CO2GRO's INDOOR/OUTDOOR DISSOLVED CO2 FOLIAR SPRAY

CO2GRO INC. - EXECUTIVE SUMMARY

We dissolve CO2 gas into water without bubbles so indoor and outdoor growers can maximize plant yields safely, naturally and more profitably.

CO2 is essential for all photosynthetic plant life. When dissolved CO2 water is sprayed on leaves**,** plants can consume **ALL** the carbon their genetics allow for maximum growth. Our CO2 grow trials **point to up to 300% more algae and up to 100% more lettuce biomass growth** at NRC Canada and at the U of Guelph. Further lettuce trials will get underway in March.

Nature's balancing force dissolves CO2 gas from air's 410 PPM into surface water that cannot exceed 410 PPM. Nature's balancing force also drives dissolved concentrated CO2 gas through semi-permeable leaf membranes when applied by foliar spray on leaves.

Greenhouses targeting a 1300 CO2 gassing PPM level **lose an average 60% of their CO2 gas** according to a Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) study. If CO2 gas is dissolved in water up to 2000 PPM, **most of that CO2 gas stays in water. We expect to save a majority of this 60% CO2 gas loss when greenhouse growers use dissolved CO2.**

Our first 2018 trials are on indoor cannabis, lettuce and micro greens to be followed by more cannabis, plant plugs, hemp, flowers and lettuce/microgreens. For Q2-Q4 2018, we intend to do outdoor CO2 grow trials in cannabis, hemp, tobacco, grapes and flowers.

We expect indoor growers will get 1**0-20% higher plant yields** with dissolved CO2 foliar spray use over CO2 gassing. Outdoor crop yields **could go up 10%-100%** based on CO2 gassing studies on responsive crop types and optimal dissolved CO2 use in overhead sprinklers.

There has never been a low cost CO2 source besides air for outdoor growers until now for faster plant growth and higher profits.

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DISSOLVED CO2 GAS INFUSION BACKGROUND

EXPERIENCED MANAGEMENT WITH CO2 GAS INFUSION

Our 2018 Management team is made up:

1) John Archibald, CEO, who founded gas infusion companies Canzone and inVentures in 2000 as well as BlueOcean in late 2007,
2) Sam Kanes, VP Business Development who co-founded BlueOcean in late 2007 with John and been a Director since 2007 as well as an initial Canzone Gas Infusion Patent investor in 2000 and
3) Aaron Archibald as VP Operations who was also VP Operations for inVentures from 2005-2017 commercializing a number of Canzone and inVentures business verticals including groundwater remediation, wellness and aquaculture.
4) 17 CO2 GRO Reps from five Provinces and 5 US States with one in Germany. Half of the CO2 GRO Reps were engaged with a predecessor CO2GRO company during 2008-2013 including the Company's first two CEOs. Five are agriculture science PHD's or are Professors in Ag Science.

John and Aaron sold gas infusion patent owner Canzone and gas infusion equipment manufacturing company inVentures (a Canzone licensee) in July 2017. They then joined CO2GRO full time to commercialize a dormant since 2014 CO2 gas infusion license.

Strategy. John executes the Board approved Business Strategy.

Development. Sam initiates CO2 grow trial leads with the 17 CO2 GRO reps and heads private and public funding, media, government and IR initiatives. He recruited the Company's 17 CO2 grow reps who are all on a 100% commission basis only from commercial CO2 equipment installations.

Operations. CO2 gas infuser trials and installations are performed under Aaron and one of his two master growers (one in Canada and one in the US). Upon sufficient plant growth acceleration trial proof, commercial CO2 system design, installation and long term site license and royalty negotiations are under Aaron and John.

CO2GRO's PATENTED DISSOLVING CO2 TECHNOLOGY

"We" (CO2GRO Inc. GROW.TSXV) dissolve CO2 gas without bubbles into water up to 2000 PPM at one atmosphere, **naturally, safely and economically.** Its use in dissolved CO2 grow trials has shown **sharply accelerated** algae and lettuce growth. Spraying dissolved CO2 on plant leaves **lets the entire surface leaf area absorb CO2 versus just through stomata pores.**

We have an exclusive perpetual royalty free global license to use CO2 gas infusion devices for the growth of all plants. The gas infusion patent owner (Canzone) granted this CO2 gas infusion technology license in 2012.

Since 2000**, over 1600 patented gas infusion devices have been commercially sold or leased** by Canzone and its gas infusion manufacturing affiliate inVentures. **Every Province and State** has had gas infusion installations for mostly groundwater remediation and aquaculture uses.

The first commercial gas infusion success was in 2000 to accelerate bacteria growth via dissolving oxygen into groundwater. The dissolved O2 helped bacteria rapidly eat hydrocarbon spills. In aquaculture, dissolved oxygen is commercially used to accelerate fish growth and reduce death rates in ocean well boat transport of lobster and other fish species.

OUR CO2 FOLIAR SPRAY PATENT APPLICATION

In July 2017, we filed for a provisional PCT patent for dissolved CO2 foliar spray using any fogging, misting, spraying or atomizing methods of delivering dissolved CO2 water onto plant leaves. Of the 10M US patents granted, there were **no** similar CO2 foliar spray patents granted to date**.** At the 2017 Las Vegas cannabis growers' conference, there were 673 booths providing services and growing supplies to cannabis growers. **NONE were for dissolved CO2 foliar spray.**

OUR 2018 CO2 GROW TRIALS

In February we started our first four of 20 CO2 grow trials we want to do in 2018 using our smallest CO2 gas infusers at grower sites. Monitoring and analysis of the CO2 grow trials is being done by our two Canadian and US master growers with guidance from our University and third party plant science contacts such as Dr. Matt Julius of St Cloud State in Minnesota.

We would like to do 10 indoor and outdoor cannabis and 10 indoor and outdoor lettuce/microgreens, flowers, outdoor potatoes, tobacco and grape trials for 2018. We have selected 10 to date from about 50 indications of interest.

Our initial Canadian cannabis trials are with Health Canada licensed medical cannabis growers that have ACMPR licenses to grow about 1000 plants each. These initial trials will show there are no residual effects from spraying dissolved CO2 onto plant leaves. In the US, we have two indoor, one Colorado and one California outdoor cannabis grow trials targeted for 2018. There is no issue in using dissolved CO2 in the US.

INITIAL SOUTH ONTARIO CO2 GROW TRIALS UNDERWAY

Due to limited initial bandwidth and strong Ontario support, we started our first four CO2 grow trials in south Ontario and may do half of our 2018 CO2 grow trials there. We will start another

set of lettuce grow trials at St. Cloud State to verify our 2013 University of Guelph lettuce trial results in April 2018.

We will also do a full scientific evidence study on cannabis buds grown using CO2 foliar spray. We want to show Health Canada that there is NO bud residue from adding CO2 in foliar spray irrigation water and NO human harm smoking buds grown with dissolved CO2 foliar spray.

If we get a major South Ontario grower wishing to use independent labs such as U of Guelph's or the Vineland or Harrow Research Centers, we will split the cost with a grower.

Our CO2 grow trials directly on client premises are costing $5,000-$10,000 per trial depending on scope, scale, number of plants to trial and location. We expect growers to regularly CO2 spray/mist their plant leaves in mostly AM daylight conditions when plant growth is fastest based on our scientific advice, plant species and plant maturity stages. We expect daily communication with our Canadian or US master grower re best application timing, volume and dissolved CO2 concentration.

GLOBAL MARKETS FOR DISSOLVED CO2 FOLIAR SPRAY

THE OPPORTUNITY

Our dissolved CO2 foliar spray technology will increase the globe's food production and plant yield potential. **There is no photosynthetic plant species that we could not enhance with dissolved CO2 at up to 2000 PPM without bubbles applied to leaves if plant growth is limited by CO2 availability.**

The global plant markets are enormous. We are therefore in discussions with global irrigation, greenhouse infrastructure and systems companies to be our Agri-Industrial partners that will help us penetrate global markets faster.

THE RISKS

Our primary risk is whether we get enough faster economic plant growth to make it worthwhile for growers to install our commercial CO2 systems versus delivered CO2 gas costs.

Indoor moisture mildew risk. We are determining in all trials whether we have applied too much CO2 enriched moisture onto plant leaves indoors leading to increased powdery mildew fungus risks. Our two master growers are keenly aware of higher mildew risk as are our indoor clients. Optimal trial design on how much to dry cannabis plants overnight whose moisture is root fed for AM only CO2 foliar spraying and in what spray doses and frequencies will evolve. **For overhead booms and water spray systems on lettuce/microgreen/plug/early stage flowers, we will simply integrate into their normal daily watering rates to start.**

Optimizing dissolved CO2 to targeted plant grow curve profile risk. Plant responses will vary by crop and species, their maturity and their leaf size to amount of dissolved CO2 they can consume. We do not yet know what plant toxicity limits are if any to dissolved CO2 using 800 PPM, 1500 PPM or 2000 PPM of CO2 enriched water. **We have proven that hydroponic lettuce and algae thrive in 2000 PPM CO2 enriched water.**

Outdoor moisture risk. If we tap in dissolved CO2 to existing irrigation systems and do not apply any additional CO2 enriched moisture, **there is NO risk of powdery mildew above normal irrigation conditions.** We would gradually increase brief spraying of CO2 enriched water in between irrigation cycles where appropriate if initial yield results are positive. Less water sprayed overhead more frequently may also be more optimal with enriched dissolved CO2.

We have NO CO2 gas infusion technology or commercialization risk as it has been commercially proven since 2000 with over 1600 commercial gas infusion installations. Some commercial applications were for dissolving CO2 gas to capture chlorinated solvents.

We have NO CO2 feedstock supply risk. CO2 gas is plentiful. However, industrial gas companies delivering CO2 gas to certain outdoor and indoor farming locations may prove to be too expensive relative to higher yield values via using CO2 foliar spray in certain crops.

THE GLOBAL CO2 RETAIL OPPORTUNITY

Our preliminary estimates and percentages of the addressable global retail markets for dissolved CO2 foliar spray are:

1) 10% of $8 Trillion/y of food grown outdoors favoring leafy greens
2) 25% of $400 Billion/y of food grown indoors favoring leafy greens
3) 25% of $800 Billion/y of tobacco grown indoors and outdoors
4) 25% of $200 Billion/y of flowers and non-food plants grown indoors and outdoors
5) 50% of $50B/y (by 2022) legal cannabis grown indoors or outdoors

OUTDOOR CO2 FOLIAR SPRAY MARKET

About 40% of all food grown outdoors is irrigated, either by sub-irrigation, drip irrigation to the roots or captured in tidal or monsoon areas or by canal. Dissolved CO2 **does not work on roots** so these root irrigation methods (half of irrigation or 20%) are **not** CO2 opportunities.

That leaves 20% overhead foliar sprayed where our CO2 will work. Foliar spray systems vary from pressurized sprinkler systems and pivots, water wheels, hoses, misters, foggers, atomizers etc. **Dissolved CO2 irrigation works best being applied to plant leaves above ground.**

We assume **half** of this above ground foliar spray for typically high value vegetables and other cash crops are available to us for CO2 foliar spray opportunities. **That nets to 10% of the $8 Trillion global retail food market or $800B/y of addressable outdoor irrigated food production land.**

INDOOR CO2 FOLIAR SPRAY MARKET

We conservatively assume 25% of the greenhouse food grown can use dissolved CO2 effectively. We prefer using clean food grade CO2 gas delivered by industrial gas companies to greenhouse adjacent CO2 towers for CO2 gassing and organic certification. We can tap into any CO2 gas source and irrigation system but some greenhouses may need irrigation retrofits. Here is one that will not:

This about to be 230,000 sq ft Ontario lettuce/microgreen greenhouse is installing water spray racks over double tables of grow medium. These racks are tied into the main central water supply cross pipes (left picture centered). This grower does daily AM spraying of mostly microgreens, lettuce and basil grown in 10-30 day periods for major Ontario grocery stores.

We would simply tie in our CO2 gas infusion devices into the main water cross pipe with a 3/8 CO2 hose per rack tied to an infuser. We are looking at **ALL** existing overhead boom or spray configurations as we can tie in our CO2 systems **with minimal capital.**

Other existing greenhouse configurations will need to be modified to floor foggers/misters pointed upwards into the plant canopy if not run overhead onto the canopy. That will require more capital to add our dissolved CO2 foliar spray method or to retrofit an existing one that gasses CO2 (typically from floor level). Plant yield improvement economics may therefore have to be more material to proceed to a commercial CO2 system.

WHOLESALE (WH) GLOBAL REVENUE/EBITDA

We assume wholesale food and non-food plant growers get 20% of retail revenue other than cannabis growers at 50%. We also assume 20% EBITDA is generated by food growers on their wholesale revenue, 15% EBITDA for tobacco and 40% of EBITDA for cannabis bud growers. The wholesale global revenue and EBITDA grow market for CO2 foliar spray potential is therefore:

1) 10% addressable x 20% WH x 20% EBITDA x $8 Trillion = $32B/y of EBITDA
2) 25% addressable x 20% WH x 20% EBITDA x $400 Billion = $4B/y of EBITDA
3) 25% addressable x 15% WH x 20% EBITDA x $800 Billion = $6B/y of EBITDA
4) 25% addressable x 20% WH x 20% EBITDA x $200 Billion = $2B/y of EBITDA
4) 50% addressable x 40% WH x 40% EBITDA x $50 Billion = $4B/y of EBITDA

This is $48 Billion/y of wholesale EBITDA that our dissolved CO2 could materially enhance.

REGIONAL AND GLOBAL LICENSING PROSPECTS

The scope of global market potential for licensing our dissolved CO2 use is therefore huge. We estimate we have eight verticals (plant species) to date in five major geographies we could license or a potential 40 licensees. We are approaching leaders in these plant and geographic segments now to accelerate global market penetration of our patented and patent pending dissolved CO2 technology.

HIGHER CROP YIELDS INDOORS AND OUTDOORS

Indoors, we expect **10%-20%** higher greenhouse crop yields using dissolved CO2 irrigation over established CO2 gassing at 800 PPM. Outdoors, we expect **10%-100%** higher yields in dry areas like California's interior where no one gasses CO2 or has any other CO2 delivery option. **Outdoor baseline plant yields are much lower than in greenhouses due to lack of outdoor CO2 options until now.**

DISSOLVED CO2 BUSINESS MODELS

Our outdoor business model differs a little from our indoor business model since no one gasses CO2 outdoors as it dissipates immediately. CO2 gassing usage savings can only occur indoors where CO2 gassing is used.

DISSOLVED CO2 OUTDOORS

We will site license our commercial CO2 irrigation equipment in 5 year long term lease arrangements with 1-5 year extension options. This matches what the industrial CO2 gas

companies like Linde, Praxair and Air Liquide do that lease their CO2 tanks to greenhouse owners for 5 years.

We may charge a fee per dissolved CO2 gallon in the $0.02-3/gallon area for up to 1M gallons/y, $0.01-2/gal area for 1-10M gallons/y and $0.01/gal area for use above that. We will track the gallons used in water meter readers and the amount of CO2 dissolved at a 2000 PPM dissolved CO2 gas level. ALL incremental yield improvement value post our fees will be to the benefit of the greenhouse/indoor grower.

DISSOLVED CO2 IRRIGATION INDOORS

We will also site license indoor growers for 5 year lease terms plus one to five year extensions and keep or split CO2 gas savings we expect to achieve. We will charge similar fees per dissolved CO2 gallon used. ALL incremental yield improvement value post our fees will be to the benefit of the greenhouse/indoor grower.

DISSOLVED CO2 DEAL CUSTOMIZATION

All our CO2 gas infusion projects will have some customization based on facility size, plants grown, CO2 needs, irrigation levels and irrigation modifications required etc. We will agree to sharing incremental value once defined via proven CO2 grow trials giving 80%-90% of incremental value to the grower and 10-20% to us prior to any commercial CO2 gas infusion installations. Our licensing fee will be set to cover 100% of our installation and CO2 gas infusion equipment cost in year 1.

KIMBALL CO2 STUDY OF GASSING PLANT YIELD EFFECTS

We focus on B.A. Kimball's 1983 indoor CO2 gassing plant yield study that analyzed 437 CO2 gassing studies on 37 plant species. He concluded that **greenhouses average 33% more yield using 800 PPM of CO2 gassing** above outdoor plant yields without CO2 gassing. Excerpts from his CO2 Study showing lowest to highest CO2 yield response rates to 800 PPM of CO2 gassing:

	Yield at 800 PPM of CO2	Number of Observations
Tomatoes/Peppers	1.20	73
Roses	1.22	20
Strawberries	1.22	10
Cucumbers	1.30	12
Grains (avg)	1.32	34
Avg of 37 species	**1.33**	**437**
Lettuce	1.35	54
Sativa cannabis	**1.44**	**4**

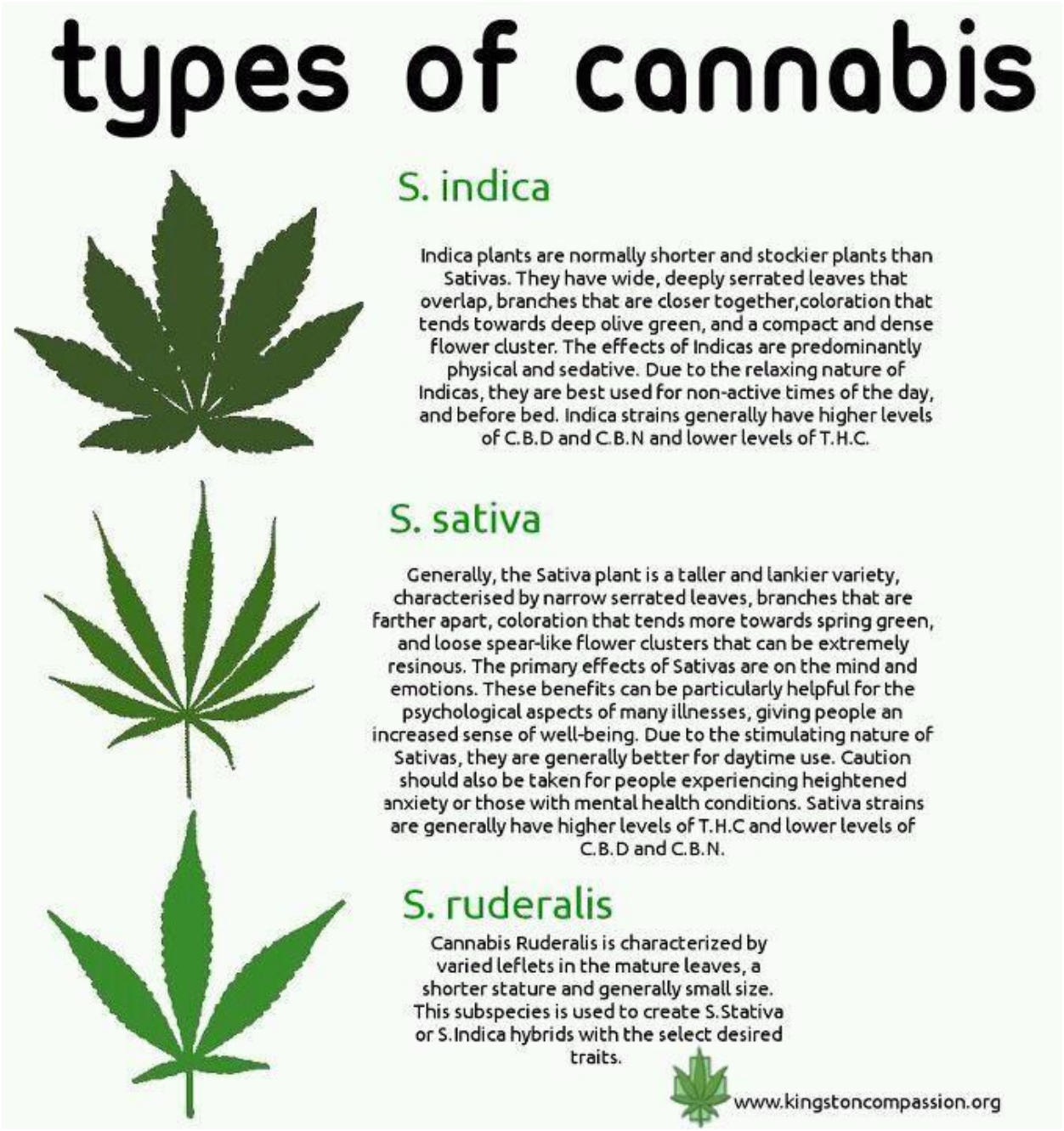
Potatoes	1.64	12
Beans/Peas	1.85	12
Cotton	2.59	2

We target our dissolved CO2 grow trials on plants yielding 33% or more with 800 PPM of CO2 gassing such as potatoes, lettuce and beans/peas as well as cannabis. Sativa cannabis strains trialed yielded 40%-45% more based on Suran Chandra's 2008-11 scientific work for the US Govrnment (2011 Photosynthetic Response of Cannabis Sativa to Elevated CO2)

Mr. Kimball's conclusion for lettuce was a lettuce grower could not get more than a peak 145% yield increase at 800 PPM of CO2 gassing versus no gassing and a 153% maximum at a 99.9% confidence level. **Our best independent lettuce grow trial at U of Guelph had 100% additional dried lettuce biomass growth ABOVE the CO2 gassing lettuce grow baseline set at 800 PPM.**

The **ONLY** explanation is that dissolved CO2 water **dramatically increases** hydroponic lettuce yields over Kimball's maximum CO2 gassing yield improvement limit of 153%. We believe this is due to the **ENTIRE lettuce leaf surface area sitting in CO2 enriched hydroponic water** versus CO2 gassing that can only enter lettuce leaf stomata (pores).

We will replicate our 2013 University of Guelph lettuce trials starting in April 2018 at St. Cloud College under Dr. Matt Julius and his biology team in their expanded greenhouses.



Based on the size and thickness of the cannabis leaf canopy of indica, sativa and ruderalis and the results of studies on varying levels of CO2 gassing done by Suman Chandra, **we are convinced that our greatest dissolved CO2 value will be to growers of cannabis.**

MANIC BOTANIX (www.manicbotanix.com) CANNABIS AND CO2

According to their CO2 Enrichment - Gaseous Gold article for cannabis using 800 PPM of CO@ gassing:

"over 90% of dry matter in every plant came from CO2"
"elevating CO2 levels in cannabis grow rooms can increase yields by 20-30% and reduce growing time by 10%-30%"
"adding CO2 will thicken stems, and create larger leaves and root systems"
"higher CO2 levels leads to higher trichome production, flavenoids and phenolic content in some cannabis species"

OUR OBSERVATIONS

We have met a number of US and Canadian cannabis growers and their indoor Canadian and US cannabis operations from 1,000 to 100,000 cannabis plants as has our Canadian master grower. He is half way on our first three ACMPR cannabis grow trials using dissolved CO2 foliar spray. General observations on now 18 inch size cannabis plants using CO2 in the first four weeks from 4 inch seedlings are: 1) CO2 enriched plants have larger and thicker leaf surface area and leaf counts versus control plants, 2) are darker green than the control plants, 3) appear healthier than the control plants.

There are now 5000 cannabis strains. More precise grow responses to CO2 foliar spray may take several trials as results will vary based on indoor/outdoor conditions, grower skills, irrigation needs, nutrient and light availability levels, temperature and humidity variability and control, air movement etc

We believe by using CO2 foliar spray we will add 10%-20% more cannabis bud yield or one more cannabis crop/y indoors to six from five versus just CO2 gassing. Outdoors we believe we will add 33% more bud yield to the one outdoor cannabis crop nature allows per year.

OPTIMAL CANNABIS CO2 GASSING AND OTHER GROW VARIABLES

CO2 gassing is most effective during the 4-9 week vegetative cannabis plant growth period. The indoor growers we have met gas CO2 from 800 PPM-1500 PPM in their grow rooms or greenhouses during their typical 18 hour per day vegetative grow periods. CO2 gassing works best when “rained down” on plants from above and hissed up from floor perforated channels to get CO2 gas near both sides of plant leaves.

Daylight CO2 Gassing Use. Typically, CO2 gassing levels are raised to targeted PPM levels within thirty minutes of daylight break and dropped to 400-500 PPM by dusk as cannabis and most other photosynthetic plants do not absorb CO2 gas while “sleeping” at night. **Most cannabis growers would like to vary their CO2 gassing levels to the maturity of their plants if they can.**

“A lot of growers believe” in using CO2 gassing through the vegetative growth period until the last two week bud flowering stage (growweedeasy.com).

Large Open Greenhouses. Owners of large open cannabis greenhouses **have no choice** but to keep a constant CO2 gassing level as CO2 gas rapidly spreads out equally in open greenhouses. We visited Aphria that uses a 8-9 week grow rotation from 14-18 inch potted plants to bud harvesting of nature 36-42 inch potted plants. All growing and harvesting takes place in the same open greenhouse area that is held to 800 PPM of CO2 gassing in day periods. **That is not ideal for optimal cannabis growth.**

Lighting and Nutrients. For extra CO2 gassing to be effective, a grower has to have the proper light strength between 7500-10,000 lumens and red-blue wavelength. Additional nutrients at a 110% ratio to increased bud yield expectations are also essential to keep the plant growth and quality in balance. If a grower is trying to achieve a 30% yield increase, he/she will need 33% more nutrients and stronger lighting for photosynthesis to occur with higher CO2 availability.

Temperature and Humidity Levels. Temperatures in control grow rooms using CO2 gassing should be warmer than without CO2 gassing to 90 degrees **BUT CONSTANT**. Humidity should **never exceed** 60% during budding and 70% during vegetative grow cycles or powdery mildew risks come into play. **The more room temperature and humidity varies the more risk of powdery mildew develops.**

DISSOLVED CO2 TAILORING FOR OPTIMAL CANNABIS YIELDS

Aphria and others with open greenhouses have to fill their entire greenhouse with CO2 gas to the 800 PPM or other level they desire **even thought CO2 is not required during bud harvesting and less at the earlier seedling grow stage.**

Dissolved CO2 foliar spray will allow open greenhouse cannabis growers to tailor the profile of desired CO2 levels from 600 PPM on seedlings up to 2000 PPM on vegetative growth plants and down to 400 PPM at bud harvesting, **all in the same grow area.**

HIGH VALUE CANNABIS VERSUS LOW VALUE TOMATOES

Cannabis growers get 8-10 times more revenue per sq ft or $600/sq ft to $800/sq ft than tomato growers at $80-$90/sq ft. Also, growing cannabis bud yield EBITDA margins are **40-50% while growing tomatoes yields EBITDA margins of 15%-25%.**

This means cannabis growers get about 40X-50X more EBITDA per sq ft than tomato growers. Any yield improvement using dissolved CO2 irrigation will therefore **bring 40X-50X more EBITDA to a cannabis grower than a tomato grower.**

Aphria estimated last October 2017 that it will generate $600M/y from its 1M sq ft Leamington greenhouse once finished averaging 5 cannabis crops per year.

We believe using CO2 foliar spray will add a sixth cannabis crop/y due to plant growth acceleration in the vegetative state. This would add $120M/y of additional bud revenue. **At 50% EBITDA, this would mean an additional $60M/y to Aphria using dissolved CO2 foliar spray.**

With $200M price tags for new 1M sq ft cannabis greenhouses **we would also be saving 17% of the cost of a new greenhouse by adding one more crop/year.**

Other than several more medical tobacco greenhouses that are now likely to be built for high value human flu vaccines, using dissolved CO2 irrigation to enhance bud yields **will be worth by far the most to cannabis companies per sq foot over ALL other non-cannabis plant growers.**

LETTUCE AND MICROGREEN OBSERVATIONS

We have one lettuce and another micro green trial underway and expect two more to start shortly in Q2. Two clients grow numerous other micro greens like wheat grass and leafy spices like basil. One grow trial may turn into 10- 15 sub trials and additional 10-15 optimization sub-trials with different sets of conditions such as both control and dissolved CO2 getting 25% more nutrients and/or 25% more light strength etc. to determine where crops that are CO2 gassed limit out versus precision targeted dissolved CO2.

We have proven at the U of Guelph that hydroponic lettuce grows much faster and larger than a baseline lettuce growth rate using CO2 gassing at 800 PPM. We are confident that lettuce yields will sharply improve both indoors and outdoors with dissolved CO2 water **adding 1-2 more lettuce crops/y outdoors and 3-4 more lettuce crops/y indoors.**

Within the five types of lettuce – looseleaf, crisphead, butterhead, romaine and bavarian there are about 20 sub-varieties that need grow periods of between 45 days (green ice and red salt looseleaf) to as long as 120 days (arctic king butterhead) outdoors.

There are **numerous other leafy greens** that should benefit including a few spices like leafy basil and some other microgreens and sprouts that are cut early before maturity.

Besides greenhouse lettuce growers, we are in discussions with several indoor vertical and horizontal lettuce growers in Canada and the US and have reached out to US horizontal and vertical indoor lettuce growers to see if integrating our dissolved CO2 technology has yield merit. We are also reaching out to outdoor lettuce growers in California (3-4 crops per year) and Arizona.

We have signed an NDA with a major US industrial CO2 gas company for future California and Western US CO2 supply. They will deliver CO2 gas for our initial CO2 grow trials at no cost. We

also wish to work with global irrigation companies who have installed the overhead sprinklers in California and elsewhere. Their irrigation systems are ideal for us to tap dissolved CO2 into.

POTATO OBSERVATIONS

Tubers like potatoes respond extremely well to CO2 gassing. They have a very large leaf canopy and their fruit is about 80% pure carbohydrate (carbon sugar).

We have two outdoor potato grow trials to date in BC and South Alberta for late spring and looking for more in Manitoba, Idaho, South Ontario, New Brunswick and PEI. We have also approached US and Canadian potato organizations like the U of North Dakota willing to do research for us and the Alberta's Potato Growers Association.

Optimal potato photosynthetic growth is 8-10 AM and in 80-90 degree temperatures. There are some potato varieties like Triumph that respond the least to CO2 absorption so will avoid that strain initially. (American Potato Journal May 1951 Vol 28 Issue 5).

RE outdoor potato source of CO2, we are looking at the South Alberta biogas plants in Lethbridge and Coaldale (the Perry family) for 2019 as possibly a CO2 supply source. We would connect our CO2 gas infusers to these plants capturing and dissolving some of the wasted 40% CO2 gas from their raw biogas streams. The biogas plant owners would benefit would be getting purified pipe or at least truck grade methane while we would get free or near free dissolved CO2 gas to use for outdoor potato irrigation.

The CO2 enriched water could also be used on adjacent potato rotation crops like sugar beets, peas and bean farms to increase those plant yields. We proved we can separate CO2 from biogas in 2013 at the Grand Falls New Brunswick biogas plant that uses McCains potato waste.

Based on potato CO2 gassing studies increasing the size of potatoes by up to 50%, **we believe we could do the same outdoors** in sub-10 inch rainfall areas like Alberta and Idaho that frequently irrigate their potato fields. While football sized potatoes will not appeal directly, they will make a lot more french fries and chips.

MEDICAL TOBACCO OBSERVATIONS

We are interested in a CO2 grow trial at Medicago's Quebec City tobacco sprout greenhouse. This 100,000 sq ft greenhouse grows tobacco sprouts to make human flu vaccine from genetically modified tobacco sprouts harvested at only 17 days growth. Medicago is looking to build a new 300,000 sq ft greenhouse in Quebec some time in 2018.

Chicken egg flu vaccines have not changed for decades with only partial human protection success. Flu vaccine success varies from 10% (Australia 2017 and North America 2017-8) to 60%

effective depending on the luck of Disease Control Centers guessing the prominent virus strain **six months prior to the actual flu season.**

Medicago estimates a 60%-80% success ratio for its tobacco based flu vaccines as it only talks one month from tobacco plant harvest to final flu vaccine shots. **This eliminates most** of the guessing of the prominent virus strains in upcoming flu seasons.

Nick Madeiros, who represents Medicago after building the world's largest chicken egg vaccine plant for Sanofi, believes that tobacco plant based vaccines **will wipe out less effective chicken egg vaccines in 10 years.** The global vaccine market is $7B/y.

We would like to prove to Medicago that we could accelerate their tobacco sprout plant growth from 17 days to a potential 11-12 days using dissolved CO2. We are hopeful to do a grow trial this year. If it proceeds and is successful and fully implemented, **it could save Medicago 40% of the cost of building a new tobacco greenhouse.**

OUTDOOR TOBACCO OBSERVATIONS

Since the retail global tobacco business is still $800B/y, we are pursuing tobacco grow trials outdoors as well, initially in South Ontario. We are advancing on one small outdoor tobacco grow trial with the help of the Ontario Tobacco Research Centre in Tilsonburg, Ontario for a start in late May 2018.

FLOWER OBSERVATIONS

We have two high value flower grow trials confirmed with one in Ontario outdoors and one in Ohio indoors. They wish to improve both yield/acre and manage maturity timing as prices vary during peak harvest periods. Both want to compete better against international cut flower imports. It is their view that most Ontario and Ohio flower greenhouses gas their high value flowers with CO2 to increase yield and maturity.

USA DISSOLVED CO2 IRRIGATION TARGET MARKETS

Our US outdoor CO2 grow trial focus is in these SW US States:

State	Percentage total withdrawals	Cumulative total withdrawals
California	20.5%	20.5%
Idaho	12.5%	33%
Colorado	8%	41%

The three Western US States listed use 41% of all US irrigation which is where we are focused. California is #1 producing $50B/y in fruits, vegetables, nuts and other crops. Legal California cannabis buds are $2B/y as of Jan 1 2018 in a $5B legal retail market. California is therefore our #1 US market focus for dissolved outdoor CO2. Colorado is #2 for summer outdoor cannabis growth (we have one trial there) and Idaho is #3 for outdoor potatoes.

The drier the outdoor grow area the more effective dissolved CO2 will be. The arid Interior BC and South Alberta in Canada, SW US in California and Idaho, Australia and Middle East look the most promising for best yield increases using commercial CO2 gas infusers.

For example, California lettuce growers use 18 to 24 inches of sprinkler irrigation per lettuce crop. They produce 3-4 lettuce crops per year. We want to tap existing lettuce irrigation systems and dissolve CO2 gas into those systems prior to irrigation to accelerate lettuce growth. We believe we can add one additional lettuce crop/year. **If successful, that would add another $0.5B/y to California's $2B/y lettuce crop.**

LIKELY BEST OUTDOOR RESPONSES TO DISSOLVED CO2 FOLIAR SPRAY

We expect the best plant yield increases with dissolved CO2 foliar spray to be for dark, big leafy green plants such as lettuce, tobacco, indica cannabis, hemp, spinach, kale, cabbage, leafy micro greens, broccoli, cucumbers, peppers and leafy spices like basil. **The more surface area leaves have the more dissolved CO2 gas we can apply to the entire leaf surface area.**

Also, lettuce and tobacco leaves and micro greens are picked before they flower as finished product. Additional dissolved CO2 will work best during the immature vegetative growth stage of plants (90% of total effect).

In dry areas, outdoor growers may only get partial yield success using dissolved CO2 in only their regular watering schedules of 3-4 times per week. Maximum yield benefits will likely

require more early day light spraying of CO2 rich water onto leaves as the sun comes up to kick start the day's plant grow cycle. 80% of daily plant growth is typically done by Noon.

The more automated grower sprinkler systems are and the more valuable the crop is and/or the more responsive to dissolved CO2, the more frequent growers may add a light daily CO2 spray between their regular irrigation cycles to maximize plant yields.

HALF THE INDOOR CO2 GASSING USE FOR MORE INDOOR CROP YIELD

We will also cut the cost of greenhouse CO2 gassing in half. This is due to far more precise CO2 foliar spraying on plant leaves only where CO2 is absorbed. Also, the efficiency of the **entire plant leaf** being coated with dissolved CO2 versus just the leaf stomata pores taking up CO2 gas from the air **greatly expands the surface area where dissolved CO2 gas can be absorbed by plant leaves.**

Indoor growers will no longer need to gas CO2 into their entire greenhouse to reach their desired PPM levels and lose 60% of the CO2 gas they use (OMAFRA) to do so. This major CO2 cost saving using dissolved CO2 foliar spray will appeal more to lower revenue/EBITDA growers and companies that grow lower margin lettuce, peppers, cucumbers, tomatoes, flowers etc.

INDOOR DISSOLVED CO2 IRRIGATION MOISTURE RISKS

There is no issue using dissolved CO2 with excess moisture outside as growers will only irrigate when their soil and plants are dry. Excess moisture indoors can however, lead to powdery mildew and other moisture related plant diseases.

We expect that to maximize plant yields an indoor grower may have to spray pulse a mist of dissolved CO2 water on younger plant leaves using high pressure low volume (HPLV) units that use 10-40 times less water than sprinklers like misters. Peak economic yield improvements may need several AM CO2 sprays per day when plants are growing the fastest in morning light.

We expect leaves to absorb all the dissolved CO2 gas they can handle at any one time **in less than two minutes due to how thin most leaves are.** The trick then is to get the "spent" moisture off the leaves with dehumidifiers or fans or ozone applications before the onset of moisture related plant diseases indoors if a plant is vulnerable to moisture issues like powdery mildew.

Each plant species and strain will require some trial and error using dissolved CO2 foliar spray to balance maximum yield improvement potential with minimum moisture related disease risk. What we know from science literature is **the rate of water vapor transpiration through plant leaves falls in the presence of more CO2 gassing.**

This reduced transpiration process is via the guard cells on the outside of plant stoma that narrow in minutes to take in more CO2, thereby reducing the outflow of water vapor. **This will be important in dry grow areas as less water will be required/unit of higher plant yield.**

In plants like leaf lettuce or algae that thrive in water **there will be no moisture issue with dissolved CO2.** Hydroponic leaf and algae growth should therefore have **the maximum** yield improvements over CO2 gassing as we have already proven in independent grow trials. We expect to prove that again at the U of St Cloud under Dr. Matt Julius in Q2, 2018.

DISSOLVED CO2 FOLIAR SPRAY SAFETY VERSUS CO2 GASSING

CO2 gas is essential for all photosynthetic plants but can **disorient or kill humans** at higher 10,000 PPM+ levels. Nevada and California mandate CO2 alarms that trigger when CO2 concentration goes above 5000 PPM in US grow rooms. There must be immediate pre-determined venting capacity triggered by such CO2 alarms going off. **At the Ontario Vineland Research Center, CO2 alarms go off above 1500 PPM.**

Astronaut Scott Kelly from his book "Endurance" stated the worst aggravation for him at the Space Station for one year was breathing excess CO2. "As the levels crept up he'd suffer from headaches and congestion followed by burning eyes, irritability and thinking straight".

We can eliminate CO2 gassing risk to humans in greenhouses with dissolved CO2 irrigation versus CO2 gassing. We have a 99% CO2 retention rate in water over 24 hours at 2000 PPM at one atmosphere and 15 degrees C versus **100% lost in 2 hours in greenhouses if not used by plants and 60% of CO2 lost if used by plants.**

CO2 FOLIAR SPPRAY SCIENCE ARGUMENTS

1) **Dissolved CO2 leaves no residue** as either a plant leaf takes in CO2 and converts the carbon to sugar or it doesn't.,
2) **It is safer for humans to foliar spray** dissolved CO2 than gas an entire greenhouse with CO2,
3) **it is more effective** than CO2 gassing in increasing plant yields,
4) **Water already has dissolved CO2 gas** that Nature dissolves out of air with 410 PPM into water and
5) **Humans drink CO2 carbonated pop, water and beer without health consequences.**

To date, Health Canada has approved **28,000 Canadian medical cannabis grow licensees** for growing 140,000 cannabis plants. This was 8% of Canada's overall 2017 cannabis production.
The 150,000 approved medical cannabis patients in Canada all have the right to grow only the amount they consume.

PLANT LEAF PHYSIOLOGY

Leaves can only absorb CO2 gas via their stoma as pictured into their tissue cells as per below:

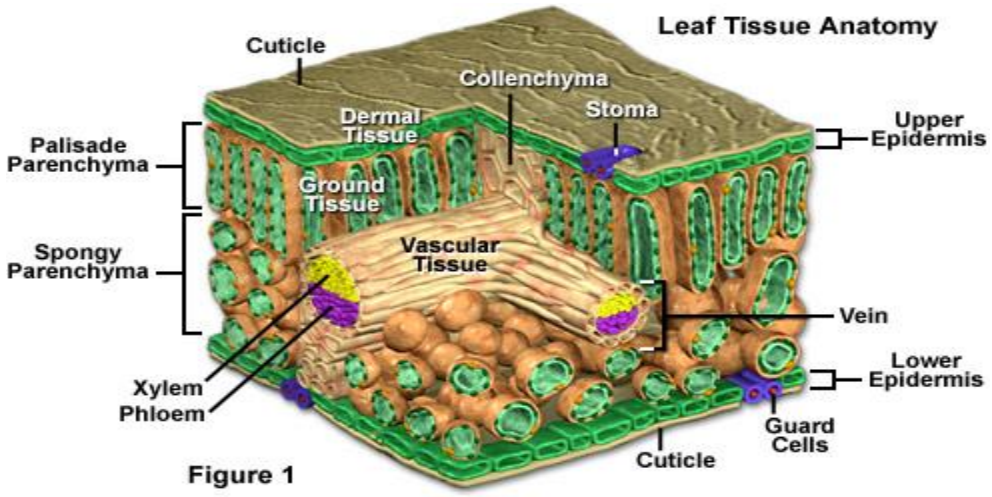
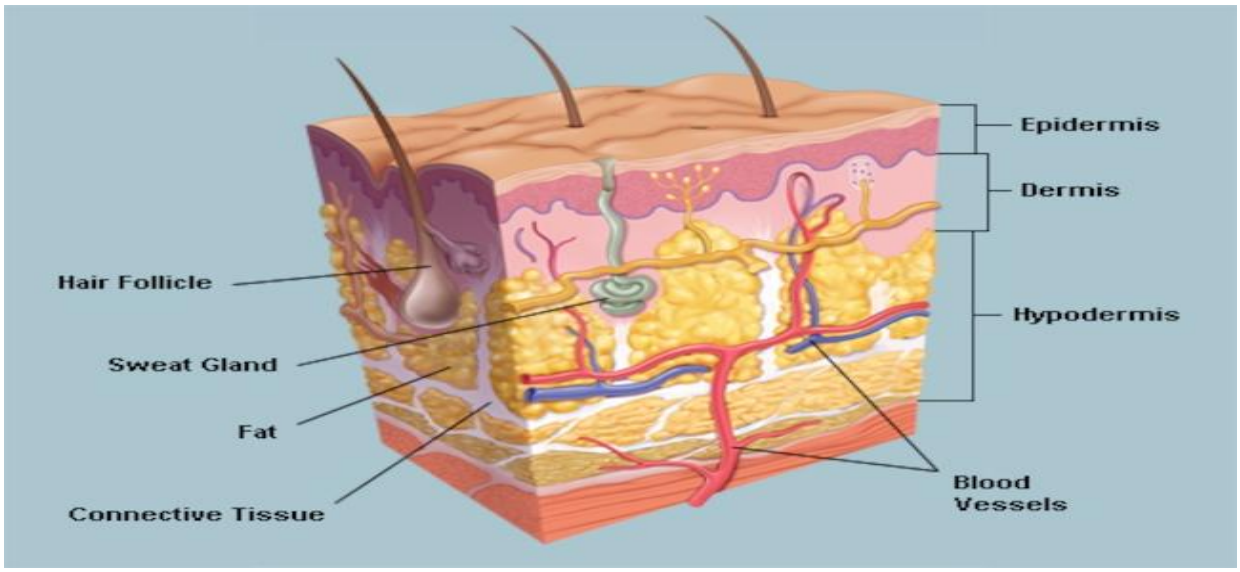


Figure 1

However, when dissolved CO2 water is applied to a plant leaf, **the entire leaf dermal tissue becomes a big stoma as it is semi-porous like human skin.** The osmotic pressure on the outside of the leaf due to the dissolved CO2 concentration and the small size of CO2 molecules is why Nature forces dissolved CO2 into leaf membranes. A key plant leaf enzyme (Rubisco) attaches to CO2 molecules entering a leaf and delivers the CO2 for photosynthesis in chloroplast cells.

HUMAN SKIN PHYSIOLOGY

We expect the same osmotic effect in plant leaf dermis with dissolved CO2 **except faster than human skin absorbing dissolved oxygen** as plant leaves are thinner. Human skin layers:



We know from 500 human skin trials that dissolved oxygen in water applied via a shower or bath without any additional pressure **goes right through human skin, through human dermis and right into human blood capillaries in less than two minutes (Dr. Stacy Reading's White Paper peer reviewed)**.

The osmotic effect of dissolved oxygen passing through human skin is similar to how liquid nicotine in nicotine patches pass through humans skin. However, it takes several hours due to nicotine being a larger molecule than several minutes for dissolved oxygen..

TESTING GENETIC PLANT LIMITS WITH DISSOLVED CO2

The peak of earth's air CO2 gas concentration over the past 500 million years according to scientists **was 5000 PPM**. A peer reviewed Live Science article (Nov 2014) from the National Academy of Science estimated the level of CO2 gas in the air during the 100 million year Jurassic dinosaur period **was 5 times today's CO2 level or 2000 PPM.**

Plants in Action estimates 1500-3000 PPM of CO2 gas was in the atmosphere during the mid- Cretaceous period (100M years ago). At that CO2 gas level, global temperatures were 90 to 100 fahrenheit at the North and South poles.

The herbivorous dinosaur pictured (diplodocus) was 100 feet long with a 40 foot neck so it could eat the tops of plants and trees where new plant growth is the most nutritious, like giant modern day giraffes.

Over 85% of plants today (C3's) still have genetic codes tied to that mid-Cretaceous era 100M years ago. These plants consume CO2 gas via their stoma from the atmosphere while some newer C4 plants do not. They have evolved different processes for absorbing CO2 gas to make their food/sugars.

CO2 GASSING ECONOMICS

Ontario's OMAFRA estimates 60% of CO2 gassing in greenhouses is LOST to the atmosphere at 1300 PPM via air exchange, humidification, dehumidification and porous greenhouse leakage. If no plants were in a typical greenhouse absorbing CO2 gassed, **the CO2 would be 100% gone in 2-3 hours**. Dissolved CO2 in water at 2000 PPM **will stay in water saving most of**

that lost 60% until used by plants via their leaves or until exposed dissolved CO2 water evaporates.

OMAFRA's estimates of CO2 gassing lost at a 500,000 sq ft Ontario greenhouse is:

1) 0.37 KG or 60% of CO2 per hour for 100 M2 is required to maintain gaseous CO2 at a 1300 PPM level without any plant use **so 100% lost.**
2) 0.24 KG of 40% of CO2 per hour for 100 M2 is 100% consumed by plant leaves.

This equals 0.61 KG of CO2 gassing/hour to fill a 100 M2 greenhouse grow space to 1300 PPM of CO2 gas. An average Ontario greenhouse is 13 acres or 500,000 sq ft (45,000 M2 at 11 sq ft/M2).

Annual Ontario 500K sq ft greenhouse CO2 gas usage and cost is therefore:

3) 0.61 KG/hr of CO2 gassing x 15 average daylight grow hours x 45,000 M2 (500,000 sq ft/11) x 300 days of growing at 1300 PPM) =
4) 1,235,250 KG/y of CO2 used (1,235 CO2 tonnes/y) to gas CO2 at 1300 PPM during light grow periods.

Assuming a $120/tonne delivered bulk CO2 cost, annual Ontario greenhouse CO2 gassing cost at 1300 PPM would be **$150,000/yr** (1,235 tonnes x $120/CO2 tonne).

SOURCES OF CO2 GAS

Increasingly, large greenhouses are contracting for delivered food grade industrial CO2 gas from Linde, Praxair, Air Products etc. who install onsite CO2 storage towers. If ethanol plants are nearby, their CO2 emissions from corn fermentation **are a cheaper source of CO2 than from refineries.** Older greenhouses still burn natural gas or propane for their CO2 emissions as well heat and power.

While relatively clean, there are chemical reactions burning natural gas or propane and injecting the exhaust into greenhouses. These reactions cause humidity to rise, add particulates, ethylene and traces of formaldehyde into the air **that greenhouse workers are constantly breathing.** This is why more greenhouses are switching to clean food grade CO2.

WIDE RANGE IN DELIVERED CO2 COST

The US Midwest and south Ontario are blessed with numerous mostly corn based ethanol plants recently built. CO2 users nearby have the lowest locally priced delivered CO2 gas. About 33% of the weight of corn kernels used in ethanol fermentation is emitted as clean CO2 gas. Industrial CO2 gas companies will construct adjacent CO2 capture units to ethanol plants to

liquefy their low cost CO2 emissions if there is nearby CO2 demand as in southwest Ontario greenhouses.

All the CO2 gas about to be captured at a new Aylmer Ontario Air Liquide CO2 facility being connected to IGPC's Aylmer ethanol plant **is destined to Leamington greenhouses**. Transport will be via 20 tonne compressed CO2 tankers.

Leamington greenhouses are two hours away from Aylmer so a four hour round trip plus an hour to unload. We estimate Leamington greenhouse owners will pay C$120/tonne in Ontario for this new ethanol based CO2 supply.

CO2 buyers in the US Midwest pay even less than C$100/CO2 tonne delivered as they have far more ethanol plants with CO2 emissions than local CO2 demand. However, in California, we have seen bulk food grade delivered CO2 quotes **up to US$300/tonne** as there are very few ethanol plants there. **Greenhouse CO2 gas savings in California would therefore be much higher using dissolved CO2 irrigation and more expensive for outdoor CO2 irrigation.**

CO2 GAS EMISSION COSTS RISING

Canada's Federal government is demanding **all provinces charge $50/CO2 tonne emitted as of 1/1/22.** Ontario has agreed to do so. **T**he 0.37 KG lost per hour attaining a 1300 PPM level in 500,000 sq ft greenhouses **is 750 CO2 tonnes lost/y.** At $50/tonne in 2022, **it will cost an additional $37,500/y** for Canada greenhouses losing the CO2 gas they need to reach their desired CO2 gassing levels.

DISSOLVED ONTARIO CO2 COST SAVING SUMMARY

We will save a 500,000K sq ft Ontario greenhouse $100,000/y of their total $187,500/y CO2 cost starting in 2022 ($150,000/y lost CO2 gas cost plus $37,500/y CO2 emission cost) using targeted dissolved CO2 water versus general CO2 gassing. **This savings number will increase as delivered CO2 gas cost increases.**

OVERALL SUMMARY

We are convinced that dissolved CO2 up to 2000 PPM applied by foliar spray will enhance indoor food and non-food plant growth beyond CO2 gassing. We are also convinced that outdoor plant yields limited to Nature's 400 PPM of CO2 will have even greater yield effects than plants gassed indoors.