia. Our latest focus is Mexico and other Latin American countries. It is our intent to solidify these positions and grow our business directly in North America and with our marketing partners in the international markets mentioned.

How has COVID-19 affected company operations?

It has negatively affected some of our prospective customers' plans and timing to adopt our technology as they struggle with their particular constraints in their own markets and the effects of COVID-19 on their workforce. Our existing and potential customer base is fairly labour sensitive. Travel restrictions have not helped. Fortunately, MS Teams, Zoom, and other communication platforms have allowed us to do a lot of virtual global travel to meet with potential customers, partners, government officials, associations and present as virtual exhibitors.

Does CO2 GRO follow ESG principles?

GROW has adopted environmental, social and governance (ESG) policy and practices, recognizing that following ESG principles is becoming increasingly important in Canada and internationally to all stakeholders. Prior to formalizing its ESG policies, GROW was already an equal opportunity and pay parity employer for all like positions regardless of gender or race, or creed. Senior management recognizes the benefits of diversity within the organization.

Tell us about yourself and how you got involved in CO2 GRO?

I am a professional engineer (civil) and have a career spanning over 40 years in engineering, corporate management, and international experience both working and living abroad. I have managed large business units for large companies leading to high productivity and profitability. I have established overseas operations for large companies and have managed and worked with numerous smaller technology firms launching their initiatives into the marketplace. I have also been involved in the transfer, licensing, and patenting of technologies.

I was one of the founders of a company dissolving gases into liquids for various industrial and medical purposes. In 2017 we sold that company. GROW was one of our licensees and had an exclusive license for the use of dissolved CO2 in the growth of all plants. Post that sale, GROW's board asked me to form a team to refocus the firm and implement the use of the dissolving CO2 technology license. We recognized that leaves may absorb CO2 dissolved in water across the leaf surface more effectively than atmospheric CO2 gas. Since early 2018, we have developed a team of professionals dedicated to the corporate mission of enhancing protected agriculture plant yields and profits and to accreting sustainable value for our shareholders.

What is the strategy and outlook for the company for 2021 and beyond?

GROW's management team is relentlessly working to get protected growers to adopt our novel and disruptive CO2 Delivery Solutions technology. Growers are typically very conservative. They do not want to risk their crops on a new technology without trying it first on a small portion of their facilities. Entering Q2 2021, we are finally seeing continuous adoption of the technology and the more success we have, the greater the influx of new business. Our strategy is simply to build on cumulative success and continue to strengthen the management and sales team as business increases. We are likely to maintain our geographic focus as mentioned earlier for 2021 and 2022 while supporting our sales forces and international market partners.

Contact the author: patrick@proactiveinvestors.com

Follow him on Twitter @PatrickMGraham